

Morphosyntax

Constructions of the World's Languages

WILLIAM CROFT

University of New Mexico



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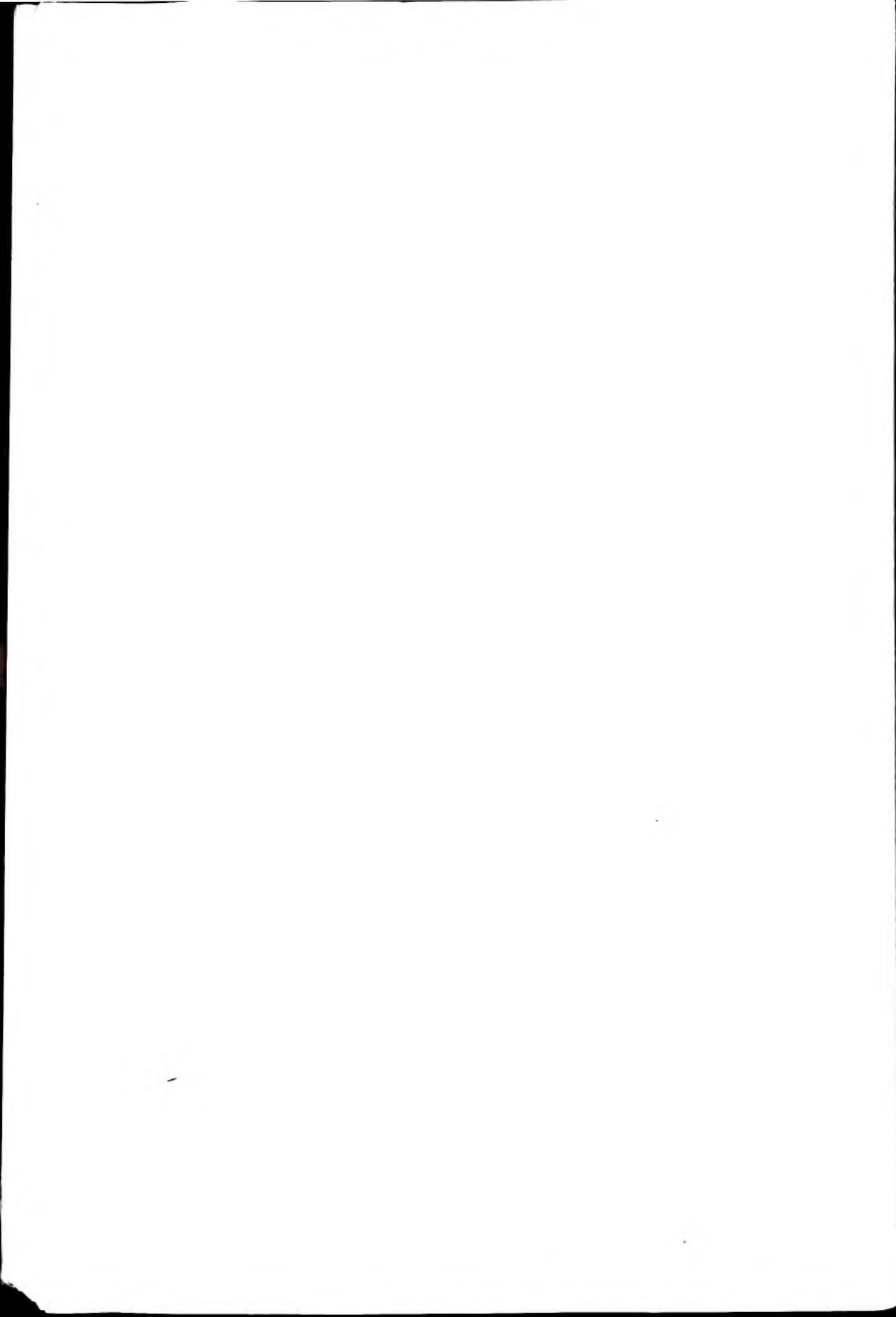
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*To the memory of my mother
Irene Shursky Croft
1926–2012
who was always a teacher*



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Preface

This textbook provides a general survey of the morphosyntactic constructions of the world’s languages. The textbook is directed toward advanced undergraduates and beginning graduate students studying syntax. At the University of New Mexico, I have taught this course in one semester, following on an introductory undergraduate course in syntax where I present the same basic framework but apply it only to English until the second half of that course. However, a more leisurely journey through the material could be done in two semesters, or certain sections could be skipped or assigned as background reading in a one-semester course.

This textbook introduces students to syntactic analysis from a constructional and crosslinguistic perspective. The constructional approach has become more widely used, and it fits well with the crosslinguistic perspective of typology. The typological approach allows this textbook to be relevant to the study of any language. Also, students of a single language such as English, Spanish, Chinese, or another language will best understand the grammatical structure of that language by placing it in the context of the range of grammatical variation of the world’s languages. This is particularly relevant for a student analyzing and describing an undocumented or little-documented language. Fortunately, after sixty years of modern typological research, enough is known about much grammatical structure for an overview textbook such as this one to be possible. By no means does this imply that we know everything about the grammatical constructions of the world’s languages. Nor does this textbook capture everything that we have already learned about grammatical constructions. This would require a much larger, multivolume work.

The morphosyntactic analysis found in this textbook does not involve a notational framework for analyzing the structure of sentences, such as is found in most introductory textbooks of syntactic analysis. This is because many linguists who adhere to functional-typological linguistic theory argue for a “framework-free” grammatical theory (Haspelmath 2010a), and in practice reference grammars do not use notational frameworks in their language descriptions. Instead, this textbook presents a **functional framework**: an overview of the major functions expressed by language, both semantic content and information packaging (see Chapters 1–2). This functional framework may also serve as a framework for the description of the morphosyntax of a language.

The absence of a notational framework does not entail the absence of analysis of morphosyntactic constructions, of course; this textbook contains many such analyses. The nature of such analyses will differ from that of analyses that are intended to represent the structure of a sentence in a particular notational framework. In “framework-free” grammatical theory, the analysis of a sentence in a specific language consists of identifying the construction it is an instance of, in terms of both function and morphosyntactic form, and understanding how the construction fits into the context of crosslinguistic variation and paths of grammatical change, as well as its relation to other constructions in the language.

Of course, not all linguists will agree with all the syntactic analyses presented in this textbook. But the basic crosslinguistic facts and patterns presented here are likely to represent lasting empirical generalizations, and must be explained in some way, no matter what syntactic theory one follows. The content of this textbook should therefore be of value to all students of syntax.

Acknowledgments

The idea for this book began a very long time ago, around 1985, when, as a graduate student, I taught a seminar on functional-typological syntax to my fellow graduate students at Stanford. Other prototypes for the course were a syntax course I taught for a couple of years at the University of Michigan in the late 1980s, and the syntax course I taught at the Summer Institute of the Linguistic Society of America at the University of New Mexico in 1995. But it wasn't until after I began teaching at the University of New Mexico in 2006 that I again had the opportunity to teach the core syntax courses Grammatical Analysis and Morphosyntax, in the Linguistics department. I began to develop the materials for *Morphosyntax* in earnest in 2012.

I taught Morphosyntax several times in the 2010s. For one year, my then doctoral student Logan Sutton taught the course, and at the end of my teaching career, my colleague Rosa Vallejos took over the course. Logan, and especially Rosa, gave me excellent advice on teaching the course. My heartfelt thanks go out especially to the many students at the University of New Mexico who took Morphosyntax over the years, from myself, Logan, or Rosa. All of the students helped me – or forced me – to confront the challenge of teaching complex and wide-ranging material to both undergraduates and graduate students.

Morphosyntax is the final course in a sequence at the University of New Mexico that begins with an introduction to linguistics for undergraduate majors, focused on phonological and morphological problem-solving, and continues with Grammatical Analysis, an undergraduate course in syntax meant as an introduction to the functional-typological approach presented in this textbook. A “grammar team” consisting of Dawn Nordquist, Rosa Vallejos, and I, supported by several students – Chris Peverada, Katherine Looney, Corrine Occhino-Kehoe, and Michael Regan – worked on the three courses and how they would complement each other and build on the preceding courses in the sequence. I learned much from this planning process and from all of the grammar team who worked with me on it.

I received comments on earlier drafts of several chapters of this book from Rosa Vallejos, Martin Haspelmath, Randy LaPolla, and Matthew Dryer. All of them, especially Rosa, immeasurably improved the content and presentation of the book. Bernard Comrie reviewed the entire manuscript and gave me many valuable comments and essential corrections. None of them bears any responsibility for the errors that remain.

The knowledge contained in this book would not exist if it were not for the many, many linguists, fieldworkers, and native speakers who described and analyzed the many languages that informed the typological research described herein – both well-known and endangered. We are all indebted to the native-speaker consultants who shared their knowledge of their languages with us. I hope that the information in this book will make a small contribution to the process of language description. I am grateful to Harald Hammarström for assistance in obtaining copies of some of the language sources cited in this book.

This book builds on the research of many linguists in many different areas, particularly modern syntactic typology, semantics and pragmatics, and construction grammar. Some of them have become dear friends to me, as well as respected scholars in the field. My thanks go especially to Greg Anderson, Joan Bybee, Bernard Comrie, Sonia Cristofaro, Matthew Dryer, Martin Haspelmath, Masha Koptyevskaja-Tamm, Anna Siewierska – tragically lost to us too early – Leon Stassen, and Len Talmy for their long and deep friendships, as well as their important contributions to linguistics.

This book also benefitted from research done by students of mine, adding to the pleasure of my teaching career and my hope for the future: Sonia Cristofaro, Chiaki Taoka, and Ayumi Tsukiashi at the University of Manchester; and You-Min Lin, José Hugo García Macías, Phillip Rogers, Tlor Shenharr, Meagan Vigus, and Tim Zingler at the University of New Mexico.

Finally, there are those who were my teachers. I had many; four stood out in their influence on this book. Jim McCawley at the University of Chicago – also tragically lost to us too early – and Jerry Hobbs at SRI International taught me healthily heterodox approaches to semantics and pragmatics. Elizabeth Traugott taught me the importance of diachronic processes, as well as the interplay of semantics and pragmatics. Last but not least, Joe Greenberg taught me so much about all aspects of language through his publications, his classes, and our many one-on-one meetings in his office while I was working on my dissertation and for many years afterwards, all the way to the end of his life. His intellect and erudition were awesome; he was also humble, generous, and passionately curious and excited about every new discovery he made in a language.

This book would not be possible without all of the aforementioned linguists upon whose work it is built. Nor would it have been possible without the love and support of my wife, Carol Toffaletti, over the decades, through all the joys and sorrows that there have been, and will be.

I dedicate this volume to my mother, Irene Croft, who taught me so many things, from my first words to the latest Balkan folkdance. She was only able to be a teacher for part of her professional career, but it was the part she loved the most. I am grateful to her for everything she gave to me. Her ashes rest with my father's ashes in Big Basin Redwoods State Park in California – joined now by the ashes of the immolated redwood trees that towered over them, giants of a rapidly collapsing natural world that we knew, loved, and defended any way we could.

A Note on Teaching Morphosyntax

This textbook is intended to be an advanced textbook on morphosyntax. It is assumed that a student has been exposed to language-specific grammatical analysis of the sort described at the beginning of section 1.5, which is typical of introductory syntax courses. In such a course, students will have acquired some mastery of the linguistic way of analyzing morphosyntactic structure. They will also have acquired some familiarity with a range of basic constructions, their morphosyntactic form, and also their function, typically in the language of instruction and possibly in other languages.

At the University of New Mexico, an introductory undergraduate syntax course precedes the morphosyntax course for which this textbook was written. Although a “framework-free” grammatical theory is used in this textbook, for practical pedagogical reasons I have developed a syntactic annotation scheme for the introductory syntax course. The annotation scheme is similar in spirit and content to the Universal Dependencies project in natural language processing (Nivre 2015; www.universaldependencies.org; Croft et al. 2017; Croft 2017; de Marneffe et al. 2021). Materials for the introductory course will be published in due course.

When I have taught the advanced morphosyntax course, each student “adopts” a reference grammar of a language and uses it to describe where “their” language fits into the crosslinguistic patterns in the expression of the function of the constructions in the chapters. These descriptive assignments allow a student to see a richer and more detailed example of the type of grammatical phenomena surveyed in the textbook. By using a sample of languages from different genetic families and geographical areas, one can capture a good deal of crosslinguistic diversity in a single class, as well as bringing out constructions that are unusual or anomalous from a typological perspective, or that are not discussed in this book. This teaching method is now more easily done with the online availability of digital versions of many unpublished dissertations and open-source published reference grammars.

It is, in fact, quite a challenge to find information in a reference grammar – whether it is a grammar of a well-documented and widely spoken language or of a small indigenous language – and to place it in the context of crosslinguistic patterns for the constructions in question. Every reference grammar is organized in a different way, and some topics are more thoroughly covered than others

(and some are not covered at all), for various reasons. Moreover, the terminology that is used in grammars, and even the types of analyses of grammatical constructions that are found in the grammar, are highly variable and not infrequently ambiguous or confusing. Some of the reasons for this are discussed in Chapter 1 of this book.

There has been much improvement in language description in the past sixty years, and especially in the last thirty years. However, many languages have gone extinct, others are highly endangered or moribund, and the time and resources available for language documentation are very limited. For this reason, students and scholars interested in understanding a grammatical phenomenon in its cross-linguistic diversity, and uncovering what universal patterns there might be, will always have to interpret incomplete data, collected at different times in the past, that is presented in ways that are not always easy to decipher. Hence, one useful analytical skill in learning morphosyntax in a crosslinguistic perspective is the ability to figure out, as well as possible, what is going on in a language you don't speak, from whatever descriptive materials are available.

A Note on Language Examples

This textbook, like other typologically oriented books, presents example sentences from a large number of languages. Any such survey necessarily draws on a wide variety of sources, since the author does not have direct knowledge of the vast majority of the languages cited in the book. It is therefore quite challenging to verify the accuracy of all of the examples cited.

The solution to this problem is to make it as easy as possible for the reader to verify the examples by checking in the cited sources. In this book, both primary and secondary sources have been used. A ‘primary source’ is a reference grammar or other publication produced by a native speaker or a field linguist with direct knowledge of the language, or in some cases data provided by a native speaker or a field linguist to the author, based on a questionnaire provided by the author. A ‘secondary source’ is a linguistic work, usually a crosslinguistic or typological analysis, that draws on primary sources for some or all of its data.

In this book I have checked the primary sources cited by secondary sources where possible. The manner of citation represents how the example was cited and checked. Page references are cited where available. Let us say Gramm (1995) is a primary source such as a reference grammar, and Topol (2007) is a secondary source such as a typological survey. The following are the types of citations for examples to be found in this book:

Gramm (1995:146) – I consulted the primary source directly.

Gramm (1995:146); cf. Topol (2007:301) – I consulted the secondary source, and was able to check the primary source.

Topol (2007:301), from Gramm (1995:146) – I consulted the secondary source, which cited the primary source, but I was not able to check the primary source.

Topol (2007:301), from Gramm (1995) – I consulted the secondary source, which did not provide a page citation for the primary source, and I was not able to check the source.

Topol (2007:301) – I consulted the secondary source, which may have drawn on direct knowledge, or did not cite a primary source.

As for the examples themselves, non-English examples are generally given in a morphologically segmented form, followed by an interlinear morpheme translation (IMT) and a free translation (see section 1.6). In a few cases, an

unsegmented original text is given on a separate line, particularly when morphophonological changes obscure the morpheme segmentation. However, for reasons of space, an unsegmented original text is not generally given, even when available.

The orthography or transcription of the source is almost always followed, including transliterations from other scripts. This may lead to alternative orthographies or transcriptions for the same language if examples are drawn from different sources. Changes to the transcription, if any, are noted in the citation.

The morpheme segmentations and IMTs also generally follow the sources, which again may lead to discrepancies for examples from the same language but different sources. The annotation of morpheme segmentation is standardized to the Leipzig Glossing Rules (see section 1.6). Abbreviations for common grammatical morphemes are standardized, following either the Leipzig Glossing Rules or the much longer list of abbreviations from the Framework for Descriptive Grammars project (see the List of Abbreviations following this note). Abbreviations for less common or unique grammatical morphemes are retained as long as they are not also used for common grammatical morphemes, and they are explained in the text when the example is introduced. In some cases, the source does not provide a morpheme segmentation and/or IMT, but the secondary source reconstructs them. If this is done, it is noted in the citation.

The specific part of the construction being discussed in the text is generally highlighted in boldface in the IMT.

Please contact me with any corrections to examples.

Abbreviations

The following list represents abbreviations for common grammatical categories that are standardized in the examples in the text. This list is based on the list of abbreviations of the Leipzig Glossing Rules (Balthasar Bickel, Bernard Comrie, Martin Haspelmath; see section 1.6) and the much larger list of abbreviations in *Typology and Universals*, 2nd edition (Croft 2003), which was originally a list developed for the Framework for Descriptive Grammars project (Bernard Comrie, William Croft, Christian Lehmann, and Dietmar Zaefferer) and largely adopted by the EUROTYP project. In some cases, the abbreviations in these two sources differed. The Leipzig Glossing Rules abbreviation was chosen, except for DSTR, INCL, EXCL, and NMLZ (see DSTR, IN, EX, and NR). Three new abbreviations are used: CAU instead of CAUS, ANTP for ANTIP, contrasting with the newly included category ANTC (the latter two from Martin Haspelmath).

Some examples in the text will contain abbreviations for rare or unique grammatical categories; these will be explained in the citation for the example.

1	first person	ADJR	adjectivalizer
12	first person dual inclusive (if treated as a quasi-singular)	ADM	admonitive
2	second person	ADVR	adverb(ial)
3	third person	ADVRS	adversative
A	transitive agent	AFF	affirmative
ABESS	abessive ('without')	AFFCT	affective
ABL	ablative ('from')	AG	agent(ive)
ABS	absolutive case	AGR	agreement
ABSL	absolute form	AL	alienable
ABST	abstract (nominalization)	ALL	allative ('to')
ACC	accusative	ALLOC	allocutive
ACCES	accessory case	AN	animate
ACCID	accidental (action)	ANA	anaphoric
ACT	active	ANT	anterior
ACTR	Actor	ANTC	anticausative
ADESS	adessive ('on')	ANTP	antipassive
ADJ	adjective	AOR	aorist

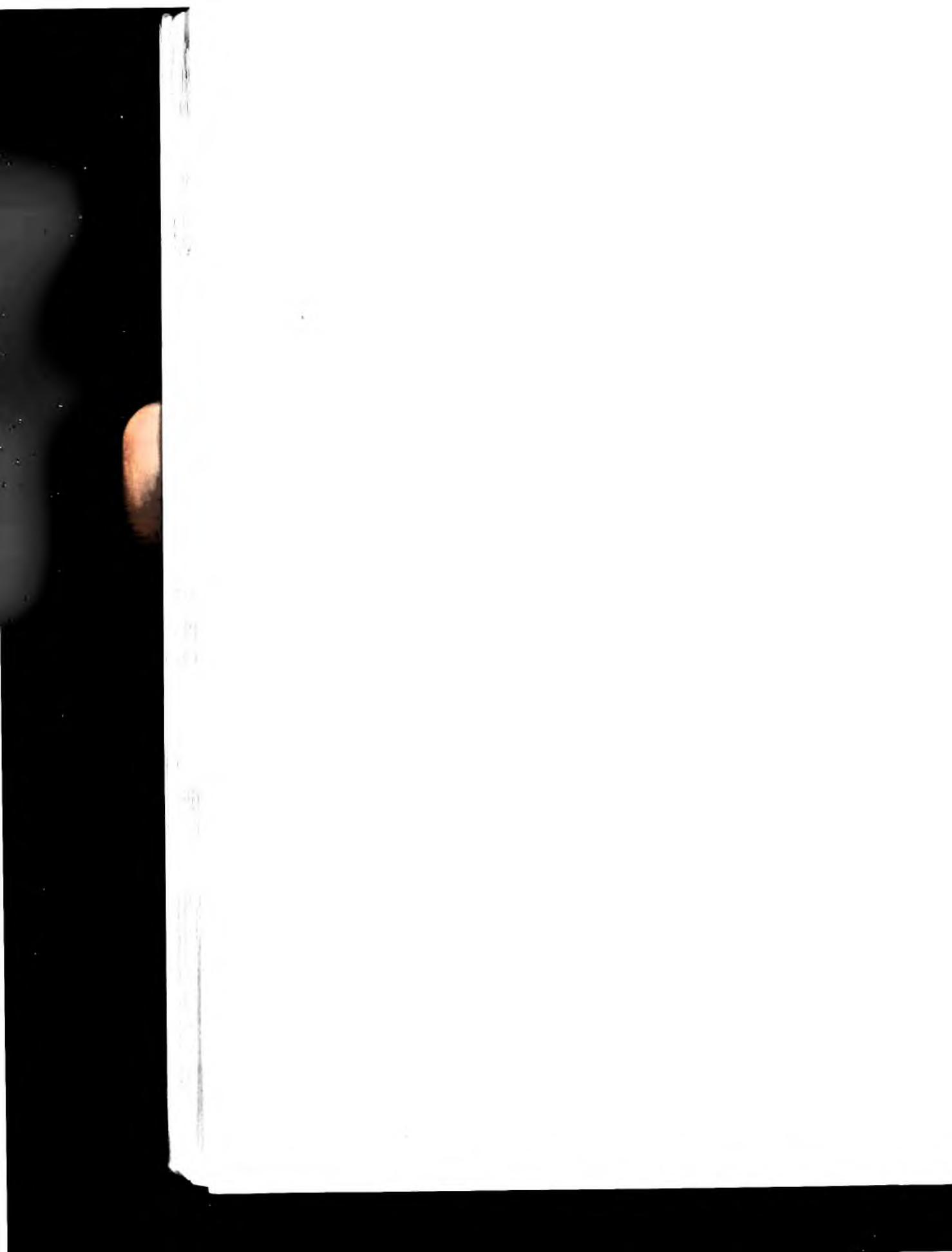
APPL	applicative	DER	derivational morpheme
ART	article	DES	desiderative
ASP	aspect	DET	determiner
ASSOC	associative	DETR	detransitivizer
ASSR	assertive	DIM	diminutive
AT	attributor	DIR	directional
AUG	augmentative	DIST	distal (= 3 person deictic)
AUX	auxiliary	DITR	ditransitive
AVERS	aversive ('lest')	DO	direct object
BEN	benefactive	DS	different subject
BUFF	phonological buffer element	DSTR	distributive
CARD	cardinal (numeral)	DU	dual
CAU	causative	DUB	dubitative
CIRC	circumstantial	DUR	durative
CJPRT	conjunctive participle	DWNT	downtoner ('a little X, somewhat X, X-ish')
CLF	classifier	DYN	dynamic (vs. stative)
CLN	noun class n	EL	elative ('out of')
CMPL	completive	EMPH	emphatic
CMPR	comparative	EQT	equative (adjective)
CNJ	conjunction	ERG	ergative
CO	coordinator	ESS	essive ('as')
COLL	collective	EVID	evidential
COM	comitative	EX	exclusive
COMP	complementizer	EXCL	exclamation
CONC	concessive	EXST	exist(ence), existential
COND	conditional	F	feminine
CONN	connective	FACT	factitive
CONST	construct form	FAM	familiar
CONT	continuous	FIN	finite
CONTR	contrastive	FNL	final position marker
COP	copula	FOC	focus
CORR	correlative	FREQ	frequentative
CUST	customary	FRM	formal
CVB	converb	FUT	future
D1	deictic of 1 person	GEN	genitive
D12	deictic of 12 person	GER	gerund (verbal adverb)
D2	deictic of 2 person	GNR	generic
D3	deictic of 3 person	HAB	habitual
DAT	dative	HEST	hesternal (past, future)
DECL	declarative	HOD	hodiernal (past, future)
DEF	definite	HON	honorific
DEFR	deferential	HORT	hortative
DEM	demonstrative	HUM	human
DEP	dependent (deranked) verb form		

HYP	hypothetical	NARR	narrative (tense)
ILL	illative ('into')	NCLF	numeral classifier
IMM	immediate (past, future)	NEAR	near (past, future)
IMP	imperative	NEC	necessity
IMPR	impersonal	NEG	negative, negation
JN	inclusive	NOM	nominative
INAL	inalienable	NR	nominalizer
INAN	inanimate	OBJ	object
INCH	inchoative	OBL	oblique
INCP	inceptive	OBLG	obligative
IND	indicative	OBV	obviative
INDF	indefinite	OPT	optative
INESS	inessive ('in')	ORD	ordinal (numeral)
INF	infinitive	P	transitive patient
INFR	inferential	PASS	passive
INGR	ingressive	PAU	paucal
INJ	injunctive	PCLF	possessive classifier
INS	instrumental	PEJ	pejorative
INT	interrogative	PFV	perfective
INTR	intransitive	PL	plural
INTS	intensifier	PLT	pluritive
INV	inverse	PLUP	pluperfect
INVS	invisible	PNCT	punctual
IO	indirect object	PO	primary object
IPFV	imperfect(ive)	POL	polite
IRR	irrealis	POSS	possessive
ITER	iterative	POST	postposition
JUSS	jussive	POT	potential
LIG	ligature	PRED	predicative
LNK	linker	PREP	preposition
LOC	locative	PREV	preverb
LOG	logophoric	PRF	perfect
M	masculine	PRN	pronoun
MAL	malefactive	PROG	progressive
MAN	manner	PROH	prohibitive
MDL	modal	PROL	prolative ('along')
MED	medial (verb form)	PROP	proprietary
MEDP	mediopassive	PROX	proximal (= 1 person deictic)
MEDT	mediate (= 2 person deictic)	PRS	present
MID	middle	PRT	preterite
MOD	modifier	PRTT	partitive
N	neuter	PRVT	privative ('without')
N-	non- (e.g. NFIN, NFOC, NFUT, NHUM, NPST, NSG, NSPEC, NTOP, NVOL)	PRXT	proximate (vs. obviative)
		PST	past

PTCL	particle	SGT	singulative
PTCP	participle	SIM	simultaneous
PURP	purpose, purposive	SML	semelfactive
Q	question particle/marker	SO	secondary object
QUAD	quadral	SPEC	specific
QUOT	quotative	SS	same subject
R	ditransitive “recipient”	STAT	stative
RDP	reduplication	SUBR	subordinator
REC	recent (past)	SUP	superlative
RECP	reciprocal	T	ditransitive “theme”
REF	referential	TEMP	temporal
REFL	reflexive	TERM	terminative
REFR	referential (‘about’)	TNS	tense
REL	relative clause marker (other than relative pronoun)	TOP	topic
REM	remote (past, future)	TR	transitive
REMT	remote (distance)	TRL	trial
REP	reportive evidential	TRNS	transitivizer
RES	resultative	TRNSL	translative (‘becoming’)
RL	realis	UNDR	undergoer
RLT	relative (case)	UNSP	unspecified (agent, etc.)
RPRN	relative pronoun	VAL	validator
S	intransitive subject	VERS	version
SBJ	subject	VIS	visible
SBJV	subjunctive	VISL	visual evidential
SENS	sensory evidential	VN	verbal noun
SEQ	sequential, consecutive	VOC	vocative
SG	singular	VOL	volitional
		VR	verbalizer

PART I

Introduction



1 Grammatical Constructions, Semantic Classes, and Information Packaging

1.1 What Is Morphosyntax?

The term **morphosyntax**¹ refers to the combination of morphology and syntax. **Syntax** is the analysis of the internal structure of utterances/sentences – more specifically, how words are put together. **Morphology** is the analysis of the internal structure of words, including prefixes, suffixes, and other internal changes to words that generally have a meaning (elusive as that meaning sometimes is). Therefore, morphosyntax is the analysis of the internal structure of utterances, both above the word level and below it.

Why combine morphology and syntax? Because grammatical **constructions** involve both. Consider the examples of the English Numeral Modification Construction in (1):

- (1) *English Numeral Modification:*
one tree
two tree-s
three tree-s
etc.

The English Numeral Modification Construction involves both syntax – the order of numeral and noun – and morphology – the form of the noun, singular or plural. A description or analysis of the English Numeral Modification Construction must include reference to both: the relative position of numeral and noun, and the inflection of the noun for number. A construction is often represented schematically, in this case as [NUM NOUN-NMB]: the labels NUM, NOUN, and -NMB represent categories of words (*one*, *two*, *three*, etc., for NUM; *tree*, *bush* etc. for NOUN) or bound morphemes (-NMB for the number suffix). NUM, NOUN and -NMB are also described as **roles** in the construction (Croft 2001:11, 24, 175–76, drawing on unpublished work by Paul Kay; also called a ‘function’ or ‘slot’).

¹ Technical terms used in this textbook are introduced in boldface; they are listed by section at the end of each chapter, and defined in the online Glossary.

Of course, some constructions in languages seem to involve “only syntax”: order and grouping of words. Other constructions seem to involve “only morphology”: the inflectional forms of words, for example.

Another reason to combine syntax with morphology is that bound morphemes almost always originate in free words that originally combined with other words into constructions. Those constructions were reduced by the process of **grammaticalization** (see section 2.3). An example of grammaticalization in progress in English can be seen in the contracted forms of auxiliaries and negation: *will not* > *won't*, *I am* > *I'm*, etc. As a result, we will see the same sorts of meanings and semantic combinations in stem+inflection combinations that we also find in multiword constructions. In fact, it is sometimes difficult to draw the line between syntactic constructions and morphological constructions: language change, including grammaticalization, is gradual.

The English Numeral Modification Construction does not consist solely of a morphosyntactic form. The construction also conveys a **meaning** – that is, **semantic content or information content**. The noun denotes a set of individuals of the noun category (a set of trees), and the numeral specifies the cardinality of that set (one, two, three, etc.). In addition, the information is **packaged** so that the construction as a whole denotes the set of the trees, and the specific number of trees is secondary information added about the set. The English Numeral Modification Construction contrasts with a sentence such as *The trees number fifteen*, in which the number of trees functions as the primary information, predicated of the trees. An important hypothesis of this book is that (morpho)syntactic constructions not only communicate meaning (information); they also **package that information** in different ways for the purposes of communication. The modification function illustrated in (1) is an example of information packaging; see sections 1.3 and 1.5.

The focus of this textbook is primarily on **syntax** – that is, **how words are put together into utterances, and what those combinations of words mean**. We will not discuss those aspects of morphology that have to do with the phonological form of morphemes, such as bound vs. free morphemes, morphophonological processes, conjugational or declensional classes, and word formation (for morphology, see Haspelmath and Sims 2010; for word formation, see Štekauer, Valera, and Körtvélyessy 2012). Our focus will be on morphology that serves syntax.

Another reason for the focus on syntax in this textbook is that much of the description of morphological meaning is typically covered in courses on semantics. While a case can be made that linguistics curricula should be organized in terms of a full-year (or longer) sequence that provides a survey of morphology, syntax, and semantics combined, I will proceed on the assumption that most linguistics curricula divide (morpho)syntax from semantics. Nevertheless, there will be a significant amount of discussion of semantic content in this textbook, since semantics plays a major role in shaping morphosyntax.

This textbook proceeds from three basic assumptions about the analysis of morphosyntax. The first is that the proper unit for grammatical analysis is a

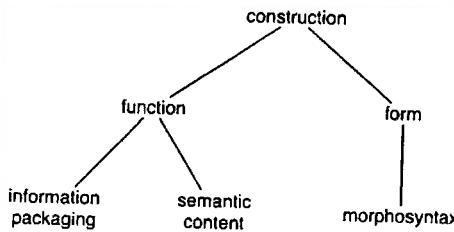


Figure 1.1 *The basic structure of a construction*

(morphosyntactic) construction, such as the numeral modification construction described above. The second assumption is that one must always investigate a construction with respect to how its morphosyntactic **form** expresses its **function**, which in our analysis includes both meaning and information packaging.

These two assumptions are shared by **construction grammar** (Fillmore, Kay, and O'Connor 1988; Goldberg 1995, 2006; Croft 2001), and the second assumption is characteristic of **functionalist** theories of grammatical structure (e.g. Givón 2001a,b). The basic structure of a construction is presented in Figure 1.1. In the contemporary construction grammar approach, constructions include single-word constructions, such as the construction consisting of English noun stems plus their inflection for number in (1). In fact, a construction is any conventionalized pairing of form and function. Reasons for using a constructional approach will be discussed in section 1.2. The basic analysis of the functions of constructions is outlined in section 1.3.

The third assumption is that one must always examine how the morphosyntactic expression of a function varies across languages. The third assumption, combined with the first two, is the hallmark of **linguistic typology**. Linguistic typology is the study of the diversity of languages across the world, and universals that structure that diversity. Linguistic typology has primarily, though not exclusively, examined the diversity of grammatical structures in the world's languages. In fact, much of the content of this book describes the results of more than half a century of research on crosslinguistic variation and universals of grammatical structure.

There are several reasons for taking a typological approach. The study of syntax should, and must, be inclusive – that is, accommodate the diversity of grammatical structures in all languages from all cultures. Perhaps most importantly, we can understand why grammatical structures are the way they are, even in a single language, only by placing them in the context of patterns of global syntactic diversity. Also, even a single language contains variation, and all languages are changing all of the time. The way a language varies and has changed, and will come to vary and change, is an instance of the crosslinguistic variation and change that is described in this textbook. The basis for doing crosslinguistic comparison is discussed in section 1.4, and some basic concepts for crosslinguistic comparison, also known as comparative concepts, are introduced in section 1.5.

The relationship between grammatical – i.e. morphosyntactic – form and the function expressed by that form is a very complex one. There is no simple one-to-one mapping between the function to be expressed and the morphosyntactic structure of an utterance. This poses major challenges in organizing a textbook such as this one. The primary reasons for this complexity are given in sections 2.3–2.4. The motivation for the organization of this textbook will be presented in this chapter and Chapter 2.

1.2 Why Constructions?

In this section, we will discuss some of the reasons for adopting the constructional approach. To do so, however, we must first discuss word classes, and their relationship to semantic classes on the one hand, and constructions on the other (a more detailed discussion can be found in Croft 2001, chs. 1–2).

1.2.1 Word Classes and Semantic Classes

Most descriptions of both familiar European languages and less familiar languages from other parts of the world use **word class** terms, also known as parts of speech or syntactic categories, as a means to capture morphosyntactic patterns: ‘Parts of speech tell us how a word is going to function in the sentence’ (Carnie 2013:44). The major word classes of English and other long-studied languages have been established in the Western grammatical tradition for a long time: noun, verb, adjective, adverb. Many other word classes have also been proposed by linguists, recently and not so recently. However, problems with the use of word classes to capture grammatical patterns arise when facing the grammatical diversity found across the languages of the world.

When one reads grammatical descriptions of lesser-known and previously undocumented languages (and even of better-known languages), one often finds that word class terms are used in confusing and seemingly conflicting ways, as seen in the quotations from reference grammars found in (2a–d):

- (2)
 - a. ‘Sidaama numerals are adjectives’ (Kawachi 2007:135)
 - b. ‘Numerals [in Inupiaq] are a subclass of nouns ... numerals behave like nouns ... Inupiaq numerals are nouns’ (Lanz 2010:106, 107, 108)
 - c. ‘adjectives [in Mamainde] are encoded as verbs’ (Eberhard 2009:324)
 - d. ‘Acehnese has no class of adjectives’ (Durie 1985:101)

These quotations challenge students and scholars who are using reference grammars in order to understand syntax across languages, or to analyze particular constructions. For the most part, these problems are not due to unsatisfactory or inconsistent application of syntactic analysis to these languages by the authors. They are basically due to problems with using word class terms to describe how words are used in grammatical constructions.

Statements of the form ‘Word class X is word class Y,’ such as the statement about Sidaama in (2a) and the last statement about Inupiaq in (2b), appear puzzling at first. What is meant by ‘Word class X is word class Y’? These statements are meant to be interpreted as follows, for example for (2a): Sidaama numerals and Sidaama adjectives function the same way in a sentence. But if they function the same way in a sentence, then what do the terms ‘numeral’ and ‘adjective’ mean in this context? They mean that the Sidaama translation equivalents of English words in the English Numeral class and the Sidaama translation equivalents of English words in the English Adjective class are members of a single word class in Sidaama.

That is, the terms ‘adjective’ and ‘numeral’ in (2a–b) are being used to refer to **semantic classes** of lexical concepts – translation equivalents – in these quotations: numeral concepts and property concepts, respectively. The same is true of ‘noun’ in the second statement about Inupiaq in (2b), where ‘noun’ refers to object concepts (persons and things). It is also true of the statement about ‘adjectives’ in (2c): (2c) means that the Mamaïnde translation equivalents of English Adjectives do not form a distinct word class – specifically, they are not distinct from the word class to which the Mamaïnde translation equivalents of English Verbs belong.

On the other hand, the term ‘adjective’ in (2a), ‘noun’ in the first and third statements in (2b), and ‘verb’ in (2c) are being used to describe a syntactic category (a word class). What is intended can be determined by looking at more careful statements like the second statement in (2b), ‘numerals behave like nouns,’ or the statement in (2c), ‘adjectives are encoded as verbs.’ In these statements, ‘noun’ and ‘verb’ still are being used to express semantic classes of words (object concept words and action concept words, respectively). But these assertions more clearly state that words of two different semantic classes belong to a single word class.

The statement in (2d) is also confusing. The term ‘adjective’ in (2d) is not referring to the semantic class of property concepts. The paraphrase ‘Acehnese has no property concepts’ would be nonsensical; every language has a way to express property concepts. Even so, (2d) is not entirely straightforward to interpret. What (2d) means is that property concept words in Acehnese do not form a distinct word class – not unlike the assertions in (2a–c).

Because ‘noun,’ ‘verb,’ and ‘adjective’ are used to mean different things, there are two terminological problems that give rise to confusion. The first is that the same term is being used for a syntactic category – that is, a class of words defined by their syntactic patterning – and for a semantic category, or, more precisely, a class of words determined by their meaning. In the case of ‘adjective,’ there exists a distinct term for the semantic class, namely ‘property (concept),’ although this term was not used in any of the descriptions in (2). The use of ‘adjective’ in (2a), (2c), and (2d) is, at best, confusing – and a more suitable term is available, namely ‘property concept words.’ For example, (2c) could be rephrased as ‘property concept words are encoded as verbs.’

In the case of ‘numeral,’ we have a different kind of problem. Linguists use the term ‘numeral’ for both semantic class (any translation equivalent for ‘1,’ ‘2,’ ‘3,’ etc.) and a word class (e.g. the English word class which has *one*, *two*, *three*... as members). There is no widely accepted distinct pair of terms for the syntactic category and the semantic category when it comes to ‘numerals.’

Unfortunately, both of these terminological problems are pervasive in linguistic discussions of syntax. The solution to the first problem is simply to be careful and consistent in using semantic terms – ‘property’ – for semantic classes, and grammatical terms – ‘adjective’ – for syntactic categories. We will consistently distinguish terms for semantic categories and terms for grammatical (morphosyntactic) categories in this textbook.

A solution to the second problem commonly found in typological writings is to use the lower-case form of the term for the semantic class – ‘numeral’ – and to use the capitalized form of the same term for a (language-specific) word class – ‘Numeral.’ This convention has been proposed by a number of typologists, including Lazard (1975), Comrie (1976), Bybee (1985), and Croft (2001). We will follow this rule of thumb for naming (language-specific) word classes in this textbook, even when the terms for word class and semantic class are different (for additional rules of thumb for naming language-specific word classes, see Croft 2016a).

1.2.2 Word Classes and Constructions

In the preceding section, I was deliberately vague about what a ‘word class’ or ‘syntactic category’ actually is: it was described as ‘a means to capture morphosyntactic patterns,’ ‘how words are used in grammatical constructions,’ and as ‘defined by their syntactic patterning.’ In this section, I will be more precise about what a word class – or, more generally, a syntactic category – is. We will also discuss two important consequences of the definition.²

In linguistic analysis, word classes are defined not by their semantics but by their **occurrence in constructions** – more precisely, a word’s occurrence in a particular role in a construction. For example, English Adjectives such as *tall* are defined not as words denoting property concepts like height, but instead in terms of their occurrence in certain English constructions:

- (3)
 - a. as modifiers of nouns: *a tall tree*
 - b. as the complement of a copula *be* in predication: *That tree is tall*
 - c. they inflect in a certain way (a morphological construction): *tall-er*, *tall-est*
 - d. they can in turn be modified by certain degree expressions: *very tall*, *a little tall*.

² How word classes are defined, and the consequences of how they are defined, are discussed in detail in Croft (2001, chs. 1–4).

The term ‘word class’ presupposes that the linguistic units defined by occurrence in constructions are always words. This is not the case, however. Any type of syntactic unit can be defined in terms of occurrence in constructions. For example, an English Subject Phrase is defined by occurrence in certain English constructions, for example those in (4a–b):

- (4) a. Occurs in immediate preverbal position in an Active sentence: *John congratulated Mary.*
 b. Controls the form of the Verb or Auxiliary: *You are tall* vs. *She is tall.*

Also, a morphological form smaller than a word, such as a root or a stem, is defined by its occurrence in morphological constructions (sometimes called ‘morphological categories’). For example, (regular) English Verbs are defined by their occurrence in morphological constructions such as Third Person Singular Present [__-s], Past [__-ed], Participle [__-ing], and so on. (More abstract descriptions of the constructions would be necessary to include morphologically irregular English Verbs such as *is/are/was/were/being*.) Thus, the comments in this section about ‘word classes’ are generalizable to syntactic categories that may be larger units than a word or smaller units than a word.

The constructional basis of word classes or syntactic or morphological categories is often obscured by the terms used in syntactic analyses. The construction(s) used to define word classes are called many different things: ‘criteria’ (Givón 2001a:49; Dixon 2010b:38), ‘tests’ (McCawley 1998; Carnie 2013:47, 98–100), ‘evidence,’ ‘phenomena,’ ‘operation,’ and ‘process’ (Mulder 1994:114). The pattern of occurrence of words in certain constructions and not others are said to be the words’ ‘distribution’ (Harris 1951:5; Carnie 2013:47), ‘behavior’ (McCawley 1998:186), ‘properties’ (McCawley 1998:18; Evans and Osada 2005:452; Schachter and Shopen 2007:2), ‘features’ (Amha 2001:89), ‘use’ (Jagersma 2010:268), or ‘function’ (Palmer 2009:94).

There is a major shortcoming in using word classes and other syntactic categories for a crosslinguistic approach to morphosyntax – this is the first consequence of the definition of word classes alluded to at the beginning of this section. The constructions defining a word class of a language are also constructions of that language. English Adjectives are constructions of English, not of Sidaama, Inupiaq, Mamainde, or Acehnese. So English Adjective is an English word class; the other languages have their own word classes, defined by their own constructions. If so, then how can we compare English syntax to the syntax of Sidaama, Inupiaq, Mamainde, or Acehnese?

All hope is not lost. Just as one can compare words that are translation equivalents across languages, one can compare functionally equivalent constructions across languages. For example, for *tall tree*, we could compare the functional equivalents in other languages of the construction illustrated for English in (3a) – namely, the function of modifying a referent. And we can compare word class membership across languages by identifying the semantically equivalent words that occur (or do not occur) in the functionally equivalent

constructions in question – for *a tall tree*, a property word meaning ‘tall’ and an object word meaning ‘tree.’ In this way, one can, for example, compare the constructions used for modification across languages, and observe how property concept words and other semantic classes of words are used in those constructions. This is a fundamental characteristic of a constructional and typological approach to syntactic analysis: using function to identify equivalent constructions and equivalent classes of words across languages. The quotations in (2) show that the mapping between words (translation equivalents) and the constructions (functional equivalents) they occur in varies in complex ways across languages.

There is another wrinkle that has to be addressed before going on, however – this is the second consequence of the definition of word classes (and other syntactic categories). We assumed above that English Adjectives are defined by their occurrence in four constructions – (3a) through (3d) above – not just one. But not all English Adjectives that occur as modifiers – the construction in (3a) – also occur in the other three constructions (and vice versa). Compare *tall* to *alive* in (5), *entire* in (6), *intelligent* in (7), and *even* in (8):

- (5) *Modification of a referent:*
 - a. This insect is **alive**.
 - b. *an **alive** insect
- (6) *Predication with a copula:*
 - a. An **entire** chapter is devoted to this problem.
 - b. *This chapter is **entire**.
- (7) *Degree inflections:*
 - a. tall-er, tall-est
 - b. *intelligent-er, *intelligent-est
- (8) *Degree modifiers:*
 - a. a very tall tree
 - b. *a very **even** number

In other words, the different constructions in (3a–d) do not define a single word class of English Adjectives, as shown in (5)–(8). Instead, each construction defines its own distinct word class. Of course, in this case, the word classes overlap; but they cannot be equated without losing important information about the syntax of English. In other words, the mapping between words and constructions in even a single language varies in complex ways.

Again, all hope is not lost for finding patterns, and even crosslinguistic universals, in this variation. If we recognize that the basic fact is the (complex) mapping between words and their occurrence in constructions – that is, the role a word fills in a construction – then we can look for patterns and explanations for those patterns in **the mapping between words and the relevant roles in the constructions**. For example, a straightforward explanation for the unacceptability of *even* in the degree modifier construction in (8b) is the semantic

incompatibility between the degree of a property that is expressed by the degree modifier construction and the meaning of *even (number)*: a number is either even or odd. Other differences in word-construction mappings may have historical explanations – explanations that may be idiosyncratic to a single language, or represent recurrent processes of change across languages.

Reference grammars do not always give a full description of the complex mapping between words and constructions. Reference grammars often substitute an enumeration of word classes for a full description of the constructions used to define those word classes, the functions of those constructions, and the range of semantic classes of words that occur in those constructions. Even careful typological analyses often use the same term to describe a semantic class of words and a construction used to describe a word class including that semantic class but not identical to it. An example of this problem is illustrated by the first paragraph of a questionnaire used in a crosslinguistic survey of ‘ditransitive constructions’ (see section 7.5), such as *I gave her a book*:

Ditransitive construction is defined semantically as ‘a construction with a recipient (R) and a theme (T) argument,’ where these semantic role labels are understood broadly. Typical ditransitive verbs are ‘give,’ ‘sell,’ ‘show,’ ‘promise,’ ‘teach,’ but languages may treat other verbs in the same way, so that **these verbs would also count as ditransitive for current purposes** (e.g. in English *deny*, *envy* [as in *She denied me a kiss; I envy you your success*]; in German *entziehen* ‘withdraw from’). (Comrie, Haspelmath, and Malchukov 2010:65, emphasis added)

The first part of the paragraph defines ditransitive verbs as a semantic class – namely, verbs describing events with a recipient participant and a theme participant (the theme is what the recipient comes to possess), with an illustrative list. But the second part of the paragraph, emphasized here, switches to a definition of ditransitive verbs as any verb that occurs in the ditransitive construction in a language (i.e. the construction that includes semantically ditransitive verbs), even if they are of a different semantic type – denying, envying, and withdrawing events do not have a recipient.

The critical comments about language description in this and the preceding sections are only about consistency in description, not completeness of description. It is impossible to make a complete description of all of the variation in the mapping between words and constructions in a language, especially if one also takes into account variation between speakers and even across different utterances of the same speaker, and grammatical changes in progress. A grammatical description is an overview of the major patterns in a language. Likewise, this textbook is an even higher-level overview of the major grammatical patterns found across languages. The reader should not assume that what is presented about the constructions described in this textbook automatically extends to other constructions, even closely related constructions; or that the words that occur in the roles of the constructions described here can be assumed to occur in analogous roles, even in related constructions.

We take a thoroughly construction-based approach to syntactic analysis and language description in this textbook. Words occur in certain constructions, and don't occur in other constructions. Words have meanings; grammatical constructions have meanings, or functions, as well. We can compare languages by comparing what happens with the translational equivalents of English words, and by comparing the functional equivalents of English constructions. Semantic and functional translation equivalence allows us to identify general patterns of syntax across languages, and offer explanations for those general patterns. These explanations are primarily functional and diachronic.

1.2.3 **Constructions and the Organization of this Textbook**

The chapters in Parts II through IV of this textbook present syntactic constructions of the world's languages: what their function is, and the range of morphosyntactic structures used to express those functions. The basis for dividing the presentation of constructions into separate chapters, and the order of chapters in this textbook, is primarily in terms of the function of the constructions. Of course, language is a general-purpose communication system: in principle, we can express anything we want in language. We have to use an analysis of functions that allows us to divide and organize all the functions that we can express in language into categories that are useful for syntactic analysis. That is, the categories of functions should not only be conceptually related, but also divide constructions into groups that are related to each other by their morphosyntactic form. In the next section, we argue that the analysis of functions most useful for syntax is in terms of information packaging.

1.3 **Why Information Packaging?**

A central hypothesis of this textbook is that all constructions convey both semantic or **information content** (also called 'meaning') and a packaging of that content (**information packaging**; the latter is also called 'discourse function'). For example, the division of words into those denoting object concepts like 'tree,' property concepts like 'tall,' and action concepts like 'fall' represents a categorization of words by their semantic content. In contrast, in a sentence like *The tall tree fell*, one can categorize the same words as referring (*tree*), modifying (*tall*), and predicating (*fell*). This categorization represents the packaging of that semantic content. In the most general syntactic constructions, the packaging of the semantic content is globally organized around the following skeletal structure:

reference – what the speaker is talking about

predication – what the speaker is asserting about the referents in a particular utterance

modification – additional information provided about the referent

Table 1.1 *Packaging of semantic classes in different propositional act functions*

	reference	modification	predication
object property	<i>the sharp thorns</i> sharpness	<i>the thorn's color</i> <i>the sharp thorns</i>	<i>It is a thorn.</i> <i>Those thorns are sharp.</i>
action	<i>I said [that the thorns scratched me].</i> <i>the [scratching of the thorns]</i>	<i>the thorns [that scratched me]</i> <i>the thorns [scratching me]</i>	<i>The sharp thorns scratched me.</i>

These fundamental information packaging functions are called the (**major**) **propositional act** functions (following Searle 1969 and Croft 1991). These functions are discussed in more detail in section 2.1.

The separation of semantic or information content and information packaging is not generally recognized in the analysis of sentence function. The primary reason to separate meaning and information packaging is that, in principle at least, **any semantic content can be packaged in any information packaging function** (see section 2.3). In *a tall tree*, the property of tallness is being used to modify the referent of *tree*. But in *That tree is tall*, the property of tallness is predicated of the tree.

The semantic classes of objects, properties, and actions can all refer, modify, or predicate (Croft 1991), as can be seen in Table 1.1 for the words in boldface.

The facts presented in Table 1.1 explain why the traditional grammar definitions of 'nouns' as object words, 'adjectives' as property words, and 'verbs' as action words fails. For example, properties and actions can be referred to (*sharpness*, *scratching*). The facts in Table 1.1 also suggest which constructions are relevant for a crosslinguistically useful analysis of parts of speech – namely, constructions used for reference, modification, and predication. Recognizing these two dimensions of linguistic function allows for a crosslinguistically valid approach to the vexing problem of parts of speech.

Nevertheless, it is true that referring expressions are most frequently objects, predicates are most frequently actions, and modifiers are most frequently properties. They are the constructions that occur on the diagonal from upper left to lower right in Table 1.1: *the sharp thorns* (noun), *the sharp thorns* (adjective), *The sharp thorns scratched me* (verb). As the parenthetical terms indicate, these frequent combinations form the basis of a crosslinguistically valid analysis of nouns, verbs, and adjectives. We will develop this analysis in more detail in sections 2.2 and 2.3.

The separation of semantic content and information packaging also allows us to reformulate the problem in the statements in (2a), (2b), and (2d) in section 1.2.1, such as 'Sidaama numerals are adjectives.' Many word class terms, especially those for major parts of speech, are used for either the semantic class or the information packaging function of the construction defining the

word class. Hence ‘Sidaama numerals are adjectives’ really means ‘Sidaama numerals occur in the same modification construction as is used for prototypical modifiers.’ ‘Acehnese has no class of adjectives’ doesn’t mean ‘Acehnese has no property words’ or ‘Acehnese has no modification constructions.’ It means ‘Acehnese does not have a modification construction used specifically for property words.’³

Many traditional uses of terms for word classes and parts of speech are ambiguous between denoting a semantic class and denoting an information packaging function. For example, ‘demonstrative adjective’ means ‘deictic word [“demonstrative”] used as a modifier [“adjective”],’ as in *that book*. In a parallel fashion, ‘demonstrative pronoun’ means ‘deictic word used as a referring expression,’ as in *That is a book*. On the other hand, ‘predicate adjective’ means ‘property word [“adjective”] used as a predication [“predicate”],’ as in *That tree is tall*. In a parallel fashion, ‘attributive adjective’ means ‘property word used as a modifier,’ as in *a tall tree*. So the term ‘adjective’ is used to denote the modification function in ‘demonstrative adjective’ but the property concept class in ‘predicate adjective.’

Another example of use of grammatical terms for either information packaging function or semantic class is in a description of the words *ano* and *wola/wolata* in Sabanê (Nambikwaran; Antunes de Araujo 2004:96; vs = verbal suffix):

The morphemes **ano** and **wola/wolata** are used to express plurality, meaning ‘much/many/a lot’ ... In the sentences (26–31), **ano** is a quantifier, while **wola(ta)** is an adverb ... :

- (27) naysunum-ka ano-it-al-i
 land-OBJ much-vs-PRS.N-ASSR
 ‘There is plenty of land.’

...

- (30) wolata amayl-i-al-i
 a_lot_more to_rain-vs-PRS.N-ASSR
 ‘It is raining very hard.’

The word *ano* is defined by its semantic class (‘quantifier’), but the near-synonym *wola(ta)* is defined by the information packaging function of the construction it occurs in (‘adverb,’ i.e. modifier of a predicate). Thus, a major part of the difficulty in interpreting statements about word classes in reference grammars involves figuring out whether the author is using the term ‘adjective,’ say, to describe a language-specific word class defined by occurrence in one or more constructions of the language; a semantic class (property concepts); or an information packaging function (modification).

³ Actually, for Durie, it also means ‘Acehnese does not have a predication construction used specifically for property words.’ One doesn’t always know which constructions are implicitly referred to by statements such as ‘Acehnese has no adjectives.’

The separation of semantic content and information packaging in describing the function of constructions has a number of theoretical and practical consequences. The information packaging functions are generally much more isomorphic to syntactic structures than lexical semantic classes: object concepts can be predicated, and action concepts can be packaged as referents, patients can be packaged as subjects, etc. The information packaging functions are also less variable across languages – i.e. more universal – than lexical semantics. Although the match is not perfect, **information packaging is the function of the morphosyntactic form of sentences**. For this reason, the organization of the constructions in this textbook is according to their information packaging functions.

The information packaging functions in Table 1.1 provide the basic skeleton for most constructions (see section 1.5). This basic skeleton is described in more detail in Chapter 2. The information packaging functions in Table 1.1 also provide the basic skeleton for this textbook. Part II describes constructions used for reference (Chapter 3) and for modification (Chapters 4–5). These are **phrasal constructions** (**phrases** for short). For example, *the furry kitten* is an instance of a phrase: it refers to a kitten, and modifies that concept with the property of being furry. Part III describes constructions used for predication. These are **clausal constructions** (**clauses** for short). An example of a clausal construction is *The birds were singing*: singing is predicated of the birds. Part IV describes constructions used for multiple predication. These are **complex sentence** constructions, made up of multiple clauses. An example of a complex sentence construction is *[The birds were singing] [when I went out to get the newspaper]*. It consists of two clauses, indicated by the square brackets; the second clause is dependent on the first one and bears a semantic relation of overlapping occurrence in time.

The functions in Table 1.1 are not the only information packaging functions found in grammatical constructions. **All constructions encode both semantic content – information – and the way that information is packaged**. The information packaging functions associated with different types of constructions will be described in the chapters making up Parts II, III, and IV of this textbook.

The organization of this textbook is summarized in Table 1.2. There are construction types and information packaging functions in Table 1.2 that are probably not familiar to you; they will be explained as they are introduced.

There still remains the question of how to organize the chapters themselves. Constructions are a pairing of form and function, and function represents both semantic content and information packaging. But morphosyntactic form varies considerably across languages. What is the best way to compare, and hence organize, that crosslinguistic diversity of constructional form? In the next section, we argue that the comparison involves distinguishing grammatical constructions from grammatical strategies.

Table 1.2 *Information packaging functions and the organization of this textbook*

Part I: Introduction	(overview, framework of analysis)	Chapters 1–2
Part II: Phrases	reference	Chapter 3
	modification	Chapters 4–5
Part III: Clauses	predication (topic–comment)	Chapters 6–9
	predication, thetic, identificational	Chapters 10–11
	speech act functions, modality	Chapter 12
	complex predicates	Chapters 13–14
Part IV: Complex Sentences	coordination, subordination	Chapters 15–17
	events as arguments (complements)	Chapter 18
	events as modifiers (relative clauses)	Chapter 19

1.4 How Do We Compare Constructions within and across Languages?

Semantic content and information packaging allows us to compare constructions within and across languages. For example, we can compare the predication of object concepts in English (9), Spanish (10), and Classical Nahuatl (11a; cf. Nahuatl action predication in 11b; Andrews 1975:148, 25; cf. Stassen 1997:46, glossed by Stassen):

- (9) I am not a **doctor**.
- (10) Yo no soy médico.
I NEG am **doctor**
'I am not a doctor.'
- (11)
 - a. ah-ni-ticitl
NEG-1SG-**doctor**
'I am not a doctor.'
 - b. ah-ni-chōco
NEG-1SG-**cry**
'I am not crying.'

But how do we talk about the constructions of the world's languages? That is, how do we talk about not just the function (semantics and information packaging) of the constructions in (9)–(11), but also the morphosyntactic structures in (9)–(11)? We need **comparative concepts** (Haspelmath 2010b) for object predication constructions, and also action predication constructions, object reference constructions, and any grammatical construction that we want to compare across languages. Moreover, we will also want to compare different constructions with similar functions in a single language, such as the English constructions in (12) used for object modification – that is, the modification of one object concept (*regulations*) by another object concept (*university*):

- (12) a. the regulations of the university
 b. the university's regulations
 c. university regulations

Haspelmath describes comparative concepts as concepts that are not language-specific constructions, nor the language-specific word classes that those constructions define. Instead, they are theoretical concepts used for cross-linguistic comparison. The most important property of comparative concepts is that they are crosslinguistically consistent. That is, their definition is not dependent on language-specific constructions and categories.

— The functions that speakers want to express – that is, semantics or information packaging – can serve as comparative concepts (see section 1.2.2; Croft 2001, ch. 3). But in order to talk about the morphosyntactic form of constructions, we need to define grammatical comparative concepts: comparative concepts that refer to the pairing of form and function, not just function by itself.

Typologists typically use two general types of comparative concepts (Croft 2014, 2016a). The first general type is a **construction**:

construction: any pairing of form and function in a language (or any language) used to express a particular combination of semantic content and information packaging

The term ‘construction’ when unmodified refers to any pairing of morphosyntactic form and function (the latter is a combination of semantic content and information packaging). When ‘construction’ is modified, as in ‘relative clause construction,’ it refers to the category of form–function pairings that express the function described by the modifying phrase, but any form expressing that function in any language.

That is, a construction is a set of morphosyntactic forms that all have in common a particular combination of semantic content, such as object concepts, and information packaging, such as predication. However, a construction does not define any particular form. That is, a construction does not define **how** the function is expressed; a construction just defines **what** function is expressed. For example, if one finds an article titled ‘A typology of relative clause constructions,’ one will expect to find a survey of all the different morphosyntactic ways that languages express a particular function (in this case, action modification; see Chapter 19).

Since every construction expresses a combination of a particular semantic content and a particular information packaging function, an obvious solution to the naming of this comparative concept is to use a compound of the semantic content and the information packaging function, i.e. ‘object predication construction,’ ‘object reference construction,’ ‘action predication construction,’ and so on. In many cases, this will suffice. But, in fact, the traditional grammatical terms for many constructions are used in basically this fashion: a ‘predicate nominal construction’ is a construction used for object predication, and so on. In particular, reference grammars use grammatical construction terms such as ‘predicate nominal,’ ‘relative clause,’ and so on to describe how the relevant combination of

semantic structure and information packaging function is expressed in the language being described. We will respect this usage as much as possible when giving names for constructions as grammatical comparative concepts.

For example, we will use the term **predicate nominal construction** to describe a grammatical construction used to express object predication in a language. A predicate nominal construction is a pairing of grammatical form with a function. The function taken by itself is called ‘object predication.’ But for a language-specific construction to be categorized as a predicate nominal construction, all that matters is the function it is used to express. Since ‘predicate nominal construction’ is a crosslinguistic comparative concept, not a language-specific concept, it is not capitalized.

Constructions as comparative concepts come in different degrees of generality. A predicate nominal construction is defined in terms of the function of predicing an object concept. One can also define a predication construction, which is defined in terms of the function of predicing any type of concept: object concepts, property concepts, action concepts, etc.

Much discussion of constructions, outside of typology as well as in typology, pertains to language-specific form–function pairings, such as the English Numeral Modification Construction. In order to distinguish these language-specific form–function pairings from the functionally defined constructions that serve as comparative concepts, we will capitalize the term ‘Construction’ when it is part of the name of a language-specific construction, e.g. the English Predicate Nominal Construction. We will return to the relationship between language-specific and crosslinguistic form–meaning pairings in section 1.5.

The range of constructions found in the world’s languages represents the range of meanings that are communicated in linguistic utterances. Human languages are general-purpose communication systems and thus are used to express everything from fundamental experiences common to all human beings to highly specialized knowledge found only in a single culture, or, even more narrowly, in a subcommunity in a culture with a particular expertise. No single grammar textbook or reference grammar of a language can possibly capture this full range of human experience, even for one speech community. Nevertheless, focusing on the morphosyntax (rather than the lexicon) does delimit a more manageable subset of the grammatical structure of a language – namely, how the meanings found in individual words and morphemes are combined and packaged. Traditions of grammatical analysis in major literary languages and in linguistics, and of grammatical description of languages around the world, allow us to devise a framework encompassing the broad range of information packaging functions that grammatical constructions perform.

The introduction of grammatical constructions as comparative concepts is not enough, however. We also want to be able to compare constructions in terms of their form as well as their function. For example, English *I am not a doctor* and the Spanish translation equivalent *Yo no soy médico* are structurally similar in that they both contain an inflecting form (English *am*, Spanish *soy*) distinct from

the object concept word (English *doctor*, Spanish *médico*). English and Spanish differ from the Classical Nahuatl translation equivalent *ah-ni-tīcītl*, in which the object concept word (*tīcītl*) itself is the inflecting form. In other words, calling *I am not a doctor* and *Yo no soy médico* instances of the predicate nominal construction tells us **what** the English and Spanish speaker are trying to say – that is, the semantic content and how they package that content. But this means that the definition of a construction does not tell us **how** the English and Spanish speakers express the function, let alone the similarities in how they express it.

Thus, we also need grammatical comparative concepts that describe not just **what** a speaker intends to convey – that is, the function – but also **how** they convey it – that is, also the grammatical form. To describe the ‘**how**’ as well as the ‘**what**,’ we introduce the notion of a **strategy**.⁴

strategy: a construction in a language (or any language), used to express a particular combination of semantic content and information packaging (the ‘**what**’), that is further distinguished by certain characteristics of grammatical form that can be defined in a crosslinguistically consistent fashion (the ‘**how**’).

For example, we will say that both English and Spanish employ a **verbal copula** strategy for their predicate nominal constructions (see section 10.1.2 for details).

The verbal copula strategy has certain characteristics of grammatical form that can be defined independently of language-specific word classes or constructions. Those characteristics are the ones described above: (i) the predication function is expressed in part by the presence of a morpheme different from the object concept word; and (ii) this additional word is inflected for at least some of the categories that the construction for the predication of actions (i.e. verbs) also inflects for.

A single language may have multiple constructions using different strategies for a single construction, as we saw in (12a–c) for object modification (broadly construed; see section 4.1.4) in English. Thus, these grammatical comparative concepts are for comparing different morphosyntactic types of constructions, whether in different languages or in the same language. A single language may even have multiple constructions using the same strategy. For example, Spanish has two verbal copula strategies, one using *ser* and one using *estar*. (They differ semantically, but also overlap in some contexts.) These two Spanish verbal copula strategies will have to be differentiated by language-specific construction names, such as the *Ser* Copula Construction and the *Estar* Copula Construction.

Strategies come in different kinds. One type of strategy is defined like the verbal copula strategy, using properties of grammatical structure that are **cross-linguistically valid** – that is, defined independently of language-specific word classes or constructions. For example, a copula can be defined crosslinguistically as a separate morpheme that encodes the predication function. These types

⁴ The term ‘**strategy**’ is one long used with this meaning in typology (at least as far back as Keenan and Comrie 1977 and Givón 1979).

of strategies we will call **encoding strategies**: they represent different morphosyntactic means for expressing the same function in different languages, or alternative means for expressing the same function in a single language.

Another type of strategy is defined in terms of two or possibly more constructions with closely related functions. In this case, the strategy is defined in terms of similarities and differences in morphosyntactic form (again, defined in a crosslinguistically valid fashion) between the two constructions. The morphosyntactic similarities and differences between the strategies found in two (or more) functionally closely related constructions form a **system** of strategies for the contrasting functions of the constructions.

For example, what are called alignment strategies (see section 6.3.1) are defined in terms of the similarities and differences in the forms of intransitive and transitive constructions. For example, consider the transitive and intransitive constructions of Yuwaalaraay, illustrated in (13)–(14) (Williams 1980:36):

- (13) *duyu-gu nama dayn-Ø yi:-y*
 snake-ERG that man-ABS bite-NFUT
 'The snake [ergative] bit the man [absolutive].'
- (14) *wa:l nama yinar-Ø banaga-ŋi*
 NEG that woman-ABS run-NFUT
 'The woman [absolutive] didn't run.'

In the Yuwaalaraay intransitive, the form of the lone argument phrase of an intransitive predicate – 'woman' in (14) – is the same as the form of the argument phrase expressing the patient-like participant of the event denoted by a transitive predicate – 'man' in (13). This **co-expression (str)** (see Hartmann, Haspelmath, and Cysouw 2014:476, n. 5) of arguments is called the absolute. In contrast, the argument phrase expressing the agent-like participant of the same event – 'snake' in (13) – is expressed with a different form from that of the lone argument phrase of the intransitive predicate, namely the suffix *-gu*. This distinct expression, or lack of co-expression, is called the ergative.

This second type of strategy describes similarities and differences in morphosyntactic form that apply across two (or more) constructions – in this case, the intransitive and transitive constructions. Whenever a strategy is defined in synchronic comparison to another strategy, then a system of strategies is being described.

A third type of strategy is defined in terms of using another construction in the language to express the function in question. For example, the presentation of a possession relation in Russian is expressed using a locative construction – that is, a construction also used for the presentation of an object at a location (see section 10.4):

- (15) *u menja mašina*
 at 1SG.GEN car:NOM
 'I have a car.' [lit. 'At me (is) a car']

We will call these **recruitment strategies**: the construction used for one function – representative locative – is recruited for use in a different function – representative possession. Another way of describing a recruitment strategy is that the construction being recruited for the new function is being ‘extended’ to the new function.

Recruitment strategies are very common, since recruitment of an existing construction reduces the number of different strategies needed for the vast range of meanings one wants to express. Recruitment strategies represent a fundamentally diachronic relationship between two constructions: the recruitment event actually occurred in the past.

A strategy that is recruited from one function will adapt to its new function. For example, the predication of physiological sensation is recruited from the possessive construction in some languages. In French, *J'ai faim*, literally ‘I have hunger,’ means ‘I am hungry.’ One can modify *faim* with the degree intensifier *très* ‘very’: *J'ai très faim* ‘I am very hungry.’ One cannot use a degree intensifier with ordinary possession: ‘I have very a car’ makes no sense (Croft 2001:115). This is the first step in divergence of a recruited strategy from its source construction. As the recruited construction’s form comes to be altered, it diverges so much from its source construction that it evolves into an encoding strategy unique to that construction.

There is a sense in which all strategies are probably ultimately recruitment strategies diachronically. Much of the diversity of grammatical strategies, particularly the less common or more unusual strategies, exists because grammatical change is gradual, and “hybrid” strategies appear as one strategy gradually evolves into another. Systems of strategies have a more complex history, involving divergence or convergence of constructions that come to be used for closely related functions. For these reasons, it is sometimes difficult to differentiate strategies that are historically related. We will discuss diachronic processes that lead to linguistic diversity in constructions in many places in this textbook.

Finally, strategies come in varying degrees of generality. The inflected copula strategy for the predicate nominal constructions in English and Spanish was described above specifically for the function of object predication. However, the verbal copula strategy is also used in both languages for predicate adjective constructions (to express property predication): *Ella es inteligente* ‘She is intelligent.’ Should we define strategies independent of constructions – that is, independent of the function that the construction expresses?

We do not do so here: **strategies are always strategies for a particular construction** – the ‘how’ for a particular ‘what.’ Nevertheless, we can say that a strategy is used for a more general construction. For example, we can define the verbal copula strategy as a strategy for the more general predication construction: a construction used to predicate any kind of semantic content, whether it is object predication or property predication or predication of some other concept. We can also define strategies for even more general constructions (see,

in particular, sections 2.4–2.5, 4.2–4.5, 6.2.2, and 15.2.3). The recognition of strategies for highly general constructions represents some of the insights of grammatical theory as to how human beings verbalize their experiences in linguistic form.

Studying the strategies used for constructions is the heart of grammatical analysis. The range of strategies found in the world's languages represents the variation in grammatical structure that may occur. It also implies constraints – or at least dispreferences – in how function is encoded in grammatical form that constitute generalizations or universals about human language, and it reveals the rich network of relationships among constructions in a language (and in language in general). This textbook will survey the major strategies for a wide range of constructions that have been found in crosslinguistic research. It is not intended to be exhaustive: languages are often surprisingly diverse, and unusual strategies are sometimes employed for certain constructions.

In sum, we have two categories of grammatical comparative concepts: constructions and strategies. The grammatical comparative concepts allow us to talk about grammatical constructions (form as well as function) across languages, even though particular grammatical constructions are language-specific. Since they are comparative concepts, they are in lower case, unlike language-specific construction names, which are capitalized just like language-specific word classes. Constructions are defined solely by the combination of meaning and information packaging they express, while strategies are defined in addition by certain crosslinguistically definable formal characteristics they have in common.

1.5 How Do We Analyze the Structure of Sentences in a Particular Language?

In section 1.1, we characterized our method of analyzing morphosyntax as constructional and functional-typological, and, in the following sections, we described in more detail the structure of constructions, and how to compare constructions crosslinguistically. We now return to what this means for the analysis of the structure of sentences in particular languages.

The first step in any linguistic analysis is classification of the phenomena in question – in our case, sentences – by certain parameters – in our case, the function and form of the sentence.⁵ Ideally, analysis proceeds by inductive generalization over a corpus of utterances, although further sentences may be obtained by elicitation to clarify points of analysis. In constructional analysis, the first step is to classify sentences as instances of a construction – that is, a pairing of

⁵ For a more detailed discussion of grammatical analysis and explanation as presented in this section, see Greenberg (1968:ch. 10) and Croft (2003:284–86; Croft 1990a:246–59 has a more detailed discussion).

form and function. In other words, we begin holistically, by categorizing complex structures as a whole.

Sentences can be classified by function and by form. We use the example of the object predication function that we introduced in section 1.4. We can classify the English sentences in (16a–c) as instances of the object predication function:

- (16) a. She is a doctor.
 b. Bill is a teacher.
 c. That flower is a penstemon.
 etc.

The sentences in (16a–c) are also similar in morphosyntactic form. That is, each of (16a–c) can be analyzed into parts that correspond both in form and in function: *She*, *Bill*, and *That flower* correspond to the referent of which the object category is being predicated; *a doctor*, *a teacher*, and *a penstemon* correspond to the object category that is predicated; and *is*, or more generally a form of *be*, recurs across all the sentences.

The classification process involves choices about how narrowly to define the combination of function and form that describes the construction category. Consider the functions expressed by the sentences in (17):

- (17) a. She rode her bicycle across campus.
 b. That slope is very steep.
 c. She became a doctor.
 d. The mayor of San Agustín is my aunt.
 e. You are more of a dancer than she is.

The function of action predication in (17a) could be included to form a more general construction of predication of any type. If so, the number of shared functional and formal properties of this more general construction will be reduced in comparison to the narrower type illustrated in (16a–c). The function of property predication in (17b) could be grouped with object predication, especially as property predication shares a formal element, namely a form of *be*. Example (17c) has a different meaning, of process rather than state, as well as replacing *be* by *become*. Example (17d) is not strictly predicational but equational (see section 10.1.2 for the distinction), although it shares the formal element *be*. Example (17e) adds a different semantic dimension, of comparison, as well as a more complex form.

Constructions can be defined at different levels of generality, as long as there are shared similarities of function and/or similarity of form. One could broaden the definition of the construction one wants to analyze to include these additional examples, on the assumption that there is some degree of similarity of function and form between all the members of the broader construction category. There will be also cross-cutting patterns of similarity, which can be captured by a hierarchy or a lattice of constructions, or a constructional paradigm. Here we stick with the narrow definition of the English Predicate Nominal Construction that excludes sentences like (17a–e).

The next step of analysis is what makes the approach here typological, and represents the focus of this textbook, which is intended for an audience that is already familiar with the sort of single-language analysis described in the preceding paragraphs. We now compare the English construction illustrated in (16a–c) to parallel constructions in other languages. At this point, the process of classifying constructions is based on properties of function and form that are shared across languages, and not specific to English. The process of analysis is still one of classification. In (16)–(17), we grouped certain English sentences together as instances of an English Predicate Nominal Construction, and excluded others. Now we group the English sentences in (16a–c) with sentences in other languages, such as (18) from French and (19) from Kiowa (Watkins 1984:227; cf. Stassen 1997:94, which corrects the gloss):

- (18) Elle est médecin
 she **is** doctor
 'She is a doctor.'
- (19) té: kóygú bà-dó:
 all Kiowa.INV 2PL-**be**
 'You are all Kiowas.'

The sentences in (18) and (19) correspond to the English sentences in (16a–c) in function – object predication – and in form. All the sentences contain a form denoting a referent, a form denoting the predicated object category, and a form inflected with the same categories that action predictions ("verbs"; see section 2.5) inflect for in the language. This crosslinguistic category corresponds to a construction strategy – namely, the verbal copula strategy, introduced in section 1.4 and described in more detail in Chapter 10.

A further step is to compare other sentences in still other languages that express the same function but with different formal structures. This is a still broader classification process. Now we classify sentences such as the English sentences in (16a–c) and the French and Kiowa sentences in (18)–(19) with other sentences in other languages that use different formal structures, such as the zero strategy in (20) from Burmese (Okell 1969:177; cf. Stassen 1997:70) and the verbal strategy in (21) from Classical Nahuatl (Andrews 1975:146; gloss added):

- (20) thu si?thà
 he soldier
 'He is a soldier.'
- (21) ni-ciuhātl
 1sg-woman
 'I am a woman.'

This more general category is also a crosslinguistic category, the predicate nominal construction (all lower case, because it is a crosslinguistic category).

This way of analyzing the English Predicate Nominal Construction typologically is illustrated in Figure 1.2.

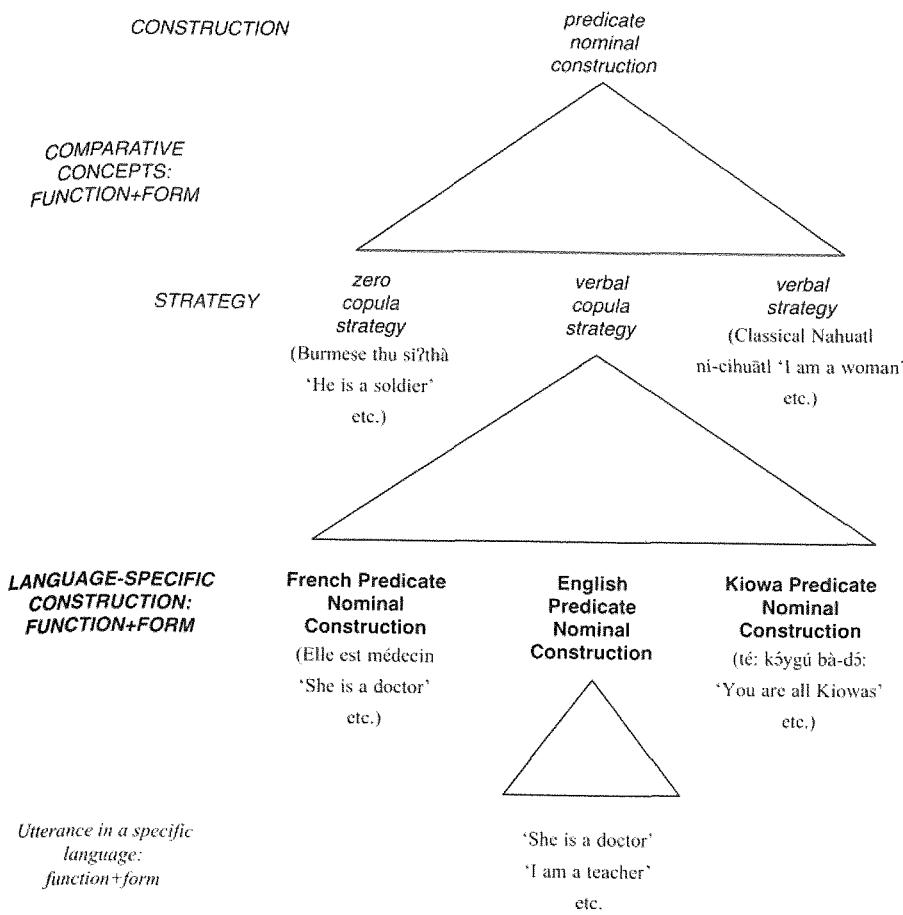


Figure 1.2 *Analysis of English She is a doctor via constructional classification*

All of the categories in Figure 1.2 are instances of constructions – that is, form–function pairings. Only constructions (lower case and specified by function) and strategies are crosslinguistically defined form–meaning pairings. The English, French, and Kiowa Predicate Nominal Constructions are form–meaning pairings defined language-specifically, i.e. by their language-specific function and form. Language-specific form–meaning pairings such as the English Predicate Nominal Construction (specified by language name and capitalized) and (crosslinguistic) strategies are defined by form as well as function. Only (cross-linguistic) constructions are defined by function alone.

The analysis of the English Predicate Nominal Construction in Figure 1.2 describes the construction as a whole and its function as a whole. However, we already saw that in order to reach this analysis, the parts of the sentences that belong to the construction were classified in terms of both function and form.

Any predication construction predicates something of a referent. In *She is a doctor*, the referent is expressed by *She* and the predicated concept is expressed by *a*

Table 1.3 *Analysis of She is a doctor as an instance of the English Predicate Nominal Construction*

Sentence	<i>She</i>	<i>is</i>	<i>a doctor</i>		
Construction	English Predicate Nominal Construction				
Roles	PrNomSbj	<i>be</i>	PrNomPred		
semantics	object		object		
information packaging	reference	predication			
construction	predicate nominal (object predication)				
strategy	verbal copula				

doctor. In addition, the English Predicate Nominal Construction contains another word, namely *is*. This additional word identifies the English Predicate Nominal Construction as an instance of one particular strategy of the predicate nominal construction, the verbal copula strategy. This strategy entails that the construction contains a verbal copula, as defined in section 1.4: a word distinct from the predicated concept word, but bearing inflections also found in action predication.

A visual representation of the analysis of the sentence *She is a doctor*, an instance of the English Predicate Nominal Construction, and its parts is given in Table 1.3.

The first row is the specific sentence being analyzed, *She is a doctor*, with its breakdown into parts. The second and third rows, the rows in white, classify the sentence as an instance of a language-specific construction, the English Predicate Nominal Construction, and give the roles in that construction filled by each part of the sentence *She is a doctor*. The labels 'PrNomSbj' (for 'Predicate Nominal Subject') and 'PrNomPred' ('Predicate Nominal Predicate') indicate that these English syntactic categories are defined specifically by the roles in the English Predicate Nominal Construction (see section 1.2). The form *be* is intended to subsume all forms of this English Verb that occur in that role in the English Predicate Nominal Construction.

The rows in light gray represent the function of the construction – that is, the combination of semantics (fourth row) and information packaging (fifth row) that the construction expresses. These two dimensions of function are both language-specific and crosslinguistic. They are language-specific in that this is the function expressed by English speakers when they use the English Predicate Nominal Construction. They are crosslinguistic in that the function of the English Predicate Nominal Construction also serves as a functional comparative concept (see section 1.4).

Finally, the rows in dark gray represent the analysis of *She is a doctor* in crosslinguistic perspective, as hybrid (form + function) comparative concepts. That is, they represent the English Predicate Nominal Construction as an instance of the crosslinguistic predicate nominal (= object predication) construction (sixth row), specifically the predicate nominal construction using the

verbal copula strategy (seventh row). The crosslinguistic analysis is what is displayed in Figure 1.2.

Parts of a construction are themselves constructions. For example, *she* is an instance of the English Personal Pronoun construction, a particular type of referring expression construction (see Chapter 3). And *is a doctor* is an instance of the English Support Verb Construction, where an inflecting form (*be*) combines with or “supports” a word or phrase (in this case, the phrase *a doctor*) expressing a predicated concept (see section 13.5). In other words, a sentence may be the instance of different constructions, capturing different dimensions of the morphosyntactic structure of the sentence and of parts of the sentence.

What is the role, if any, of the comparative concepts in dark gray in Table 1.3 in a single-language morphosyntactic analysis? This is what this book is basically all about. We will give a simple example here. The syntax of a single language is complex and varied. For example, English uses two different predication constructions, the verbal copula for object and property predication, and inflection without a copula for action predication:

- (22) a. She **is** a doctor.
- b. She **is** intelligent.
- c. She sing-s.

The single-language description of English can answer the **what** question – namely, what function is being expressed here; and the **how** question – namely, what morphosyntax is used to express the function. But we also want to know the answer to the **why** question. Why is there a copula form for object and property predication, but not for action predication? Languages are also not fixed: speakers vary in how they express functions, and they also change over time how they express functions. For example, Cantonese uses a copula *hái* for object predication only; but it is now coming to use the word *hóu* as a copula for property predication (Matthews and Yip 1994:158; see section 10.3, n. 2). Why is Cantonese developing a copula for property predication, but not (yet) for action predication?

The reason is that the patterns of variation and change found in the grammar of a particular language are in many cases simply instances of patterns of variation and change found across languages (Croft 2001:105–7; Croft 2016b). In order to explain the structure, variation, and change occurring in a single language, it is easiest (and empirically safest) to look at variation and change across languages, and see what universal patterns and explanations for those patterns there are. This is a major purpose of this textbook: not just to present the major functions expressed in languages, and the commonest strategies to express those functions, but to answer (where possible) **why** languages have come to be the way they are.

The reader will no doubt have realized that a thorough analysis of a language-specific construction, both the whole and its parts, in terms of both form and function will lead to a plethora of technical terms. Specifically, there will need to be terms for the semantic content; the information packaging; the construction; and the strategy used for the construction. These four analytical categories correspond to the four rows in light and dark gray in Table 1.3.

As much as possible in this textbook, theoretical terms already in use will be employed, and as closely to traditional use as possible. However, traditional use of such terms may sometimes be ambiguous, for example between semantic and constructional definitions, information packaging vs. constructional definitions, and construction vs. strategy definitions. For this reason, the reader must become familiar with the precise use of the terms in this textbook; major differences from traditional use will be indicated when the term is introduced. In order to focus on the accurate use of terms, when each term is introduced, it will be emphasized in boldface. The term will be identified as semantic (*sem*), information packaging (*inf*), construction (*cxn*), or strategy (*str*), or simply as a general theoretical concept. At the end of each chapter, there will be a summary of the terms and concepts introduced in the chapter, classified by type and listed by the sections in which they were introduced. Finally, there is an online alphabetical glossary of all of the terms in the book, classified by type, with examples in English or other languages.

1.6 Appendix – Interpreting Language Examples: Interlinear Morpheme Translations

Since this textbook describes crosslinguistic variation in how semantic content and information packaging are encoded in morphosyntactic form, one must be able to interpret example sentences from other languages, including languages that one is otherwise unfamiliar with. The now widely used method to make the interpretation process easier is the **interlinear morpheme translation**, or **IMT** (also called a **gloss**). An IMT can be illustrated by example (23) from Amharic (see section 2.4):

(23)	yä-pitär	yäfəqr-u-n	zäfän	azzäfafän	← object language
	GEN-Peter	love-DEF-ACC	song	sing;NR	← IMT
	'Peter's singing [i.e. his way of singing] the love song'				← (free) translation

The first line gives the sentence or phrase in the original language, usually called the **object language**, in a morphological analysis. If the morpheme boundaries are obscured by morphophonological processes, the author sometimes gives two lines for the object language: the first line is the sentence as spoken, and the second line is a morphological analysis of the sentence before the application of the morphophonological rules.

There is substantial variation in the notation of different kinds of morpheme boundaries in language descriptions. However, an emerging standard is given by the Leipzig Glossing Rules (www.eva.mpg.de/lingua/resources/glossing-rules.php). The Leipzig Glossing Rules should be studied carefully; only the briefest summary of the rules is given here (relevant rules are cited in parentheses). The following list gives a summary of the morpheme boundary notation found in the object language line:

- = links a clitic (enclitic or proclitic) to the word to which it is cliticized (Rule 2)
- links an affix (suffix or prefix) to the stem to which it is affixed (Rule 2)
- <> encases an infix inside a word or stem (Rule 9)
- ~ links the reduplicated part of a word or stem to the word/stem (Rule 10)
- <>~ links an infixed reduplication to the word/stem (not in the Leipzig Glossing Rules)

The second line is the IMT. The IMT gives a schematic description of the morphosyntactic structure of the example in the object language. Each part gives the translation of the morphemes in the object language line. The commonest convention is to translate word bases in lower case, and to translate grammatical morphemes in small capitals or all capitals. Abbreviations are generally used for grammatical morphemes (Rule 3). Abbreviations used in IMTs in this book are given in the List of Abbreviations.

The same morpheme boundary notation is used in the IMT, except that the translation of an infix is moved to just before the base. However, in many cases there is not a one-to-one mapping between the object language morphemes and the IMT elements. In some cases, the grammatical meaning is zero coded (see section 2.4). Zero coding is annotated either by Ø in the object language line, or by putting the category in square brackets [] in the IMT line (Rule 6). In other cases, the grammatical meaning is expressed by two discontinuous morphemes in the object language (bipartite elements and circumfixes). This may be represented by repeating the gloss for the meaning in the IMT line (Rule 8).

In still other cases, grammatical categories are expressed by nonconcatenative morphology in the object language, such as transfixes, suppletion, subtraction and other types of base modification (for an introduction to morphology, see Haspelmath and Sims 2010). The IMT also notates **cumulation** (Haspelmath and Sims 2010:98) – that is, the expression of more than one grammatical category by a single morpheme in the object language (e.g. English -s in *She sing-s* cumulates third person, singular number, and present tense in a single morpheme); and **false cumulation** – that is, the translation of an object language morpheme by more than one English word because English lacks a one-word translation (e.g. Spanish *buscar* and its English translation ‘look for’).

The best practice for notating these mismatches in form and meaning in the Leipzig Glossing Rules are given below:

- \ morphophonological modification of the base (Rule 4D)
- cumulation (Rule 4); conventionally, a period is not used between person and number (e.g. 1PL) (Rule 5)
- > portmanteau morpheme expressing one person acting on another (e.g. 1PL>3SG); this is a special case of cumulation (Rule 4E)
- false cumulation (e.g. look_for) (Rule 4A)

In actual practice, the period is often used for all of these form–meaning mismatches (Rule 4). In addition, when there are two morphemes in the object

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- false cumulation (e.g. look_for) (Rule 4A)

In actual practice, the period is often used for all of these form–meaning mismatches (Rule 4). In addition, when there are two morphemes in the object

language but the author does not want to show the formal segmentation, a colon can be used, as in *azzäzafän* [sing:NML] in (23) (Rule 4C). Nevertheless, it is valuable to distinguish the different types of form–meaning mismatches, so best practice is encouraged here.

The last line gives the “free” translation of the object language example. This translation essentially gives you the meaning of the example, ideally both the semantic content and the information packaging. In effect, the language of the translation – in this book, English – acts as the **metalanguage** to represent the meaning of the object language examples.

English (or other languages used in language descriptions written in French, Spanish, Russian, Japanese, etc.) is not always the best metalanguage for describing the object language function. English, and the other languages used in translations, do not always make lexical or grammatical semantic distinctions that are found in the object language, and the metalanguage’s way of representing the information packaging in the object language is not always clear, or not carefully replicated by the author. A language description should provide careful translations of object language examples, based on an understanding of semantics and information packaging in the metalanguage used as well as in the object language. This is not always the case. Nevertheless, translations are the only thing we can go on unless the author provides a discussion of the meaning of the example, or we have access to native speaker consultants. For this reason, translations must be used with reasonable caution when analyzing an unfamiliar language.

In sum, the three lines in an example like (23) give the grammatical structure of the object language sentence (the object language line), the semantic analysis of the parts of the object language sentence (the interlinear morpheme translation / IMT), and the semantic structure, including information packaging, of the whole sentence (the free translation).

Terms Defined in this Chapter

1.1 What Is Morphosyntax?

morphosyntax, morphology, syntax, construction (*see also section 1.4*), role, grammaticalization, meaning (semantic/information content), information packaging, form (*a.k.a.* expression), function, construction grammar, functionalism, linguistic typology

1.2 Why Constructions?

1.2.1 Word Classes and Semantic Classes

word class, semantic class

1.2.2 Word Classes and Constructions

1.2.3 Constructions and the Organization of this Textbook

1.3 Why Information Packaging?

reference/referent (*inf*), predication (*inf*), modification (*inf*), propositional act (*inf*), phrase (*cxn*), clause (*cxn*) (see also sections 2.1, 6.1.1), complex sentence (*cxn*)

1.4 How Do We Compare Constructions within and across Languages?

comparative concept, construction, strategy, verbal copula (*str*), crosslinguistically valid, encoding strategy, system, co-expression (*str*), recruitment strategy

*1.5 How Do We Analyze the Structure of Sentences in a Particular Language?**1.6 Appendix – Interpreting Language Examples: Interlinear Morpheme Translations*

interlinear morpheme translation (IMT), object language, (free) translation, cumulation, false cumulation, metalanguage

2 Propositional Act Constructions

The Skeleton of a Sentence

2.1 Propositional Acts: Semantic Classes and Information Packaging

We now turn to the first set of grammatical comparative concepts to be formally introduced in this textbook, and the grammatical terms we will use for them. Table 2.1 presents the comparative concepts for each combination of propositional act construction – that is, reference, modification, and predication – and the three basic semantic classes of objects, properties, and actions, which were illustrated with English examples in Table 1.1 at the beginning of section 1.3. In this section, I will briefly describe the semantic classes and propositional acts; in section 2.2, I will discuss the constructions defined by the combinations of propositional act and semantic class.

We will illustrate the semantic classes and propositional acts with the sentence in (1):

- (1) I wrote a long letter.

We begin by describing the semantic classes listed in the leftmost column of Table 2.1. The **object concept (sem)** category ('objects' for short), represented by *I* and *letter* in (1), includes both persons and things (i.e. human, animate, and inanimate objects). These and other subtypes of the object semantic class will be discussed in greater detail in section 3.1.2. Objects are also **nonrelational (sem)**: they do not inherently make reference to other entities in their definition but "exist in themselves" – a letter is just a letter. Object categories are **stative (sem)** – that is, being a letter doesn't involve change over time. Finally, object categories are **stable (sem)** – that is, the identity of an object is construed as lasting for the lifetime, or at least the relevant life stage, of an object (for further discussion of the construal of stability, see section 4.1.2).

Action concepts (*sem*), also called 'actions,' illustrated by *wrote* in (1), are the opposite of objects in all of these semantic features. Actions are **relational (sem)** – that is, an action exists by virtue of being an action performed by someone or something. Writing inherently involves a writer and something written. Actions are **dynamic (sem)** – that is, change occurs, unlike with object identity, which is stative. Finally, actions are also **transitory (sem)** – that is, they typically can start and stop.

Table 2.1 Grammatical constructions for combinations of three basic semantic classes and the three major propositional act (information packaging) functions

Semantic class	Propositional act		
	reference	modification	predication
object	nominal phrase <i>head</i> : noun	possessive modifier / genitive phrase	predicate nominal
property	property-referring phrase	adjectival phrase <i>head</i> : adjective	predicate adjectival
action	complement (clause)	relative clause	verbal clause <i>head</i> : verb
(all semantic classes)	referring/argument phrase <i>head</i> : referent expression	attributive phrase <i>head</i> : modifier	clause: <i>head</i> : predicate

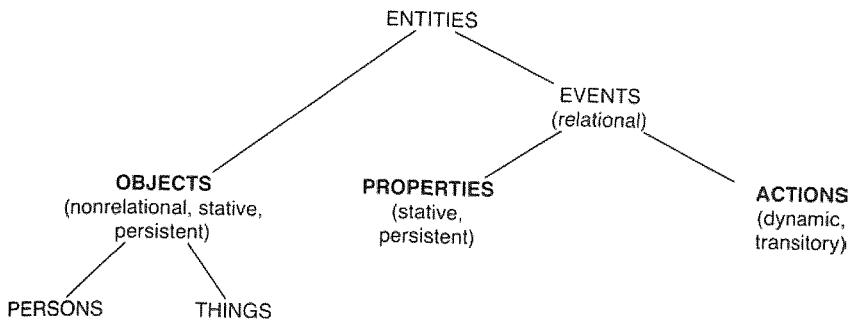


Figure 2.1 Ontology of major semantic classes

Property concepts (*sem*), also called ‘properties,’ illustrated by *long* in (1), are intermediate between objects and actions semantically in that they have some semantic features of objects but others of actions. Like actions, properties are relational: length does not exist in itself; length is length of something, in this case a letter. Like objects, however, properties are stative: being long does not change over time. The most prototypical properties are stable as well (but see section 4.1.2 for further discussion).

We will subsume relational concepts, including actions and properties, under the term **event (*sem*)**.¹ Finally, if we want to refer to any or all of the semantic classes in general, we will use the term **entity (*sem*)**.

A taxonomy of these semantic classes, also called an **ontology (*sem*)**, is given in Figure 2.1. The three semantic classes associated with the traditional definition of noun, adjective, and verb are given in boldface.

¹ The term ‘event’ has been used in many different ways, like most technical terms in linguistics. Our definition is one of the common uses but differs from other common uses. Other terms that are used as we use ‘event’ are ‘eventuality,’ ‘situation,’ and ‘state of affairs (SOA).’

The three semantic classes in Table 2.1 and Figure 2.1 do not exhaust all of the possible types of entities. There are, for example, stative relational concepts that are transitory, such as liking something and being sick. These are often called transitory states. There are also concepts denoting persons that are called ‘relational,’ in particular kin terms such as ‘mother’: a mother is always defined as the mother of someone. However, *mother* refers to one person in the relationship, unlike true relational concepts such as love, which refers to the emotional bond between two people, not one of the persons. We will discuss many of these semantic classes other than objects, properties, and actions in later chapters. The importance of the three semantic classes in Table 2.1 and Figure 2.1 pertains to their role in defining ‘noun,’ ‘verb,’ and ‘adjective,’ in relation to the major propositional acts.

We now turn to the propositional acts listed in the first row of Table 2.1. The definitions of the three propositional acts presented in section 1.3 are repeated below:

reference (*inf*) – what the speaker is talking about

predication (*inf*) – what the speaker is asserting about the referents in a particular utterance

modification (*inf*) – additional information provided about the referent

A metaphor that has been used by linguists from several different theoretical approaches to analyze propositional act functions is the **file metaphor** (e.g. Givón 1983; Heim 1983; DuBois 1987:817; Croft 1991:123; Stassen 1997:102; see section 6.1). We will use the file metaphor here to describe the information packaging functions of the propositional act constructions.

The act of **reference (*inf*)** opens and/or accesses a discourse file for a **referent (*inf*)**. The pronoun *I* in example (1) is used to access an existing discourse file in the mind of the hearer for the person who is currently the speaker. On the other hand, the referring phrase *a long letter* creates a new discourse file in the mind of the hearer.

Predication (*inf*) is the act of asserting something that applies to that referent or those referents; hence predication adds information to the referent’s discourse file. *Wrote* asserts a relationship between the two referents, myself and the letter, and so adds information to those referents’ files (one thing about me is that I wrote a letter; one thing about the letter is that I wrote it).

It is common to describe the referent(s) which the predication is predicated of as **arguments (*inf*)**. For the most part, ‘argument’ is synonymous with ‘referent,’ but there are instances in spoken discourse where a referent is expressed without it being an argument of a predicate; it is a “stand-alone” referent. We will discuss some examples of “stand-alone” referents in section 10.4.3, but until then, ‘argument’ can be assumed to be synonymous with ‘referent.’

Finally, **modification (*inf*)** enriches the information in the discourse file of a referent in some way. *Long* enriches the information in the discourse file opened

for *letter*. The information it adds to the discourse file therefore is of a secondary nature. Further description of the modification information packaging function is found in section 4.1.

2.2 The Major Propositional Act Constructions and their Structure

The cells in Table 2.1, apart from the first column (the semantic classes) and the first row (the information packaging functions), are constructions. The cells in the rows for the semantic classes all name the morphosyntactic forms that express the combination of semantic class from the relevant row and information packaging function from the relevant column.

We describe the basic anatomy of a construction in section 2.2.1, and then the general constructions for the propositional acts, in the last row of Table 2.1, in section 2.2.2. We then turn to the constructions on the diagonal from upper left to lower right – which we suggested in section 1.3 are the basis for a crosslinguistically valid definition of noun, adjective, and verb – in section 2.2.3. After further discussion of the structure of constructions in section 2.2.4, we turn to the nonprototypical propositional act constructions in the remaining cells of Table 2.1 in section 2.2.5.

2.2.1 Anatomy of a Construction: Wholes and Parts, and Heads and Dependents

Constructions are potentially **complex** (*cxn*), that is, the construction consists of more than one **element** (*cxn*) which functions as a role in the construction (see section 1.1). For example, *the old doctor* is a complex construction made up of three elements: *the*, *old*, and *doctor*; *very old* is a complex construction made up of two elements, *very* and *old*; and *quickly walked off* is a complex construction made up of three elements, *quickly*, *walked*, and *off*. That is, a construction is a whole made up of parts – namely, the elements.

The elements of a complex construction are often single words, as in the preceding examples. But some elements are themselves complex constructions made up of further elements. For example, *a letter [to the editor]* is a complex construction made up of *a*, *letter*, and *to the editor*; the last element is itself a complex construction made up of *to*, *the*, and *editor*. And *She ate [a very large cookie]* is a complex construction made up of *She*, *ate*, and *a very large cookie*. The last element is itself a complex construction made up of *a*, *very large*, and *cookie*; and this construction's middle element is also complex, made up of *very* and *large*.

More generally, then, a construction is made up of parts – the elements. Elements may themselves be made up of parts, and so on. This is all the structure of a construction's form that is necessary for the constructional analysis in this textbook (for a detailed argument in support of this simple anatomy of constructional form, see Croft 2001:chs. 5–6).

In many – though not all – constructions, there is a single element that has a special status. The **head (cxn)** of a construction is essentially **the most contentful word that most closely denotes the same function as the phrase (or clause) as a whole**. This is a functional definition of the head of a construction. There are also proposed syntactic definitions of a head. Although we will not go into the problems with a syntactic definition of ‘head’ here, they suffer from the same problems as syntactic definitions of other word classes, as described in section 1.2. A syntactic head is defined by its occurrence in a particular construction or constructions in a language. The language-specific constructions used to define heads in different languages are different, and the different constructions used to define heads don’t pick out the same words as heads, even in a single language. Hence, there is as much confusion about syntactic definitions of heads as there is about syntactic definitions of word classes. For this reason, we will use only the functional definition of ‘head’ given in this paragraph (for detailed argumentation for this position, see Croft 2001:ch. 7).

A functional head is defined by the combination of semantics and information packaging. Two constructions that convey roughly the same meaning may have different heads due to different packaging of that meaning. For example, the head of *the tree that died* is *tree*, because *the tree that died* is a referring expression, referring to a tree. But the head of *the tree died* is *died*, because *the tree died* is a predication about the tree, asserting the change of state of the tree from alive to dead.

A head is a construction, although it actually names one element of a construction, not the construction as a whole. The term ‘head’ describes a form, usually a single word, in terms of a combination of semantics and information packaging; and a construction is a form expressing a combination of semantics and information packaging. In other words, elements of constructions are also constructions, in conformity with the construction grammar definition of a construction as any pairing of form and function (see section 1.1).

Some constructions do not have a single word that more or less denotes the same function as the phrase as a whole. One common “headless” construction is coordination: in *butterflies and dragonflies*, neither *butterfly* nor *dragonfly* denotes anything close to what the referring phrase as a whole denotes, which is the group combining both types of insects. The structure of coordination constructions will be discussed further in Chapter 15. Another common “headless” construction is one in which there is a modifier but no word denoting the referent: (*My steak is large, but*) *Harry’s is larger*. The phrase *Harry’s* refers to a steak, which is being modified as belonging to Harry; but there is no word in the phrase that denotes the steak. Constructions with modifiers and no head will be discussed in sections 5.4 and 19.4.

The elements of a complex construction apart from the head are most generally called **dependents (cxn)**. Dependents are hence defined negatively: they are the element(s) of a construction that is/are not the head. However, dependents have a semantic relation to the head and an information packaging relation to

the head. These relations of function are part of what defines different types of complex constructions, described in the next section.

2.2.2 Types of Constructions: Phrases and Clauses

A construction that performs the act of reference will be called a **referring phrase (cxn)**. A referring phrase should not be confused with a referent: a referring phrase is a construction, and a referent is a concept that is packaged as being referred to in the discourse. The complex construction *a long letter* is a referring phrase; its referent is the letter in question.

A referring phrase construction may also include concepts that function to modify the referent. Reference, as a propositional act, is basically nonrelational: reference simply serves to pick out a referent for the speaker and hearer. Modification, however, is basically relational: modification has to modify something, namely the referent. In *long letter*, the property of length is being used to modify the referent (the letter). Thus, a complex referring phrase typically consists of an element expressing the referent (*letter*), which is the head of the referring phrase, plus one or more elements that function as modifiers of the head (here, *long*).

Modifiers may themselves be “modified,” by **admodifiers (cxn)** such as the **degree (sem)** admodifier *very*, as in *a very long letter*. In other words, modifiers may also be complex constructions. A construction performing the action of modification will be called an **attributive phrase (cxn)**. That is, an attributive phrase is a possibly complex expression consisting of a modifier and possibly also admodifier(s); see section 4.1.2 for further details.

It is also possible for admodifiers to occur in phrases themselves, with the “Boolean” words *not, and, or, but*: [*very or somewhat long*; [*somewhat but not very long*]. However, the Boolean words also can be applied in other phrases. In *a green and blue dress*, the Boolean words are part of an attributive phrase. In *not John but Susan*, the Boolean words are part of a referring phrase. We will, however, leave the Boolean words or “admodification phrases” to future editions of this textbook, because their crosslinguistic variation has not been explored in any detail.

The information packaging function of predication is also necessarily relational: predication asserts something about a referent. In *I wrote a long letter*, the writing process is predicated of me, and also of the letter, as noted in section 2.1. The function of predication thus is associated with one or more referents – more precisely, arguments – although the arguments of a predicate are frequently not expressed grammatically. Hence a predication construction may also include multiple referring expressions. A referring phrase is also called an **argument phrase (cxn)** when it is syntactically combined with a predicate (compare section 2.1 on referents and arguments). The term **predicate (cxn)** refers to the element functioning as the predication (see section 2.2.4).

Table 2.2 *Information packaging and constructions for the major propositional acts*

Information packaging	Construction
predication (also <i>thetic, identificational</i>)	clause
reference, referent, argument	argument phrase, referring phrase
modification	attributive phrase
admodification	admodifier

The complex construction consisting of a predicate and the referent/argument phrase(s) it is predicated of is called a **clause** (*cxn*). A clause usually expresses the predication information packaging function. The term ‘clause’ will also be used for constructions defined by two other information packaging functions besides the predication function – namely, the *thetic* and *identificational* functions. We will set aside the latter two types for now; they are described in Chapters 10 and 11.

Table 2.2 summarizes the terms for constructions (simple or complex) and the information packaging functions they express.

From Table 2.2, it can be seen that the term ‘phrase’ is used to describe a variety of constructions that are typically “smaller” than a clause. That is, phrases are elements of clauses (as with argument phrases), or they are elements of elements of clauses (attributive phrases); see Figure 2.2 in section 2.2.4.

This leaves one important type of complex construction not yet described here – in fact a type of construction that is not a part of traditional grammar terminology. In *The soldier quickly walked off*, it is generally agreed that an argument phrase such as *the soldier* is a dependent of the predicate *walked*: it denotes a participant in the event denoted by the predicate. But what about *quickly* and *off*? Many non-argument phrase elements in a clause, including words like *quickly* and *off*, are best analyzed as parts of the predicate. That is, predicates themselves may also be simple or complex constructions. **Complex predicates** (*cxn*) are predicates made up of multiple semantic components that are expressed by multiple morphosyntactic elements. In the example, the multiple semantic components are the manner of motion (*walked*), the rate of motion (*quickly*), and the direction of motion (*off*).

Complex predicates are varied in the types of elements they are made up of, and so are described in their own chapters (Chapters 13 and 14). The elements of complex predicates do not always form a contiguous syntactic unit (formal grouping); they are often separated as in *I sent them away*. Therefore, the combination of elements in a complex predicate is not generally described as a “phrase”; the term “phrase” is generally used for a contiguous group of words. Hence the term ‘complex predicate’ is used here instead.

2.2.3

Noun, Verb, and Adjective as Comparative Concepts: Prototypical Constructions

The cells on the diagonal from the upper left to the lower right in Table 2.1 are the **prototypical constructions (cxn)** for parts of speech – noun, adjective, and verb. Prototypical constructions play an important role in cross-linguistic comparison and in relating crosslinguistic universals to the facts of specific languages.

The prototypical constructions serve as “fixed points” for crosslinguistic comparison. In the case of parts of speech, the prototypical constructions are reference to objects, modification by properties, and predication of actions. The prototypical constructions define what morphosyntactic structures are characteristic of parts of speech in the language. For example, compare English and Russian reference to objects: English *the book* and Russian *knig-u* [book.F-SG.ACC]. We will define a **noun (cxn)** as the head of a referring phrase, no matter what language we are talking about. Hence *book* is an English noun and *knigu* is a Russian noun. But their morphosyntactic structures differ. English nouns take articles such as *the*; Russian nouns never do, since Russian lacks articles. Conversely, Russian nouns inflect for case, such as (Feminine) Accusative *-u*; English nouns never do, since English lacks case inflections. English nouns and Russian nouns, however, both inflect for singular and plural number; compare English Plural *books* and Russian (Nominative) Plural *knig-i*.

The important point here is that morphosyntactic properties such as inflecting for number and case – or not – and combining with articles – or not – is **not** what makes English *book* or Russian *knigu* nouns. What makes them nouns is that they express reference to an object concept. Once we have identified nouns across languages in functional terms (reference to an object), then we can explore how they are expressed grammatically across languages: what inflections they take, what other categories of words they combine with, and so on. This is an important difference between the traditional, structuralist, and generative definition of parts of speech (noun, verb, adjective) and the typological definition of parts of speech as comparative concepts. The former take as their starting point language-specific morphosyntactic properties such as inflection for number and case or combinability with an article. The latter takes as its starting point universal functional properties of the construction, and compares different languages as to their morphosyntactic strategies for expressing the function.

Specifically, the major parts of speech are defined as the head of a referring phrase, attributive phrase and clause that also denotes the prototypical semantic class along the diagonal in Table 2.1. A noun, as we have just seen, is the head of the subtype of referring phrase that refers to an object. The word *violin* in the referring phrase *an old violin* is a noun: it is an object concept that is the head of the referring phrase. We will use the term **nominal phrase (cxn)** to denote a referring phrase whose head denotes an object concept (that is, it is headed by a noun).

We can define the other major parts of speech in an analogous fashion. An **adjective** (*cxn*) is the head of the subtype of attributive phrase that denotes a property concept being used for modification. The word *new* in *a very new book* is an adjective: it is a property concept that is the head of the attributive phrase *very new* and modifies *book*. We will use the term **adjectival phrase** (*cxn*) to denote an attributive phrase whose head denotes a property concept (that is, it is headed by an adjective). Finally, a **verb** (*cxn*) is the head of the subtype of clause that denotes an action concept that is predicated. The word *jumped* in the clause *She jumped*, is a verb: it is an action word that is the head of the clause and is predicated of *She*. We will use the term **verbal clause** (*cxn*) to denote a clause whose head denotes an action concept (that is, it is headed by a verb).

There is a second important difference between the traditional, structural, and generative definitions of parts of speech as word classes and the typological definition of parts of speech as comparative concepts presented here. The typological definitions of parts of speech do not refer to word classes. Word classes are language-specific, and therefore cannot form the basis for a comparative concept. Defining English nouns as words that inflect for number – that is, occur with English number suffixes – and combine with articles – that is, the English articles *a* and *the* – yields a class of English words that cannot be compared across languages. The same applies to defining Russian nouns as words that inflect for number and case – that is, occur with Russian case/number suffixes.

Another possibility for defining parts of speech across languages is to use crosslinguistically comparable categories such as number (singular/plural), since number can be defined semantically. This would be a valid crosslinguistic criterion for defining a comparative concept such as ‘noun’. The problem is, it is not an empirically useful criterion. Many languages lack the grammatical category of number; we would be forced to say that such languages don’t have nouns. Other languages have number, but it is restricted to a sometimes small subclass of object concepts. This is an interesting fact (see section 3.1.2); but we may not want to exclude object concepts that do not inflect for number in those languages from the ‘noun’ class.

We choose instead the particular combinations of semantic class and information packaging described above: reference to objects, modification by properties, and predication of actions. These functions can be defined across all languages, and therefore provide a sound basis for morphosyntactic analysis across all languages.

This leads us to the question of why these three combinations of semantic class and propositional act function, and not the other six combinations in Table 2.1, were chosen to define ‘noun,’ ‘adjective,’ and ‘verb.’ This is again an empirically based choice: this choice is, however, based on crosslinguistic universals. The primary consideration is usage. These three combinations are the most frequent of the nine in the table in language use, within and across languages (Croft 1991:87–93). There are also universals of morphosyntactic expression that are revealed by choosing those three combinations. These universals are briefly described in section 2.5 at the

end of this chapter: the prototypical constructions exhibit the most efficient (shortest) encoding and the greatest potential for expressing associated categories such as number, definiteness (the function of articles; see Chapter 3), and case for nouns.

Finally, there is a third significant difference between the traditional, structural, and generative definitions of parts of speech and the typological definition of parts of speech as comparative concepts. The comparative concepts of ‘noun,’ ‘adjective,’ and ‘verb’ are restricted to only the prototype constructions on the diagonal from upper left to lower right in Table 2.1. That is, the comparative concept of ‘noun’ is restricted to object words only in referring phrases (specifically, as the head of the referring phrase); the comparative concept of ‘adjective’ is restricted to property words only in attributive phrases; and the comparative concept of ‘verb’ is restricted to action words only in clauses. For example, *doctor* in *the old doctor* fits the comparative concept of a noun, but *doctor* in *I am not a doctor* will not be described as a noun, because it is not the head of a referring expression; it is the head of a predicate nominal construction.

This restriction of the use of ‘noun’ may seem counterintuitive, because *doctor* looks like the same word in both *the old doctor* and *I am not a doctor*, and *doctor* in the predicate nominal construction takes the article *a*, and it can be inflected for number (*They are not doctors*). However, these are facts of English, not facts about predicate nominal constructions in general. In fact, we have already seen in section 1.4 that the Classical Nahuatl translation equivalent *tīcītl* doesn’t work the same way: it inflects in the same way that verbs – in our narrow sense of ‘verbs’ as heads of predication – do in that language (it inflects for the person and number of the subject argument phrase, and for negation).

- (2) ah-ni-tīcītl
 NEG-1SG-**doctor**
 ‘I am not a doctor.’

The typical analysis for these predicate nominal constructions is to assume that *doctor* in *I am not a doctor* is a “noun” in English, but *tīcītl* in *ah-ni-tīcītl* is a “verb” in Classical Nahuatl. This leads to the problematic statements discussed in section 1.2, such as ‘nouns are verbs in Classical Nahuatl.’ But we now have a way to be explicit about what is really going on in Classical Nahuatl, and to avoid the problematic formulations cited in section 1.2. First, the word classes of a particular language are language-specific. There is nothing preventing us from saying *doctor* in *I am not a doctor* is an English Noun, but *tīcītl* in *ah-ni-tīcītl* is a Classical Nahuatl Verb – these are language-specific word classes.

It is possible for language-specific word classes to cut across grammatical constructions defined as comparative concepts, such as ‘noun’ as the head of the referring phrase (= reference to objects). For example, English Noun may be defined as a word class defined by modification constructions that occur in object predication as well as object reference (*I am not a medical doctor*; *You need a medical doctor*). Likewise, Classical Nahuatl Verb may be defined as a word class used in morphological constructions for negation and indexation for object concepts as well

as property concepts (*ah-ni-ticil* 'I am not a doctor,' *ah-ni-chocp* 'I am not crying'). However, for crosslinguistic comparison, and for formulating language universals, we must define constructions by their functions, not by language-specific constructions. A noun in the crosslinguistic sense is an object concept word functioning as the head of a referring expression, and nothing more.

If we don't use the term 'noun' to describe *doctor* in *I am not a doctor* or in (2), then we have to use a different term. Since it is an example of object predication – the upper right cell in Table 2.1 – we will call both *I am not a doctor* and its Classical Nahuatl equivalent *ah-ni-ticil* in (2) instances of the predicate nominal construction, as we have done in Table 2.1. More precisely, *doctor/ticil* are the heads of the predicate nominal construction in the respective languages. But we are not calling the heads of the predicate nominal construction 'noun' in English, Nahuatl, or any language.

Some linguists would not call the Classical Nahuatl construction in (2) a predicate nominal construction, because the Classical Nahuatl word is inflected like a verb – that is, like a predicated action word. Classical Nahuatl uses an inflected object word strategy, and these linguists would instead restrict the term 'predicate nominal' just to copular or noninflecting strategies. This practice represents one of the problems in interpreting reference grammars (or other analyses of other languages): **traditional grammatical terms are sometimes used for constructions in the comparative sense, and sometimes for a strategy**, typically the strategy found in English or a European language. Since the English predicate nominal construction uses a copula strategy, many linguists use the term 'predicate nominal' only for constructions for object predication that use the copula strategy. For us, however, all of the terms in Table 2.1 apply to constructions, not strategies, so they are defined solely in functional terms, and not by formal grammatical characteristics such as the presence of a copula.

Both of these descriptions – that *ticil* 'is a verb,' and *ah-ni-ticil* 'is not a predicate nominal' – are telling us something about the two languages and their grammatical relationship to each other, albeit in a problematic way. Both languages express the predication of an object concept. This is indicated by saying that both the English and Classical Nahuatl constructions are instances of the same **construction** – namely, the predicate nominal construction – and moreover saying that the object concept words in each language (*doctor* and *ticil*) are the heads of their respective constructions. But English and Classical Nahuatl use **different strategies**, which makes the object concept word look more like the noun construction in English, but more like the verb construction in Classical Nahuatl. That is, the strategy chosen in English for the predicate nominal construction is related to the English strategy for object reference, while the strategy chosen in Classical Nahuatl for the predicate nominal construction is related to the strategy in Classical Nahuatl for action predication. In other words, the problematic descriptions are attempting to capture the difference in strategies in English and Classical Nahuatl as a difference in word classes.

The effect of adopting traditional grammatical terms primarily for constructions and not strategies is that those terms will often be used for a wider range

of morphosyntactic structures than in traditional Western grammar, including structures not found in European languages. I have chosen to do this because I want to emphasize the continuity between the theories about those constructions presented in this book and many ideas in (at least) the Western grammatical tradition, but extending their applicability to all languages, not just the European languages for which they were proposed. For example, the analysis of nouns and verbs presented in this section is essentially the same as the one proposed by Sapir in a famous passage from his *Language* (Sapir 1921:119):

There must be something to talk about and something must be said about this subject of discourse once it is selected ... The subject of discourse is a noun. As the most common subject of discourse is either a person or a thing, the noun clusters about concrete concepts of that order. As the thing predicated of a subject is generally an activity in the widest sense of the word, a passage from one moment of existence to another, the form which has been set aside for the business of predication, in other words, the verb, clusters about concepts of activity.

However, there are cases in which a traditional term has certain connotations such that I decided to use other, newer terms that have been recently proposed. For example, ‘indexation’ and ‘flag’ are used instead of ‘agreement’ and ‘case’ (see section 4.4), and ‘balanced’ vs. ‘deranked’ are used instead of ‘finite’ vs. ‘nonfinite’ (see section 15.2.3).

— The role of prototype constructions in crosslinguistic analysis is summarized here. Prototype constructions are a subset of constructions in a particular grammatical domain, such as the domain of parts of speech represented in Table 2.1. Prototype constructions define the constructions in question purely in terms of their function, such as reference to objects, modification by properties, and predication of actions. The choice of which constructions are the prototypes is empirically based, on crosslinguistic validity (can be defined in all languages), frequency of occurrence in language use, and morphosyntactic patterns of coding and behavior (potential of expression).

The prototype constructions can then be used to describe the strategies used in the nonprototypical constructions – in this case, the other combinations of semantic class and information packaging. Nonprototypical constructions often use a recruitment strategy relative to the prototypical constructions. For example, the head of the English predicate nominal construction is expressed the same way as the head of the prototypical referring phrase construction – in traditional terms, it “looks like a noun.” Conversely, the head of the Classical Nahuatl predicate nominal construction is expressed in the same way as the head of the prototypical clause (action predication) construction – in traditional terms, it “looks like a verb.” The recruitment strategies between prototypical and nonprototypical parts of speech constructions will be described in section 2.4.

It is very important to keep distinct the descriptions of language-specific categories, semantic categories, and information packaging categories. Doing so requires consistent use of terminology, the consistent capitalization of terms for language-specific constructions, and, in some cases, the invention of new terms.

This seems somewhat excessive in comparison to traditional grammatical analysis. It is, however, necessary in order to avoid the sorts of contradictory-seeming statements such as those described in section 1.2, and the confusion they create.

2.2.4 More on the Structure of Propositional Act Constructions

In section 2.2.3, we presented noun, adjective, and verb as comparative concepts, specifically as the head of a referring phrase, attributive phrase, and clause, respectively – which also denote objects, properties, and actions, respectively; see the diagonal from upper left to lower right in Table 2.1. However, not all heads of referring phrases denote objects: in *Hiking is fun*, the subject argument phrase *hiking* denotes an action, not an object. Likewise, not all heads of attributive phrases denote properties: in *fifty trees*, the attributive phrase *fifty* denotes a number (cardinality), not a property. Finally, not all heads of clauses denote actions: in *She loves classical music* or *He is a doctor*, the head of the clause *loves* or (*is a*) *doctor* denotes a state and an object, respectively.

Hence, we need terms to describe the head of any argument phrase, any attributive phrase, and any clause. The term **predicate** (*cxn*) is commonly used for all types of heads of clauses, not just actions. And the term **modifier** (*cxn*) is commonly used for (almost) all types of heads of attributive phrases, not just properties. There is, however, no widely used term for all types of heads of referring phrases, as opposed to just objects. The term ‘referent’ is the logical choice, but it is used widely for the function – namely, the entity being referred to – and we will respect that common usage. For this reason, we have to coin the rather unwieldy term **referent expression** (*cxn*) for the last function. The major terms for heads of constructions are listed in Table 2.3.

We can now present the skeletal structure of a clause, in Figure 2.2. A clause usually has a head, which prototypically is a verb but more generally is a predicate. (Recall from section 2.2.1 that clauses, and phrases, may be headless.) A clause may contain one or more referring phrases / argument phrases. A referring phrase usually has a head, which prototypically is a noun but more generally is a referent expression. A referring phrase may contain one or more attributive phrases. An attributive phrase has a head, prototypically an adjective but more generally a modifier. Finally, an attributive phrase may contain one or more admodifiers.

Languages often have specialized constructions for a head and specific types of dependent phrases. For example, English verbs describing putting or application normally have three dependent argument phrases, referring to the agent of the action, the thing being put or applied, and the location where the thing is put or applied:

- (3) [The engineers] placed [sandbags] [on the levee].

This clause contains the verb *placed*, the Subject *the engineers*, the Object *sandbags*, and the Oblique *on the levee*. An essential part of this construction is not just the morphosyntactic form of the head (the verb), but also the morphosyntactic form of the dependents: the Subject, Object, and Oblique forms of the argument

Table 2.3 *Terms for prototypical heads and general heads of propositional act constructions*

Construction	Head of construction (prototype)	Head of construction (general)
clause	verb	predicate
argument phrase, referring phrase	noun	referent expression (RE)
attributive phrase — (see section 2.2)	adjective	modifier admodifier

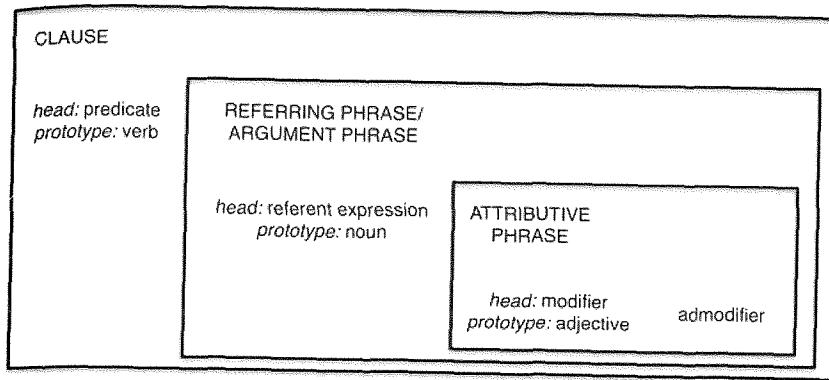


Figure 2.2 *The skeletal structure of a clause*

phrases. We want to talk about constructions with verb heads and certain types of dependents, which can be thought of as a type of clause construction. Since this construction includes a configuration of argument phrases, it is called an argument structure construction. Argument structure constructions will be discussed in Chapters 6–9.

Likewise, languages often have specialized constructions for the head of a referring phrase combined with specific types of dependent attributive phrases. For example, English has different constructions for property modification and object modification:

- (4) a. [very red] book
- b. [my mother]'s book

In the property modification construction in (4a), the attributive phrase *very red* is simply juxtaposed to the referent expression *book*. In the object modification construction in (4b), the attributive phrase *my mother* combines with the clitic -'s as well as the referent expression *book*.

We will want to talk about the constructions that different modifiers use to combine with the referent expression. But such constructions sometimes involve a morphosyntactic alteration of the referent expression, not just the attributive phrase. For example, the object modification construction in Mam, illustrated

in (5), requires a prefix on the referent expression *kamb'* ‘prize’/that indexes (agrees with) the attributive phrase *meeb'a* ‘orphan’ (England 1983:142; see section 4.4):

(5)	t-kamb'	meeb'a
	3SG-prize	orphan
		[the] orphan's prize'

We also want to talk about the construction made up of the combination of an attributive phrase (or even multiple attributive phrases) and the head referent expression. We will call this combination a **referent modification construction**, or a **modification construction (cxn)** for short. A referent modification construction is a type of referring phrase, since it includes the head as well as the modifier phrase(s) that make up a referring phrase. Attributive phrases and referent modification constructions are discussed in Chapters 4 and 5.

2.2.5 Nonprototypical Propositional Act Constructions

The constructions used to define noun, adjective, and verb along the diagonal from upper left to lower right in Table 2.1 are always treated as the prototype constructions for describing morphosyntactic structure in any language (see section 2.2.3). That is, someone describing the nouns of a language, however they define ‘noun,’ will look at how the object concept that heads a referring phrase is expressed grammatically, and likewise for action concept predication, and modification by a property concept. These constructions are also the most frequent in spoken discourse (Croft 1991:87–93).

Nevertheless, any semantic concept can be referred to, predicated, or used as a modifier, as we saw in Table 1.1 in section 1.3 and Table 2.1 in section 2.1. These **nonprototypical constructions (cxn)**, expressing less common combinations of semantic concept and propositional act, often use distinct strategies from the prototypical referring phrase, attributive phrase, and clause constructions. Traditional approaches have sometimes given these nonprototypical combinations distinct names when the strategies used in English or other European languages are distinct from the prototypical constructions. We, however, will use the traditional names to describe the construction – that is, the combination of semantic content and information packaging – no matter what strategy is employed for that combination in a particular language, as we said in section 2.2.3. In this section, we will briefly describe the nonprototypical propositional act constructions. Most of them are sufficiently complex and interesting to have chapters describing them in more detail.

The **property referring phrase (cxn)** expresses reference to property concepts. English examples generally use morphological derivation for the property referring phrase construction: *length* < *long*, *happiness* < *happy*, etc. Some languages simply use the same strategy as for the adjective (property modification) – that is, no overt

derivational morphology. This construction is little described in reference grammars and has not attracted attention in typology, so it is little known. Reference to properties is extremely rare in discourse (Croft 1991:87–90, Tables 2.9–2.12). For this reason, we will not discuss this construction further in this textbook.

A **possessive modification** or **attributive possession construction** (*cxn*) expresses modification with an object concept, as in *The boy's bicycle*. English uses a distinct construction with the clitic -'s. These constructions are common and rather complex; they are described in Chapters 4 and 5 (along with other attributive phrases).

The **predicate nominal** (also called **object predication**) **construction** (*cxn*) and **predicate adjectival** (also called **property predication**) **construction** (*cxn*) express predication of object concepts and property concepts, respectively. English, like many languages, uses a distinct predication/clausal construction for both: *Sally is a professor*; *Sally is intelligent*. We used these constructions as examples in Chapter 1. Predicate nominal and predicate adjectival constructions, and other constructions for the predicate of other nonprototypical predictions such as location and possession, are described in detail in Chapter 10.

Finally, there are the constructions used for referring to action concepts and for modification by action concepts. The terms we will use for these two combinations of semantic content and information packaging are **complement clause construction** (*cxn*) and **relative clause construction** (*cxn*) respectively.

These are complex construction types both within and across languages, for two reasons. First, there are a variety of strategies for reference to action and action modification within as well as across languages. Examples (6)–(7) illustrate the major strategies found in English, with their traditional names (capitalized since they are language-specific constructions):

- | | | |
|-----|--|-------------------------------|
| (6) | <i>Reference to actions:</i> | |
| a. | The explosion startled them. | [Nominalization] |
| b. | Hiking in Canyonlands is challenging. | [Gerund] |
| c. | They want to eat in the kitchen . | [Infinitival Complement] |
| d. | Frieda thinks (that) Janet won't come to the party . | [Finite Complement] |
| | | |
| (7) | <i>Action modification:</i> | |
| a. | the sleeping child / the child sleeping in the den | [Present Participle] |
| b. | the stolen gold / the gold stolen by the Mafia | [Past or Passive Participle] |
| c. | the woman to watch in this election | [Infinitival Relative Clause] |
| d. | the book that I read last night | [Finite Relative Clause] |

Traditional approaches to English grammar make a fairly sharp distinction between the (a) and (b) strategies, which are expressed in a form more like prototypical referring phrases, and the (c) and (d) strategies, which are expressed in a form more like prototypical clause constructions. Hence the traditional

terms ‘complement clause’ and ‘relative clause’ are restricted to just the (c) and (d) strategies, and the (a) and (b) strategies are usually called ‘nominalization’ and ‘participle.’ Yet a broader crosslinguistic perspective, and even the facts of English, particularly for English Gerunds, indicates that there is no sharp distinction in morphosyntactic form (see section 2.4). For this reason, we extend the use of the traditional terms ‘complement (clause)’ and ‘relative clause’ to all strategies for action reference and action modification, respectively (Keenan and Comrie 1977 use ‘relative clause’ for all strategies used for modification, but extend it beyond action modification to include other modifying concepts).

The second reason why complements and relative clauses are complex is because of the semantics of actions. Actions have participants, often more than one, and occur in particular times and places. In clauses – that is, action predication – participants including time and place are usually expressed in argument phrases, and sometimes with inflections on the verb: *They are eating in the kitchen, Janet won't come to the party, The gold was stolen by the Mafia, I read this book last night.* When actions are referred to, or used in modification, these participants and other semantic content associated with actions may also be expressed. How they are expressed also varies within and across languages, leading to further complexity in the strategies for complements and relative clauses. Hence, complements and relative clauses each receive a chapter of their own, the last two chapters of this textbook (Chapters 18 and 19), due to their morphosyntactic complexity.

Constructions express semantic content packaged in different ways. Yet the strategies used by the languages of the world to express functions are extremely diverse, and the mapping between morphosyntactic form and communicative function is very complex. Why is there so much crosslinguistic variation in the employment of strategies for predicate nominal and other constructions? In the rest of this chapter, the reasons for this complexity are outlined. In section 2.3, we present three principles governing the relation between function and its expression in morphosyntactic form, which motivate the crosslinguistic variation. In section 2.4, we present a general classification of strategies that occur in constructions expressing a nonprototypical combination of semantic content and information packaging, such as the ones described in this section. In section 2.5, we present two universals of form–function mapping that constrain the types of strategies found in prototypical and nonprototypical constructions (in terms of the combination of semantic content and informational packaging that they express).

2.3 Three Principles of the Mapping between Form and Function

Why is the form–function mapping in grammar so complex? The main reason is that “function” comes in two dimensions, semantic content and information packaging. Hence, morphosyntactic form is actually linked to a combination of two dimensions of function at once. And the relationship

between those two dimensions of function is complex in itself. Nevertheless, there are three general principles that govern the relationship between semantic content and information packaging, and explain most of the complexity of the form–function mapping.

In section 1.3, it was pointed out that any type of information – object (person or thing), action, property, or any other semantic class of information – can be packaged in any way. This is the first of three principles underlying the relationship between form and meaning (the three principles are discussed in Croft 2007a:350, 360–73; 2012:13–19).

- ***First principle of information packaging/construal:*** any semantic content may be packaged in any way, in order to serve the joint goals of the interlocutors in discourse.

For example, we can refer to properties (8b) and actions (8c) as well as objects (8a):

- (8)
- a. **Vanessa** surprises me.
 - b. **Vanessa's goodness** surprises me.
 - c. **Vanessa's resignation** surprised me.

This principle was illustrated in section 1.3, Table 1.1, Table 2.1, and section 2.2.4. Every cell in those tables has a construction expressing the combination of semantic content and information packaging for that cell. It is one of the main reasons why the form–function mapping cannot be reduced simply to a mapping from form to semantic content alone, and hence, why the traditional purely semantic definitions of ‘noun,’ ‘adjective,’ and ‘verb’ as object words, property words, and action words fail.

Nevertheless, there is a grain of truth in the traditional semantic definitions of parts of speech. There are very strong preferences for how speakers package different types of information. Objects are autonomous entities that are stable and persistent over time. Hence, objects are most likely to be packaged as referring expressions, and, conversely, referring expressions are most likely to denote objects. This is because a discourse file that is set up or accessed in reference is itself a stable information package. It's not impossible to refer to an action or a property – but it's far less common in discourse. Likewise, actions are relational entities that are transitory in time. Hence, actions are most likely to be packaged as predication, and, conversely, predication are most likely to denote actions (see Croft 1991:88–90). This is because a predication is a passing thing – each clause in an utterance represents a single predication, and each successive clause normally asserts a different predication – and also, predication are predication about a referent, i.e., an information packaging role normally filled by a participant in the action (Croft 1991:123).

These correlations between semantic class and information packaging are a manifestation of the second principle underlying the relationship between form and meaning:

Table 2.4 *The prototypical combinations of the three basic semantic classes and the three major propositional act (information packaging) functions*

Semantic class	Propositional act		
	reference	modification	predication
object	nominal phrase	nominal modifier phrase	predicate nominal
property	property referring phrase	adjectival phrase	predicate adjectival
action	complement (clause)	relative clause	verbal clause

- **Second principle of information packaging/construal:** the nature of reality, e.g. the semantic characteristics of semantic classes, favors (or disfavors) certain ways of packaging that information.

In the case of propositional act functions, the nature of reality favors or disfavors how semantic classes are packaged in a clause. Stable, autonomous entities are favored for reference, and transitory relational entities are favored for predication. Reference to stable autonomous entities and predication of transitory relational entities are therefore the most frequent packagings of meaning in discourse.

A corollary of this principle is that the “favored” ways to package meaning represent the prototypical grammatical constructions, as defined in section 2.2.3. A prototypical construction is a construction that expresses a specific “favored” combination of meaning and information packaging (see also Croft 2003:ch. 6). So, for example, referring to an object is the function of the prototypical nominal or noun phrase construction. We have already seen the prototypical constructions for reference, predication, and modification: they are the constructions in Table 2.1 on the diagonal from upper left to lower right. A modified version of Table 2.1 is presented as Table 2.4, with the prototypical constructions along the diagonal highlighted.

Reference to an action or a property, on the other hand, is a **nonprototypical** combination, and the constructions used for this function occur less frequently in discourse. Languages often – but not always – have distinct constructions for nonprototypical combinations of semantic content and information packaging function. For example, as we have seen, English uses a special predicate nominal construction with a copula for predication of an object concept (*I am not a doctor*). English also uses a nominalization construction for reference to an action or property word: *goodness* (from *good*) or *resignation* (from *resign*). This is one reason why a language usually has multiple referring constructions, multiple predication constructions, and so on: the other constructions are used for nonprototypical packaging of meaning.

Just how the nature of reality constrains construal, in this case information packaging, varies from one information packaging function to another. Consider modification of a referent. Property concept words are most likely to be packaged as modifiers in a modification construction (modifying a referent). This is because if you’re going to enrich the discourse file of a referent, which is a

persisting thing, the most natural way to enrich it is with a persisting but simple additional characteristic of the referent, i.e. a 1-dimensional scalar property like size (*big/little*) or quality (*good/bad*). In fact, a wide variety of concepts are used to modify referents, including numerals, quantifiers, deictic expressions, and so on (see Chapters 4–5). Nevertheless, property attributive constructions tend to be prototypical attributive constructions, i.e. prototypical adjectives are property words in an attributive construction.

Finally, there is a third principle governing the relationship between form and meaning:

- ***Third principle of information packaging/construal:*** the relationship between form and meaning – what sort of construction a word with a particular meaning occurs in – is a matter of cultural convention – that is, the linguistic conventions of the speech community.

This is why there is variation across languages: given the favoring/disfavoring of reality for certain ways to package meanings, and the employment of different constructions for the same information packaging function (see the second principle), speakers in a speech community collatively and over time conventionalize strategies to express the relationship between word meaning and constructional meaning. For example, we saw that English uses a special construction with a copula (a form of *be*) and an indefinite article (*a*) to express predication of an object category, while Spanish uses a copula only, and Classical Nahuatl simply inflects the word for ‘doctor’ in the same way that it inflects action words in predication; examples (9)–(11a) from section 1.4 are repeated in (9)–(11).

(9) *English:*

I am not **a doctor**.

(10) *Spanish:*

Yo	no	soy	médico.
I	NEG	am	doctor

‘I am not a doctor.’

(11) *Classical Nahuatl:*

ah-ni-	ticitl
NEG-1SG-	doctor

‘I am not a doctor.’

Cultural convention is partly arbitrary. We can’t predict what choice a language makes – that is, what choice its speakers make. There is always some degree of arbitrariness in grammar. This degree of arbitrariness is the reason for much crosslinguistic variation. Typologists survey a broad sample of languages in order to discover the range of variation; this textbook describes that range of variation for a broad range of constructions. Despite the arbitrariness underlying much crosslinguistic variation, typologists have found that there are valid universal patterns predicting the structure of one grammatical construction from the

structure of another grammatical construction, and/or from the function of the construction. Some of these patterns will be described in this textbook.

One of the most significant patterns that typologists, and historical linguists, have found regarding the structure of constructions is a dynamic one, about the life history of a single construction. Grammatical constructions emerge from novel and specialized uses of other grammatical constructions – this is what was meant when it was said that all constructional strategies are ultimately instances of recruitment. Once a grammatical construction acquires a novel, specialized use – that is, occurs with a specific meaning or function – and comes to be conventionalized in this use, it starts to undergo changes in grammatical structure that generally conform to the typical expression of that meaning/function. Many grammatical constructions undergo **grammaticalization**, the diachronic process mentioned at the very beginning of this textbook (section 1.1). The grammaticalization process is, however, gradual. Many constructions that we observe in languages have progressed at least partly along a grammaticalization path. As a consequence, they display “mixed” – or at least peculiar – grammatical structure or behavior.

For example, consider the English construction illustrated in *You better leave now*. On the surface, this is quite peculiar: the comparative form of an adjective, *better*, is occurring in the position typically occupied by Auxiliary Verbs such as *must* in English. This construction is a reduction of *You'd better leave now*, itself reduced from *You had better leave now*, which in turn arose from an Old English construction that looked something like ‘It is better for you to ...’ (Denison and Cort 2010). The construction developed an obligation meaning, and for that reason eventually acquired the syntax of other obligation markers in English – but the Auxiliary had disappeared, and what is left is an “Adjective” form occurring in “Auxiliary” position.

Another example is *He's sort of cute*. *Sort of* began as a noun indicating a type of something, with that something in a modifying *of* phrase, something like ‘This is a sort of a utensil.’ But it acquired a degree modifier meaning, and for that reason came to be used in the English degree modifier construction, i.e. in preadjectival position. Yet it kept the preposition *of* (although it lost the article *a*), leading to a grammatically peculiar ‘Noun of Adjective’ construction (Traugott 2008). In fact, *of* is fusing with *sort*, leading to *He's sorta cute* – a further step in the grammaticalization process.

Why does this happen? It is because **speakers tend to be very creative about the functions to which they put utterances** (remember the first principle), **but they tend to be quite conservative about the forms they employ for those functions** (remember the third principle). The result is a messy relationship between form and function: some grammatical properties are due to the function that a specific construction acquires, while other grammatical properties reflect the form it had when serving its original function.

Another consequence of this combination of creativity and conservativeness is that languages are filled with relatively fixed word combinations that have idiosyncratic meanings, such as *eat X's fill*, *red alert*, *run across X*, *straight ahead*, *pull the rug out from under X*, *babysit*, and on and on, seemingly endlessly. This is, of

course, a major part of what makes it so hard to learn another language fluently, or to describe a language thoroughly. An overview of grammatical structure such as this textbook cannot explore the full richness of conventionalized combinations of this sort (called ‘idioms’ and ‘collocations’). We can only outline the more general grammatical patterns from which these specialized combinations arise.

2.4 Recruitment Strategies for Nonprototypical Constructions

The English Predicate Nominal Construction and the Classical Nahuatl Predicate Nominal Construction illustrated in (9) and (11) in section 2.3 are constructions used to express nonprototypical combinations of semantic class and information packaging function. These language-specific constructions instantiate two contrasting strategies used to encode nonprototypical combinations of semantics and information packaging that are found in many different constructions, not just the constructions found in Table 2.1. The strategies for nonprototypical constructions are mostly recruitment strategies: the nonprototypical constructions recruit the morphosyntactic form of a prototypical construction. Which prototypical construction forms the basis for the recruitment strategy varies across languages, however.

In English, the word *doctor* in the predicate nominal construction *I am not a doctor* looks morphosyntactically very much like the word *doctor* in the referring expression construction: the form of the word is the same, the word takes the indefinite article *a*, and so on. Object concepts occur most commonly in reference, much more so than in predication, and so object concepts are the semantic prototype for reference. In English, when object words are being used in predication rather than reference, they “take along” the morphosyntax of the prototypical information packaging function of their semantic class, so to speak. That is, English speakers encode the nonprototypical combination of object predication by using the grammatical structures found in the prototypical combination in the same row of Table 2.1 – namely, object reference. We will call this strategy the **semantic information packaging (IP) strategy (str)**: recruit the morphosyntax of the information packaging function prototypically associated with the semantic category. Table 2.5 illustrates how the semantic IP strategy recruits the construction used in the object concept’s prototypical information packaging function, reference.

This is why *doctor* in *I am not a doctor* is called an English Noun in word class approaches: it can take an article and other modifiers (e.g. *I am not a medical doctor*). However, *doctor* in the English Predicate Nominal construction is not fully like a prototypical noun: for example, *doctor* takes only the indefinite article (*I am not the doctor* has a different meaning; see section 10.1.2). We describe this as a more limited **behavioral potential** of *doctor* in the Predicate Nominal construction compared to the prototypical noun in reference (see section 2.5): it can’t take both the definite and indefinite articles.

A semantic IP strategy is a recruitment strategy: the construction(s) used for object concepts in their prototypical referring function are recruited for

Table 2.5 *The semantic information packaging strategy for English predicate nominals*

Semantic class	Propositional act		
	reference	modification	predication
<i>object</i>	a doctor		(I am not) a doctor
<i>property</i>			
<i>action</i>			

Table 2.6 *The actual information packaging strategy for Nahuatl predicate nominals*

Semantic class	Propositional act		
	reference	modification	predication
<i>object</i>			ah-ni-ticatl NEG-1SG-doctor
<i>property</i>			
<i>action</i>			ah-ni-choco NEG-1SG-cry

object predication. A semantic IP strategy can also be thought of as the more conservative approach, carrying the referring function morphosyntax over to the predicating function.

In Classical Nahuatl, on the other hand, when an object word like *ticatl* is used for predication, it takes on the morphosyntax (or at least some of it) of words prototypically associated with its actual information packaging function, namely action words: it indexes (agrees with; see section 3.3.2) its subject for person and number, and inflects for negation similar to a verb (defined as the head of an action predication). That is, Classical Nahuatl speakers encoded the nonprototypical combination of object predication by using the grammatical structures found in the prototypical combination found in the same column of Table 2.4, namely action predication. We will call this strategy the **actual information packaging (IP) strategy (str)**: employ the morphosyntax of the words prototypically associated with the actual information packaging function. Table 2.6 illustrates how the actual IP strategy recruits the construction used in the object concept's actual information packaging function, predication.

This is why *ticatl* in *ah-ni-ticatl* is sometimes called a Classical Nahuatl Verb, or a subclass of Classical Nahuatl Verbs, or it is said that 'there are no nouns in Classical Nahuatl' in the word class approach to syntactic analysis described in section 1.2.1 (Andrews 1975:13). However, *ticatl* in the Classical Nahuatl Predicate Nominal construction is not fully like a prototypical verb in the language: it does not inflect for tense (Andrews 1975:147). That is, *ticatl* in the Classical Nahuatl Predicate Nominal construction has a more limited behavioral potential compared to the prototypical verb in predication.

An actual IP strategy is also a recruitment strategy: the action predication construction is recruited for the object predication function. This is another reason why it is said that ‘Classical Nahuatl nouns are verbs’; object concept words are inflected in the same way as action concept words in the same predication function.

The English Predicate Nominal construction does not consist solely of *a doctor*; it also includes a form of *be*. *Be* is an English Copula – that is, it is a language-specific word class defined by the Predicate Nominal construction. The employment of this “extra” morpheme is another common grammatical strategy, particularly for nonprototypical constructions such as the predicate nominal construction. We will call this strategy the **overt (coding) strategy (str)**. Hence, a more accurate (but not yet completely accurate) description of the English Predicate Nominal construction is that it uses an overt semantic IP strategy.

The opposite of an overt coding strategy is a **zero (coded) strategy (str)**. An example of a zero (coded) semantic IP strategy – no extra morpheme – for object predication is found in Pitjantjatjara. The predicated object word *ngalyayala* in (12) (Douglas 1964:82; cf. Stassen 1997:69) is identical in grammatical form to the object word *tjitji* used in reference in (13) – that is, both are zero coded, without any overt morpheme coding the propositional act function (Douglas 1964:44; cf. Stassen 1997:69):

- (12) wati ngalyayala
 man **doctor**
 ‘The man is/was a doctor.’
- (13) tjitji yula-ra
 child cry-PRS
 ‘The child is crying.’

The English Copula is not just an extra morpheme found in the predicate nominal construction of English. It also inflects for subject and tense, and may take modal auxiliaries, typical of action predication:

- (14) a. I **am not** a doctor.
 b. He **was** a doctor.
 c. She **might be** a doctor.

The English Predicate Nominal construction thus has some characteristics of the actual IP strategy – inflection of the copula for subject and tense – as well as some features of the semantic IP strategy – indefinite article, adjectival modifiers. We will call this an example of a **hybrid IP strategy (str)**. Hence, we finally describe the English Predicate Nominal construction as employing an overt hybrid IP strategy. Table 2.7 shows how the hybrid IP strategy recruits part of the construction in the object concept’s prototypical information packaging function (reference; in boldface in the table) and part of the construction in the object concept’s actual information packaging function (predication; in boldface italics in the table).

An example of a genuine overt semantic (not hybrid) IP strategy is the Mandarin Chinese Predicate Nominal construction (Randy LaPolla, pers. comm.):

Table 2.7 *The hybrid information packaging strategy for predicate nominals*

Semantic class	Propositional act		
	reference	modification	predication
<i>object</i>	a doctor		(She) might be a doctor
<i>property</i>			
<i>action</i>			(She) might jump

- (15) Xiǎo Lǐ shì hùshī
 Little Li COP nurse
 'Little Li is a nurse.'

The Mandarin Chinese Copula does not display any of the typical morphosyntax of an action predication in the language.

These different strategies may also be illustrated by the nonprototypical combination of reference to actions – that is, complement clause constructions. English provides examples of the zero and overt semantic IP strategies for complement clause constructions in (16a) and (16b), respectively; compare them to the action predication construction in (16c):

- (16) a. ... then decides **he'd much rather take a whole basket**
 b. ... then decides **that he'd much rather take a whole basket**
 c. He'd much rather take a whole basket.

The taking action in (16a), which is an attested example from the Pear Stories narratives (Chafe 1980), is functioning as an argument of the main predicate *decide*. Yet *take* occurs in the same construction as if it were the main predication: it takes adverbial modifiers, a modal auxiliary, a subject and a direct object just like (16c) does. Example (16b), an alternative to example (16a), includes the English Complementizer *that*, an extra morpheme that makes (16b) an example of the overt semantic IP strategy.

Finnish provides an example of an overt actual IP strategy for action reference: example (17) is from Koptjevskaia-Tamm (1993:169, from Hakulinen and Karlsson 1979:395, ex. 198), and (18) is from Karlsson (2018:208):

- (17) vanhempien taloudellisen tuen antaminen
 parents:GEN economic support:GEN give:NML
 'parents' giving of economic support'
- (18) Ihmisen elämä on lyhyt
 man:GEN life:NOM be.3SG.PRES short
 'Man's life is short.'

The giving event in (17) is functioning as the argument of an unnamed predicate. But the expression of the giving event has the structure of a referring phrase. Both of the participants in the action, parents and economic support, are expressed as possessive modifiers of the nominalized form, just like *ihmisen*

Table 2.8 *The hybrid information packaging strategy for action nominalizations*

Semantic class	Propositional act		
	reference	modification	predication
<i>object</i>	her book		
<i>property</i>			
<i>action</i>	her drinking coffee		(She) drinks coffee

‘man’s’ in the referring phrase in (18). The derived action nominal *antaminen* contains an extra morpheme, hence the strategy is overt.

An example of an overt hybrid IP strategy for action reference is the English Gerund construction:

- (19) Her **drinking** coffee surprises me.

Her drinking coffee denotes an event, but it is an argument of the predicate *surprises* – that is, the speaker is referring to the action of drinking. The first part, *her drinking*, looks like a referring expression: it takes a possessive pronoun modifier, just like *her bicycle*. But *coffee* is expressed like the Direct Object of the verb *drink*, as in the action predication *She drinks coffee*. The English Gerund “mixes” the syntax of prototypical referring expressions with the syntax of prototypical predictions, hence it is an example of a hybrid strategy. Finally, the English Gerund has an “extra” morpheme, the *-ing* suffix. Thus, the English Gerund uses an overt hybrid IP strategy.

Forms like *drinking*, in which the overt morpheme is part of the word form and the word form employs a hybrid IP strategy, pose a severe problem for word class approaches. Is the English Gerund a Noun or a Verb? This question cannot be answered, because it is a bit of both. Table 2.8 shows how the hybrid IP strategy recruits parts of the construction for the action concept’s prototypical information packaging (predication; in boldface in the table) and parts of the construction for the action concept’s actual information packaging (reference; in boldface italics in the table).

Example (20) illustrates an example of an overt hybrid IP strategy from Amharic (Koptjevskaja-Tamm 1993:283, from Amsalu Aklilu, pers. comm.):

- (20) yä-pitär yäfəqr-u-n zäfän azzäfafän
 GEN-Peter love-DEF-ACC song sing:NML
 ‘Peter’s singing [i.e. his way of singing] the love song’

The Amharic example is exactly like the English Gerund. The construction has the participant ‘Peter’ in the genitive case, like a possessor of ‘singing’; this is an example of the actual IP strategy. However, the construction also has ‘the love song’ in accusative case, like the object of ‘sing’; this is an instance of the semantic IP strategy. Finally, the word ‘sing’ is in a nominalized form – that

is, overt coding. Hence (20) is an example of the overt hybrid IP strategy. The similarity of the English and Amharic constructions is because the constructions in both languages conform to universals about the expression of reference to actions that will be described in Chapters 15 and 18.

I have gone into some detail about predicate nominal constructions and complement constructions in order to illustrate how and why the form–function mapping in language is so complicated. The complication arises from the competing forces of encoding meaning (semantic class) and information packaging. Certain combinations of semantic class and information packaging are prototypical; they define the prototypical constructions. Other combinations of semantic class and information packaging occur, and indeed are essential for communication. These other, nonprototypical combinations use different combinations of different prototypical constructions to a greater or lesser extent, and sometimes throw in extra morphemes (free or bound) to boot. Different languages employ different combinations, leading to even greater crosslinguistic diversity. And, in fact, speakers of the same language use different options for different combinations of semantic class and information packaging. For this reason, language variation within and across languages is rampant.

2.5 Two Crosslinguistic Universals of Grammatical Strategies

Despite the complexity described in sections 2.3–2.4, there are nevertheless certain broad universal patterns that constrain this complexity, and justify our characterization of certain combinations of semantic class and information packaging function as “prototypical.” They can be summarized in two universals:

- **structural coding:** a lexical class used in a nonprototypical propositional act function will be coded with at least as many morphemes as in its prototypical function.

Structural coding (Croft 2003:ch. 4) refers to the morphemes used to express the meaning – that is, coding strategies. Contrasts in structural coding are usually between zero coding and overt coding – presence or absence of the “extra” morpheme described in section 2.4. The overt morphemes may be free, like the English Copula *be*, or bound, like the English nominalization suffixes in *bright-ness* and *descrip-tion*. Zero coding – or, more generally, coding by fewer morphemes – is characteristic of the constructions used for the more frequent, prototypical members; see Table 2.9. Coding by (more) overt morphemes, in boldface in Table 2.9, is characteristic of the constructions used for the less frequent, nonprototypical members.

Structural coding is fairly straightforward. A subtler contrast between constructions has to do with the possible ways in which the word can inflect,

Table 2.9 *Examples of English constructions for parts of speech and their zero/overt coding*

	Reference	Modification	Predication
Objects	<i>vehicle</i>	<i>vehicle's, vehicul-ar, off/in/etc. the vehicle</i>	<i>be a vehicle</i>
Properties	<i>white-ness</i>	<i>white</i>	<i>be white</i>
Actions	<i>destruc-tion, to destroy, destroy-ing, that ... destroy</i>	<i>destroy-ing, destroy-ed, which/that ... destroy</i>	<i>destroy</i>

or the range of possible dependents the head word can combine with. These possibilities of grammatical behavior are called **behavioral potential**:

- **behavioral potential:** a lexical class used in a nonprototypical propositional act function will also have no more grammatical behavioral potential than in its prototypical function.

Behavioral potential (Croft 2003:ch. 4) is the ability to express other, “cross-cutting” semantic distinctions grammatically. The semantic distinctions can be expressed either by bound morphemes, particularly inflections, or by separate words – for example, definite articles, degree modifiers, or modal auxiliaries.

Behavioral potential is what is described by the IP strategies introduced in section 2.4. In the case of the propositional act constructions, behavioral potential usually applies to the actual IP strategy. Characteristic inflectional behavior for each column in Table 2.9 is given below (these inflectional categories will be described in the relevant chapters; see also the glossary entries for these categories):

Typical behavioral potential for reference: number, gender, case, definiteness; indexation of possessor

Typical behavioral potential for modification: degree (simple, equative, comparative, superlative); indexation of head noun in number, gender, and case

Typical behavioral potential for predication: tense, aspect, modality, polarity (TAMP); indexation of subject (and object) arguments in person, number, and/or gender

For example, predication of an object category may not follow the actual IP strategy completely: it may lack some inflections associated with verbs in the language, as we observed with the Classical Nahuatl Predicate Nominal Construction.

Greater behavioral potential is associated with prototypicality. More generally, prototypical members have lower structural coding but higher behavioral potential. One can think of it in this way: the prototypical members are getting more communicative value (behavioral potential) for less cost (structural coding).

The motivation for these two universals is **token frequency**, or frequency in usage (Greenberg 1966a; Bybee 1985; Croft 2003). The prototypical members are the most common fillers of those information packaging roles. So they tend to be shorter (lower structural coding) and more differentiated grammatically (higher behavioral potential). Conversely, less prototypical members tend to be longer and to be less differentiated.

To sum up: a constructional approach allows us to avoid the problems of the word class based approach to grammatical concepts such as ‘noun,’ ‘verb,’ and ‘adjective’ described in section 1.2. The constructional approach also allows us to characterize the complex mapping between form and meaning, by distinguishing prototypical and nonprototypical combinations of semantic content and information packaging, and by identifying different types of strategies to encode function in grammatical form.

Terms Defined in this Chapter

2.1 Propositional Acts: Semantic Classes and Information Packaging

object concept (*sem*), nonrelational (*sem*), action concept (*sem*), relational (*sem*), dynamic (*sem*), transitory (*sem*), property concept (*sem*), event (*sem*), entity (*sem*), ontology (*sem*), file metaphor, reference (*inf*), referent (*inf*), predication (*inf*), arguments (*inf*), modification (*inf*)

2.2 The Major Propositional Act Constructions and their Structure

2.2.1 Anatomy of a Construction: Wholes and Parts, and Heads and Dependents

complex (*cxn*), element (*cxn*), head (*cxn*), dependent (*cxn*)

2.2.2 Types of Constructions: Phrases and Clauses

referring phrase (*cxn*), admodifier (*cxn*), degree (*sem*), attributive phrase (*cxn*), argument phrase (*cxn*), predicate (*cxn*), clause (*cxn*), complex predicate (*cxn*)

2.2.3 Noun, Verb, and Adjective as Comparative Concepts: Prototypical Constructions

prototypical construction (*cxn*), noun (*cxn*), nominal phrase (*cxn*), adjective (*cxn*), adjectival phrase (*cxn*), verb (*cxn*), verbal clause (*cxn*)

2.2.4 More on the Structure of Propositional Act Constructions

predicate (*cxn*), modifier (*cxn*), referent expression (*cxn*), argument structure construction (*cxn*), referent modification construction (*cxn*)

2.2.5 Nonprototypical Propositional Act Constructions

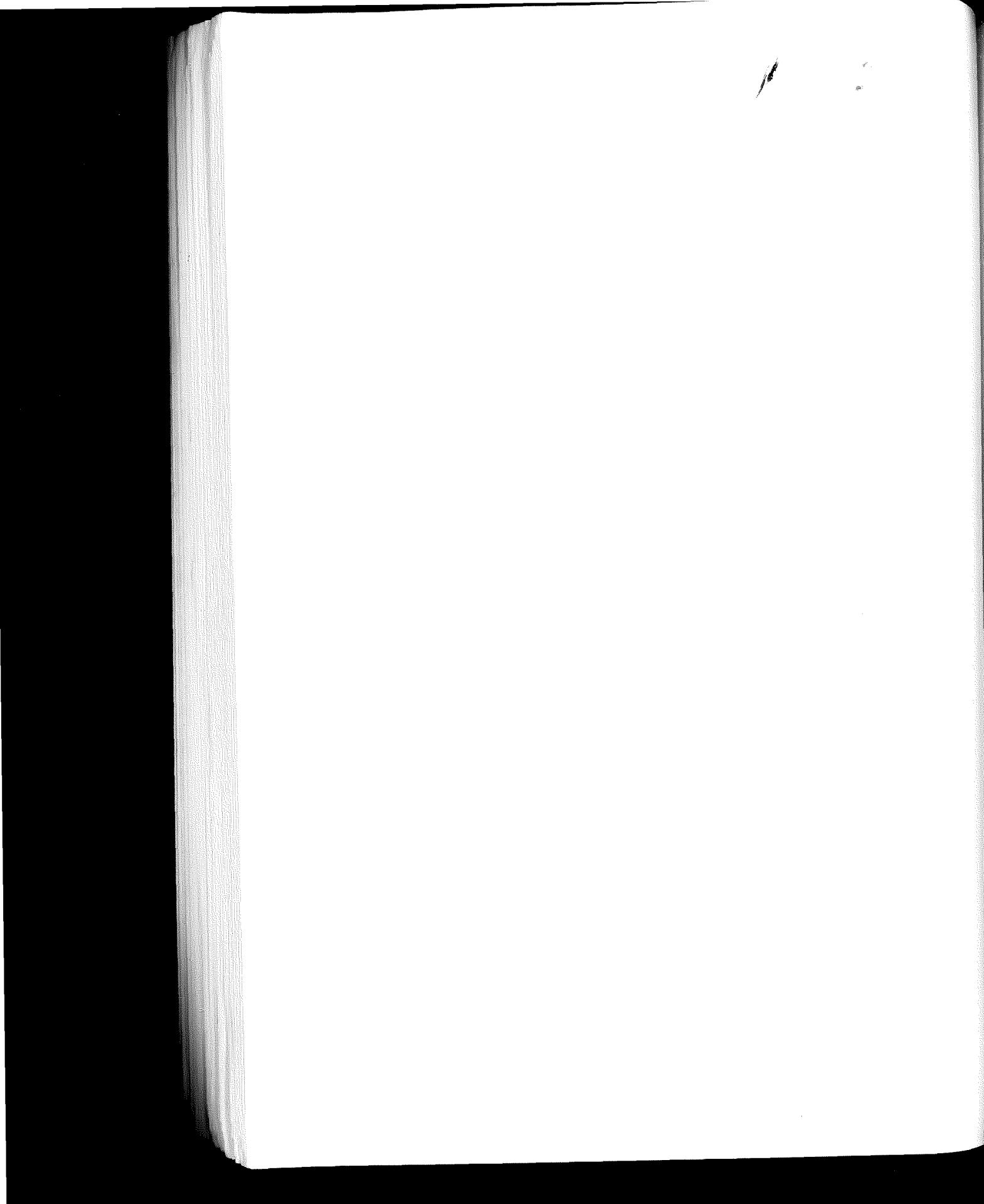
nonprototypical construction (*cxn*), property referring phrase (*cxn*), possessive modification (attributive possession) (*cxn*), predicate nominal (object predication) construction (*cxn*), predicate adjectival (property predication) construction (*cxn*), complement (clause) (*cxn*), relative clause (*cxn*)

*2.3 Three Principles of the Mapping between Form and Function**2.4 Recruitment Strategies for Nonprototypical Constructions*

semantic information packaging (IP) strategy (*str*), actual information packaging strategy (*str*), overt (coding) (*str*), zero (coding) (*str*), hybrid information packaging strategy (*str*)

2.5 Two Crosslinguistic Universals of Grammatical Strategies

structural coding, behavioral potential, token frequency



PART II

Argument Phrase Structure

Reference and Modification



3.1

The Semantics of Referring Phrases: Reference and Referents

Referring phrases are used to pick out and identify a referent, of which something will typically be predicated. Referring phrases are autonomous from an information packaging perspective: predication predicates about something, modification modifies something, but reference just is reference.

The prototypical referring phrase is a noun; recall from section 2.2.3 that a noun is an object word functioning as the head of a referring phrase. Metaphorically, using a referring phrase instructs the listener to open (or reopen) a discourse file or mental file (see section 2.1). The information predicated in each clause will be added to the file. Information modifying a referent helps to identify the referent in some way (see section 3.1.1 for further discussion). Since nouns, even in the narrow definition of noun as a comparative concept, function as the head of referring phrases, such phrases are commonly also called noun phrases.

This chapter will differ from the following chapters on specific morphosyntactic constructions in two ways. First, most of the constructions described in this chapter are one-word constructions, namely nouns or pronouns (with most of the emphasis on pronouns). Hence, there is not much in the way of syntactic combinations to deal with, although we will also examine determiner + noun constructions (see sections 3.1.3 and 3.2).

Second, there will be more on the different semantic and information packaging category distinctions than on the crosslinguistic variation in how those categories are expressed. The main reason for this is that the primary variation across languages in this domain is in how the various categories, particularly the information packaging categories, are co-expressed (section 1.4). There is a tremendous amount of variation in co-expression, which has led to a corresponding proliferation of technical terms. We will be required to introduce terms for the most important distinctions. We will also introduce two methods to capture universal patterns in this variation: scales in sections 3.3.1 and 3.4.2, and semantic maps in section 3.5 (scales will turn out to be special cases of semantic maps).

Table 3.1 *Semantics of reference to individuals, and corresponding referring phrases. The information packaging for the constructions (in the second column) is reference.*

Semantics of reference	Construction
category/type	common noun
individual/token	proper noun
contextual	pronoun

3.1.1 Semantics of Reference

The semantics of referring phrases falls into three broad categories. The three categories are illustrated in the referring phrases in (1) in Russian and in its English translation, and summarized in Table 3.1.

- (1) Ja dal knig-u Ver-e
I gave **book-ACC** **Vera-DAT**
 ‘I gave Vera the book.’

The referring phrases in example (1), in both Russian and its English translation, refer to an **individual** or **token (sem)**: *ja* ‘I,’ *knigu* ‘book [Accusative],’ and *Vere* ‘Vera [Dative]’ refer to a single particular individual entity. However, the three words refer to an individual in different ways due to the semantics of the word.

The words *knigu/book* pick out or refer to an individual by categorizing it as belonging to a semantic category or **type (sem)**. The hearer is expected to identify the referent by virtue of what category the referent belongs to – namely, the semantic category or type of BOOK. Object words used in this way are called **common nouns (cxn)**.

One may also use a common noun to refer directly to a semantic category or type instead of to an individual belonging to the type. This is achieved by **generic reference**, described in section 3.6. However, the overwhelmingly most common use of a common noun is to refer to an individual. A referent expression may also be accompanied by an **article (cxn)**, as in English *the book* – but not Russian *knigu*, since Russian lacks articles. Articles will be introduced in section 3.2 and discussed further in later sections of this chapter.

Reference to an individual may also be accomplished by a linguistic expression whose meaning denotes exactly that individual, such as *Vera* or Russian *Vere* (in its Dative Case form here). An expression used in this way is called a **proper noun (cxn)**. The individuals most likely to have proper nouns are human beings, places, and other individuals that are sufficiently familiar to us; these may include pets or events such as *World War II*. Proper nouns are also called ‘proper names.’ We will call them ‘proper nouns’ because they are a subtype of noun – that is, a word that denotes an object in reference.

Finally, reference to an individual may also be accomplished by a linguistic expression that denotes an individual in terms of their role in the context of

the **speech act situation**, including who the interlocutors are, where they are located, and the shared knowledge of the interlocutors regarding what is being talked about. English *I* and Russian *ja* in example (1) illustrate **contextual (sem)** reference in terms of the role of the interlocutor in the speech act situation: the referent is identified as the speaker (as opposed to the hearer or anyone else). A referent expression used for contextual reference is a **pronoun (cxn)**. Articles that combine with common nouns (and, in some languages, with proper nouns as well; see section 3.3.3) also achieve reference contextually.

There are a variety of pronouns distinguished by the contextual factor that defines their use. Pronouns defined by interlocutor role (speaker, addressee, other) are **personal pronouns (cxn)**. The primary categories of personal pronouns are **first person pronoun (cxn)** (speaker), **second person pronoun (cxn)** (addressee), and **third person pronoun (cxn)** (other). Plurals of first person usually include persons other than the speaker; first person plurals including the addressee are called **inclusive pronouns (cxn)**, and first person plurals excluding the addressee are called **exclusive pronouns (cxn)**. For detailed typological surveys of person as a grammatical and morphological category, see Cysouw (2003) and Siewierska (2004).

Pronouns defined by spatial location relative to the interlocutors, also described as spatial **deixis (sem)**, as in (2), are **demonstrative pronouns (cxn)**:

- (2) I want **those** [pointing].

Demonstrative pronouns are generally described as picking out an individual with respect to their spatial location relative to the interlocutors. Demonstrative pronouns prototypically refer to objects in the physical space of the speech event, relative to the location of the speaker and addressee, as in English **proximal (sem) this** (near the speaker) vs. **distal (sem) that** (away from the speaker). Thus, demonstrative pronouns locate or situate a referent in space. This function of demonstrative pronouns is described as their **deictic (sem)** function. Demonstrative systems can be much richer in their spatial specifications than the English system, although two-term and three-term (proximal, medial, distal) systems are the commonest (Diessel 1999; Imai 2003). For typological surveys of deictic (and other) categories expressed by demonstrative pronouns, see Diessel (1999) and Imai (2003).

Other types of referent expressions are also pronouns. The term ‘pronoun’ is used to cover a range of referent expressions that take the relation to interlocutor rather broadly. We use the term ‘contextual’ to describe this broad range of functions, discussed in more detail in sections 3.2–3.3. Pronouns are probably the most important words in languages, along with verbs (predicated action words). Pronouns make up a large number, if not the majority, of referring phrases; and pronominal forms tend to proliferate in utterances by expanding into new functions (see sections 3.3.3, 3.4.2).

Being a common noun, proper noun, or pronoun is not an inherent property of particular words; the semantics of reference can shift. In some cases, a word that

originates as a proper noun may come to be used to refer to a type. In *There are three Sarahs in my class*, the type is ‘persons named Sarah.’ In *Hand me a kleenex*, the name of a brand of tissue has become conventionalized to refer to tissues as a type. Conversely, a word that functions as a noun may also come to be used as a proper noun or even a pronoun. For example, in the San Francisco Bay Area, *The City* is a proper noun denoting San Francisco and no other city. The modern colloquial French first person pronoun *on* ‘we’ historically is derived from Latin *homo*, a noun meaning ‘man,’ and its meaning changed from a type to a contextual meaning (and split from the French descendant of *homo* ‘man,’ which is *homme*). In all of these cases, one would say that a semantic shift took place.

The semantics of reference is also not an inherent property of the type of referent. As we noted at the beginning of this section, common nouns denote a type or category, but are mostly used to refer to an individual or token. Reference to a speech act participant is not necessarily done with a contextually defined expression (a ‘pronoun’), and a personal pronoun is not necessarily used to refer to a speech act participant. For example, in certain uses the speaker is not referred to by a pronoun, as in (3a); or a first person pronoun is used to refer to something that is not the speaker, as in (3b) (Langacker 1987:131–32):

- (3) a. Don’t lie to **your mother!** [said by mother to child]
 b. That’s **me** in the front row. [said when examining a photograph]

In (3a), the speaker is objectifying herself, as Langacker describes it: conceptualizing herself as a category of person rather than a contextually defined individual. Example (3b) is an instance of ‘displaced reference,’ in which an imaginary or pictorial representation of the speaker is described as if s/he were the speaker.

In Thai, proper nouns (4) or common nouns (5) are frequently used to pick out one of the speech act participants (Iwasaki and Ingkaphirom 2005:57, 59; PRAGPRT = pragmatic particle):

- (4) wanníi ûm lâek sâam mooj khrâj măangkan
 today **Um** finish three o’clock half same
 ‘Today I [lit. proper noun ‘Um’] finish at 3:30, too.’
- (5) yàŋ acaan wâa nîa
 like **teacher** say PRAGPRT
 ‘Like you [lit. ‘teacher’] just said.’

The use of proper nouns and common nouns for reference to speaker and addressee as well as other individuals is part of the system of politeness in reference in Thai and other languages. Typically, the proper nouns or common nouns used for reference to speaker and addressee indicated social status such as kinship relations and occupational roles. This use of certain proper nouns and common nouns is so widespread in languages such as Thai that the commonest forms may be grammaticalizing into pronouns, that is, conventionalized constructions with contextually defined meaning.

3.1.2

Semantic Categories of Nouns and the (Extended) Animacy Hierarchy

The most typical referent in discourse is nonrelational, unchanging, and stable (sections 2.1, 2.4). Hence, object concept words are the prototypical referring expressions. The prototypical referents (object words) mostly fall into the following semantic classes:

1. Humans: *man, woman, boy, girl*
 - 1a. Kin(ship): *mother, brother, daughter*
 - 1b. Social role: *chief, teacher, slave*
2. Animals: *dog, cow, bird*
3. Plants: *tree, bush, weed, herb*; plants are not usually treated like animals grammatically, even though they are animate
4. Animal and plant products: *leather, meat, rice, apple, bread*
5. Artifacts: *hat, hammer, mat*
6. Body parts (human, animal, plant): *face, arm, fur, tail, branch, leaf, seed*
7. Natural (inanimate) objects/substances: *water, stone, earth, fire*
8. Places: *mountain, ocean, river, island; village, city, path, house*

Nouns that fall into one of the semantic classes in 1–8 are generally called ‘nouns’ – for example ‘body part noun,’ analogous to ‘property word’ for words denoting property concepts. The different semantic subclasses of nouns tend to occur in different types of constructions. For this reason, grammatical descriptions should make reference to whether the classes of nouns in 1–8 occur in certain constructions, not just to ‘nouns’ in general.

In fact, a simplified ranking of the semantic classes in 1–8 – **human (sem)** (class 1), **(nonhuman) animate (sem)** (class 2), and **inanimate (sem)** (classes 3–8) – are grammatically relevant in so many constructions that the ranking has been given a name, the **Animacy Hierarchy**. Although the Animacy Hierarchy, strictly speaking, is a ranking in terms of semantic class, it is generally believed that the ranking is ultimately motivated by a discourse (information packaging) factor, namely the **salience (inf)** of particular types of individuals to human beings. Other things being equal, people are more interested in other people, somewhat less so in animate objects, and less still in inanimate objects.

Speaker and addressee, usually referred to using first and second person pronouns (section 3.1.1) are more salient than other humans, and other humans referred to by third person pronouns or proper nouns are more salient than those humans who require common nouns for reference. And, as will be seen in later chapters, all of these distinctions play a grammatical role in constructions where referent salience is relevant, and the distinctions have been collapsed into a single **Extended Animacy Hierarchy** (Croft 2003:130), also called the Empathy or Referentiality Hierarchy:

Pronoun < Proper Noun < Common Noun

or more precisely:

first/second person pronoun < third person pronoun < (human proper noun) <
human common noun < animate common noun < inanimate common noun

A simple grammatical example of the relevance of the Extended Animacy Hierarchy to the grammar of referring expressions is the distribution of distinctions of grammatical number – that is, singular vs. plural forms of nouns and pronouns (Croft 2003:128–30; see Corbett 2000 for extended discussion of the always more complicated reality). Many languages do not inflect all nouns or pronouns for number, or, if they do, there are fewer number distinctions for some nouns/pronouns than others. The division of nouns and pronouns by inflection for number conforms to the Extended Animacy Hierarchy:

- *first/second vs. third person*: Asmat distinguishes *no* ‘I’ and *o* ‘you [singular]’ from *na* ‘we’ and *ca* ‘you [plural],’ but has a single form *a* for third person singular and plural (Voorhoeve 1965:143; cf. Corbett 2000:64).
- *pronoun vs. common noun*: Usan distinguishes *wo* ‘he/she’ from *wuri* ‘they,’ but a common noun such as *qâb-turin* ‘Pinon imperial pigeon(s)’ is used for singular and plural (Reesink 1980:53, 48).
- *pronoun and human noun vs. nonhuman noun*: Tiwi distinguishes *wuualaka* ‘young girl’ from *wawuualawi* ‘young girls,’ but *waliwalini* ‘ant(s)’ is used for singular and plural (Osborne 1974:52–53).
- *pronoun and animate noun vs. inanimate noun*: Kharia distinguishes *bilo* ‘cat’ from *biloiki* ‘cats’ but *soreŋ* ‘stone(s)’ is used for singular and plural (Biligiri 1965:36, 131).

3.1.3 Combined Means of Reference, and the Ontological Categories

In section 3.1.1, we assumed that referent expressions refer either via types/categories (common nouns), via individuals (proper nouns), or contextually (pronouns). But it is possible, indeed common, for a referring phrase to refer via more than one semantic type at once. For example, *Uncle John* refers to an individual with both a kinship category (uncle) and a proper noun (John). Titles can work the same way (*Professor Greenberg*).

The complex referring phrase that interests us most here is when a contextual expression combines with a type expression (a common noun). Examples of this combination are *this chair*, *that dog*. A deictic contextual expression, such as *This* in *This is a collared lizard*, is called a **demonstrative pronoun (cxn)** when it stands alone (section 3.1.1). However, when a deictic contextual expression is combined with a common noun, such as *This* in *This machine drives me crazy!*, it is usually

Table 3.2 *Ontological types for different kinds of English pronouns*

Proximal Demonstrative	Distal Demonstrative	Interrogative	"Indefinite"	"Negative indefinite"	Ontological Type
<i>this</i>	<i>that</i>	<i>who?</i>	<i>somebody, someone</i>	<i>nobody, no one</i>	person
		<i>what? where? when? how?</i>	<i>something somewhere sometime somehow</i>	<i>nothing nowhere never no way</i>	thing place time manner
<i>here</i>	<i>there</i>				
<i>now</i>	<i>then</i>				
<i>like this</i>	<i>like that</i>				

given another name indicating that it is a modifier of the common noun (*machine* in this case); the name we will use is a **demonstrative attributive (cxn)**.

A question that arises with this type of referring phrase is: which is the head, the demonstrative or the noun? Both denote the same thing as the entire referring phrase: namely, the referent. However, the functional definition of a head given in section 2.2.2 is ‘the **most contentful** word that most closely denotes the same function as the phrase (or clause) as a whole.’ In *this chair*, the definition indicates that *chair* is the head. (It is not so clear which is the head with the common noun – proper noun combinations given in the first paragraph in this section.)

The contrast between demonstrative pronoun and demonstrative attributive should not be overstated. A demonstrative attributive combines with a common noun to specify both the location of the referent with respect to the speaker (deixis) and the category or type of the referent. But demonstrative pronouns also usually specify the category of the referent, albeit at a more general level. The same is true for other types of pronouns that will be discussed later in this chapter, as seen in Table 3.2.

The semantic categories that distinguish different demonstrative pronouns expressing the proximal/distal deictic contrast are also found with interrogative pronouns and other types of pronouns, including “indefinite” and “negative” pronouns (the scare quotes indicate that these categories are not comparative concepts, as will be seen below, but they are different types of pronouns). The categories illustrated in Table 3.2 are listed in the final column. The first three categories are found in section 3.1.2 as categories of the Animacy Hierarchy, albeit with the nonhuman categories other than places lumped together as ‘things’. But the categories in Table 3.2 go beyond the Animacy Hierarchy to include time and manner, and in some languages there are forms for property (*which?*), quantity (*how much/many?*), and some other very general semantic categories. Categories at this level of generality are called **ontological categories (sem)**; the term is used by Haspelmath (1997:21–31) for pronouns.

In other words, demonstrative and other pronouns refer not only contextually but via semantic categories, albeit very general ones. And in some cases, demonstrative and other pronouns are derived, at least etymologically, from a contextual morpheme combined with a very general noun (*body, thing, time*)

or, in the case of the “indefinite” and “negative” pronouns, from interrogative pronouns. Haspelmath suggests that “indefinite” pronouns like those in Table 3.2 evolved from a combination of an indefinite determiner and general nouns (Haspelmath 1997:27–29).

Himmelmann (1996) notes that, in his colloquial corpora from English, Ik, Tagalog, and Indonesian, the demonstrative attributive is much more common than the demonstrative pronoun (Himmelmann 1996:215). It is likely, then, that demonstrative pronouns originated as demonstrative attributives in combination with general nouns. Himmelmann notes that the demonstrative pronoun often has additional structural coding compared to the demonstrative attributive (Himmelmann 1996:214), illustrated below for Ik (Himmelmann 1996, 215, from Serzisko 1992:187, 198):

	<i>attributive</i>	<i>pronoun</i>
‘this’	na	da-na
‘that’	ke	ke-da

It is likely that the overt structural coding of the demonstrative pronoun is etymologically a general noun, in some – perhaps many – cases.

Having surveyed the common semantic ways in which words are used to refer to referents – type, individual, contextual, and various combinations – we turn to the information status subtypes of the information packaging function of reference.

3.2 The Information Status of Referring Phrases: Pronouns and Articles

It was noted in section 3.1.1 that common nouns, although their meaning denotes a type, are overwhelmingly used to refer to individuals in ordinary conversation. (In academic writing such as this book, most of the discussion is about categories or types in the abstract, so most common noun usage is generic.) In that respect, common nouns are like proper nouns and pronouns: most of the time, all such nouns refer to individuals.

Common noun phrases pick out an individual referent (or a specific set of referents) by using a word denoting a semantic type. For reference to succeed, the hearer must be able to set up a discourse file for the particular instance of the type, and identify it in the ongoing discourse, including identifying instances/tokens already familiar to the speaker and hearer. The general process of going from type to token will be called **particularizing** (Croft 1990b, 2007a; see section 4.1.1 for verbalization processes that are used for particularizing). For the hearer, issues may arise as to which individual the speaker intends to refer to: Is it an individual already mentioned in the discourse? An individual known to the hearer? An individual unknown to the hearer? A hypothetical or imaginary individual? Or actually just reference to the type?

Table 3.3 *Contextual reference with pronouns and in combination with common nouns*

Pronoun type	Type combining with common noun
demonstrative pronoun (<i>these</i>)	demonstrative attributive (<i>these books</i>)
anaphoric pronoun (<i>he, she, it, they</i>)	anaphoric or definite article (<i>the books</i>)
“indefinite” pronoun (<i>something, anything</i>)	indefinite article (<i>a book, any book</i>)

Referring phrases can be divided according to how they answer those questions. The answer to these questions is what is usually called the **information status (inf)** of the referent (not to be confused with information packaging). The information status of a referent in discourse is a characterization of how the interlocutors identify an individual as the intended referent of a referring phrase – more precisely, how the hearer identifies the referent intended by the speaker. Information status represents here a subdivision of the information packaging function of reference: a more fine-grained means to pick out the referent.

The main problem for crosslinguistic analysis is that information status function is actually a (roughly) 1-dimensional continuum of possible information statuses, ranging from completely and easily identifiable referent, to less and less easily identifiable referents – including even hypothetical referents – to just reference to the type. Languages do not have distinct forms for all the information statuses. However, linguistic forms divide the continuum of information statuses in different ways in different languages, and even in the same language. Linguists have come up with an equally bewildering set of terms for different information statuses, representing different ways in which language-specific forms have divided the continuum of information statuses. In order to bring some order to this chaos, we will use a specific set of terms for the categories most commonly distinguished by language-specific forms. We will also present a framework for the crosslinguistic analysis of such variation in language-specific forms, the semantic map model, in discussing the “lower” end of the information status continuum: so-called indefiniteness (see section 3.5).

Before introducing the information status continuum, we must return to the issue raised in section 3.1.3 – namely, pronominal vs. attributive expression of contextual reference. In section 3.1.3, it was observed that pronouns represent contextual reference more or less “by itself;” while attributive demonstratives represent contextual reference combined with type reference using a common noun. The same is true of forms that express information status (some of which, as will be seen in section 3.3.2, are etymologically derived from demonstratives); see Table 3.3 (the information status categories of ‘anaphoric,’ ‘definite,’ and ‘indefinite’ are discussed below and in later sections of this chapter).

As can be seen from the terminology in Table 3.3, there are a variety of terms used for the form that combines with a common noun. The term ‘article’ is used to describe contextual forms combining with common nouns that express only information status (see section 3.1.1). Demonstrative attributives express

Table 3.4 *Information statuses and the constructions for articles and pronouns.* The full name for each construction is 'X article / X pronoun,' where 'X' is a term in the column below 'Article' or 'Pronoun.' The full name for the information packaging categories is 'X referent,' where X is a term in the column below 'Referent categories.'

Constructions			Information packaging: categories and properties			
Article	Pronoun	Referent categories	Information properties			
			Referent status	Identifiability		
	anaphoric, zero*	active	ACCESSIBLE IN DISCOURSE	IDENTITY KNOWN (to speaker and hearer) section 3.3		
anaphoric (definite)		semi-active				
nonanaphoric definite		inactive	ACCESSIBLE IN SHARED KNOWLEDGE	IDENTITY UNKNOWN (to either speaker or hearer) section 3.4		
		inferrable				
pragmatically specific (indefinite)		pragmatically specific	REAL REFERENT	TYPE IDENTIFIABLE section 3.5		
pragmatically nonspecific (but semantically specific) (indefinite); interrogative		semantically specific				
(semantically) nonspecific (indefinite) [various kinds; see columns to the right]		nonspecific, of various kinds: irrealis (context)	NONREAL "REFERENT"	TYPE IDENTIFIABLE section 3.5		
		question (context)				
		conditional (context)				
		indirect negation (context)				
		comparative (context)				
		direct negation (context)				
generic		free choice (context)	TYPE (not token/individual) section 3.6	TYPE (not token/individual) section 3.6		
		generic				

* anaphoric and zero pronouns are two different strategies for an active referent, along with indexation; see section 3.3.2.

information status, but they also encode location relative to the speaker and/or hearer. A general term that includes demonstrative attributives and articles is **determiner (cxn)**. The constructions we will be focusing on in the rest of this chapter will be pronouns and articles.

Table 3.4 presents an overview of the information statuses that will be presented in this chapter, along with the constructions that express those information statuses. We will use the terms in Table 3.4 for both the constructions and information statuses, although we will make reference to other terms that have been used for these categories in the linguistic literature in the following sections. Here we will give an overview of the terrain before delving into the categories in greater detail, and the crosslinguistic variation in their morphosyntactic expression.

The first two columns are the categories of constructions defined by information status. The constructions fall into two types, articles and pronouns, as described in Table 3.3 above. The parenthesized parts of the names of the constructions represent longer, more explicit names; we will generally use the shorter, unparenthesized part of the full name for the construction in question.

The middle two columns list the corresponding categories of referents defined by the information status. There are two columns simply because, in some cases, multiple referent categories are subsumed under a single information status construction (either article or pronoun).

The last two columns, titled 'Information properties,' are generalizations over the information status categories in the middle two columns. The information properties divide the information status continuum according to the questions posed at the beginning of this section. Referent status refers to the status of the referent in the discourse context – that is, accessibility (the upper rows); or the referent's status in reality in general (the lower rows). **Identifiability (inf)** refers to whether or not the identity of the individual referent is known to the speaker and/or hearer (all rows except the last), or whether there is reference only to the type, not an individual of the type (last row).

The "upper" end of the information status continuum, defined by the first heavy line below the table headings, pertains to referents that have been established in the current discourse situation and hence their identity is known to both speaker and hearer. The next section of the continuum pertains to referents whose identity is already known to speaker and hearer, but they have not been established in the current discourse situation. This basic distinction divides a continuum that has generally been called 'accessibility'; we will discuss accessibility and how it is expressed in section 3.3. The demonstrative forms, pronoun and attributive, don't really fit in the continuum, but they are the primary historical source of forms used for accessibility statuses, as will be described in section 3.3.2.

The next section of the continuum leaves the realm of referents known to both speaker and hearer and pertains to real-world referents that are not known to both. Generally, these referents are not known to the hearer, although they are typically known to the speaker who utters the referring phrase. In case of the interrogative, of course, it is the other way around: the identity of the referent is unknown to the speaker, who is asking whether the hearer knows their identity (*Who did it?*). The hearer may or may not know the referent's identity – that is, he may or may not be able to answer the speaker's question. The interrogative information status doesn't really fit on the continuum, though it is included in Table 3.4; but interrogative pronouns are a major historical source for forms used in the 'indefinite' section of the continuum (see section 3.5 for further discussion). This section of the information status continuum is usually discussed in terms of identifiability, described in section 3.4. However, identifiability of a referent actually applies to the entire scale (as indicated by the heading of the last column), from accessible referents known to the interlocutors down to nonreal referents identifiable only by their type.

The next section of the continuum leaves the realm of referents in the real world, and pertains to referents postulated in various nonreal semantic contexts, including hypothetical situations and negated situations (this is why the term ‘context’ is added in parentheses for the various categories in this section of the continuum). The various nonreal semantic contexts do not form a simple continuum in the way that the upper sections of the continuum do. A somewhat more complex model, the semantic map model, is required to capture the crosslinguistic patterns of grammatical expression in this section. The semantic map of this section of the information status continuum is described in section 3.5.

Two widely used terms for pronoun or article constructions pertain to the distinction between identifiable and not identifiable referents. **Definite pronouns/articles (cxn)** are forms that cover the ‘identity known’ functions on the information status continuum. **Indefinite pronouns/articles (cxn)** are forms that cover the ‘identity unknown’ and ‘type identifiable’ functions on the information status continuum (for the use of articles in type reference, see section 3.6). These terms are in wide use because the English articles *the* and *a* divide the information status continuum in this way. However, many other languages do not divide the information status continuum in this way; instead, other distinctions on the information status continuum are more important. We will use the terms ‘definite’ and ‘indefinite’ as defined above, but with the warning that this is not the only – or, perhaps, even the most important – distinction on the information status continuum (see sections 3.4–3.5).

Finally, there is also the possibility of referring to a type or category itself, rather than an individual referent that is a member of the category. This is generic reference, and will be briefly described in section 3.6.

As mentioned above, the main issue for language description, analysis, and crosslinguistic comparison is that languages vary so much in how they express information statuses. The categories in Table 3.4 do not capture all of the distinctions in the information status continuum that languages make (Dryer 2014). But no language has distinct forms for every single information status category in Table 3.4, let alone the finer-grained distinctions sometimes made. Instead, languages use a single form for groups of categories in the continuum. But languages group the information status categories in the continuum in different ways. Linguists have tried to capture these more general categories; this is one reason why there are so many different terms in this domain of grammar. But no one set of general categories captures all of the crosslinguistic variation in pronouns and articles.

3.3 Information Status: Identity Known to Speaker and Hearer

The term ‘definite’ applied to referring phrases – pronouns, and articles combined with nouns – is associated with the top end of the information status continuum in Table 3.4, where the identity of the referent is already known

to both speaker and hearer. In this section, we will describe the information status of the referents of these forms in more detail, including the strategies for expressing them and the common patterns of grammaticalization among these forms.

3.3.1 Accessibility and the Accessibility Scale

Accessibility (*inf*), also known as ‘activation,’ refers to information status with respect to a referent that is already in the hearer’s knowledge – that is, for which the hearer already has a discourse file. Accessibility pertains to how easily the referent can be accessed by the hearer, in the speaker’s estimation. Accessibility is essentially a continuum, and, as will be seen below, many different types of referring phrases may be ranked in terms of degree of accessibility of their referents. Having said that, it is common to distinguish three levels of accessibility: active, semi-active, and inactive. The terms we will use below are from Chafe (1987; see also Lambrecht 1994).

An **active (*inf*)** referent (also called ‘in focus’) is a referent whose discourse file has been opened and is at the center of the hearer’s consciousness. This is the single most accessible referent at the current point in the discourse. In English, an active referent is typically expressed using an (unstressed) **anaphoric pronoun (*cxn*)**, such as *they* and *him* in the passage below, from the Pear Stories narratives (Chafe 1980); or **zero (*cxn*) anaphora** (also called ‘null anaphora’ or ‘definite null instantiation [DNI]’; Fillmore 1986; Lambrecht and Lemoine 2005), symbolized by Ø in the passage:

- 3.24 [.75] [. . U--m [.5]] there’s some kids,
- 3.25 there are three other boys,
- 3.26 . . who are there.
- 3.27 [.35] **They** help **him**,
- 3.28 . . get straightened out,
- 3.29 . . Ø put the pears back,
- 3.30 [.55] in the basket,
- 3.31 Ø straighten out his bicycle,
- 3.32 and so forth.

In this passage, both the boy on the bicycle and the set of three boys are at the center of the hearer’s consciousness, because they are highly salient: the boy has been the central protagonist for several scenes at this point, and the set of three boys has just been introduced in the narrative.

The term ‘anaphoric’ is normally defined as a form used when the referent has been explicitly mentioned in the discourse. However, an anaphoric pronoun may be used even when the referent has not been previously mentioned. The following (invented) French examples are from Tasmowski-de Ryck and Verluyten (1982:328):

- (6) (John is trying to stuff a large table [*la table*, Feminine] in the trunk of his car; Mary says:) faire entrer dans
 Tu n'arriveras jamais à la/*le faire entrer dans
 you NEG'manage: FUT never to it [Fem.]/*it [Masc.] make enter in
 la voiture
 the car
 'You will never manage to get it into the car.'
- (7) (same situation, but with a desk (*le bureau*, Masculine))
 Tu n'arriveras jamais à le/*la faire entrer dans
 you NEG'manage: FUT never to it [Masc.]/*it [Fem.] make enter in
 la voiture
 the car
 'You will never manage to get it into the car.'

If the referent is already maximally salient in the nonlinguistic discourse context, then an anaphoric pronoun may be used in French and in other languages. The defining feature is maximal accessibility in the discourse context. Unfortunately, the widely used term 'anaphoric,' which etymologically denotes reference to a previously mentioned referent, does not accurately describe the situation of use in (6)–(7), which is sometimes called 'exophoric.' However, we will retain the widely used term. It is true that by far the most frequent situation in which a referent is maximally accessible is when it has been referred to recently in the discourse.

A **semi-active (inf)** referent (also called 'accessible') is a referent whose discourse file has been activated (i.e. it is in short-term memory), but is not at the center of the hearer's consciousness at the current point in the discourse. A semi-active referent is expressed using a referring phrase with an **anaphoric (definite) article (cxn)**, as in the Pear Stories passage below:

- 3,2 [2.05 . . u--h [1.1]] the movie is basically about uh [.2]
 u--m [.85] a number of [.45] individuals,
 3,3 [.6] uh a guy who's picking pears,
 3,4 [2.1 [1.0] u--m [.6]] and a kid on a bicycle.
 3,5 Basically those are the two . . protagonists in this.
 3,6 [2.8 [1.05] And . . um [.6]] **the guy who is picking pears**,
 3,7 [3.15 um [2.35] um [.35]] picks **the pears** and puts them
 in a [.45] in um [.4] these baskets that he has.

In this passage, the pearpicker referred to in line 3,6 is not in the center of the hearer's consciousness because the pearpicker was mentioned three lines before, and another referent, the kid on the bicycle, entered into the hearer's consciousness in the intervening lines. Hence the pearpicker is only semi-active at this point in the narrative. Likewise, the pears in line 3,7 are not at the center of the hearer's consciousness because the pearpicker is more prominent at this point.

An **inactive (inf)** referent is one where the speaker and hearer have a discourse file for the referent (also described as: the referent is in the speaker's

long-term memory) but the referent generally has not been activated in the discourse, at least not recently. An inactive referent is expressed using a referring phrase with a **nonanaphoric definite article (cxn)**, as in (8):

- (8) I saw **the mayor** in Walmart yesterday. [mayor not previously mentioned]

In example (8), a discourse file already exists for it in the hearer's mind, even though it has not been mentioned in the current discourse. Inactive referents thus differ from both active and semi-active referents in that they have not been previously established in the discourse.

Active and semi-active referents are distinguished in grammatical expression in that active referents are expressed by pronouns while semi-active referents are expressed by articles (combined with nouns). The term 'anaphoric' is used for both the pronoun and for the article; 'anaphoric' means that the referent has already been referred to (except in the rare situations illustrated in (6)–(7)). The term 'definite' is also used for an article that covers both semi-active and inactive referents, like English *the*.

Hence, semi-active referents are expressed with an anaphoric definite article construction, and inactive referents with a nonanaphoric definite article construction (Dryer 2014). In fact, Dryer observes that, crosslinguistically, an article form used for only semi-active referents is more common than the English-style article used for both semi-active and inactive referents. We will shorten Dryer's term for the semi-active construction to 'anaphoric article,' but continue to use 'nonanaphoric definite article' for the inactive construction, since 'definite article' is the term used when semi-active and active information statuses are co-expressed.

Table 3.4 includes another category in which the referent seems to be known but has not been established in the discourse. These are called **inferrable (inf)** referents (Prince 1992). An inferrable referent is one whose identity can be inferred via the type described by the referring phrase:

- (9) Please bring **the bowl of noodles on the kitchen counter** to the dining table.
[spoken when there is exactly one bowl of noodles in the relevant place]

Example (9) is an instance of what Prince calls a containing inferrable: the information for identifying the referent is contained in the referring phrase *bowl of noodles on the kitchen counter*, even if the hearer hasn't yet seen the bowl of noodles. Prince also identifies a category of noncontaining inferrable, in which the information for identifying the referent is outside the referring phrase:

- (10) She tried to open the jar but **the lid** wouldn't budge.

The identity of the referent of *the lid* is inferrable because of prior activation of the referent of *the jar*, combined with shared world knowledge that jars generally have exactly one lid.

Inferrible referents are often categorized together with inactive referents, as in *the mayor* in example (8) or entities such as *the sun* and *the moon*. In fact, inactive referents are, at most, subtly different from inferrible referents such as the one in (9). The description (mayor, sun, moon) plus knowledge of discourse context – we are in a particular city, we are situated on a planet with a single moon circling a single sun and we are not astronomers looking at other planets and solar systems – renders the referent identifiable, not just the fact that the referents are familiar to both speaker and hearer. Dryer (2014) groups inactive and inferrible referents together as the information status expressed by nonanaphoric definite articles.

Dryer gives examples of even more fine-grained distinctions among articles (Dryer 2014:e240). For example, some languages distinguish between anaphoric definites referring to a recently mentioned referent and a more distantly mentioned referent, for example Ma'di (Blackings and Fabb 2003). In Yapese, the article used for anaphoric definites can be extended to referents that have not been referred to previously but are highly accessible in the context, i.e. the noncontaining inferrible category above (Dryer 2014:e240, citing Ballantyne 2005).

Dryer's examples indicate that accessibility is not made up of a small number of discrete information statuses. Givón (1983) and Ariel (1988, 1990) argue that, in fact, accessibility is a scale with many degrees, not just the three (or four, including inferribles) presented above. This is the position taken here as well, as implied by the term 'information status continuum.'

A widely used set of operational criteria related to accessibility was devised by Givón (1983), who calls accessibility 'topic continuity.' Givón proposes three measures for the topicality of a referent (Givón 1983:13–15), all of which can be applied to texts. The first, referential distance, measures the number of clauses since the referent denoted by the referring expression has been mentioned. The second, potential interference, measures how many competing referents have been mentioned in prior clauses. Both referential distance and potential interference measure accessibility: a recently mentioned referent lacking recently mentioned competing referents will be very high in accessibility. Givón also uses a third measure, topic persistence, a measure of how many times a referent is mentioned in subsequent discourse. This measure indicates the importance of the topic in the discourse, rather than its accessibility at a certain point in the discourse (see section 3.4.1).

Givón and Ariel argue that a very broad and robust typological generalization underlies the system of strategies for referring phrases, treating the range of different types of referring phrases as a system. One finds a scale of different types of referring phrases used for different degrees of accessibility. A language may use a subset of referring phrases in a particular construction, and the specific degree of accessibility for a given type of referring phrase is not equivalent from language to language. But they all conform to the following universal:

- (11) Shorter expressions (those higher on the scale) are used for higher accessibility referents than longer expressions.

Thanks to the universal in (11), the strategies for referring expressions are ranked on an **Accessibility Scale**. The version of the scale given below does not list every type of referring expression listed by Givón and Ariel, but includes all of the common types of referring expressions described in this chapter (see Ariel 1990:73–74 for different versions of the Accessibility Scale):

Accessibility Scale [higher > lower accessibility of subtypes of referring phrases]

<i>Referring phrase</i>	<i>Morphosyntactic expression</i>
• zero anaphora	<i>zero</i>
• indexation on predicates	<i>affix</i>
• anaphoric (third person) pronouns: <i>he, she, they</i> , etc.	<i>pronoun</i>
• first/second person pronouns	<i>pronoun</i>
• demonstrative pronouns: <i>this, that</i> , etc.	<i>pronoun</i>
• demonstrative attributive + noun: <i>those pears</i>	<i>determiner + common noun</i>
• definite noun phrase: <i>the mayor</i>	<i>determiner + common noun</i>
• proper nouns: <i>Vanessa, Ahmed</i>	<i>proper noun</i>

One salient feature of the Accessibility Scale is that the higher accessibility constructions are all pronouns, while the lower accessibility constructions are common nouns accompanied by an article or a demonstrative attributive. We will return to this point in section 3.3.3.

3.3.2 Referring Phrase Constructions at the Upper End of the Accessibility Scale

The top end of the Accessibility Scale is associated with an active referent – that is, the referent that is the center of attention at the current point of the discourse. The top three referring phrase types are all associated with an active referent: zero, indexation, and anaphoric (third person) pronouns.

Indexation (str) is a grammaticalized form that refers to a referent in either a predicate–argument relation or a modifier–referent relation. This description is something of a simplification; indexation will be discussed in greater detail in the next chapter (see section 4.4). Here, we focus on indexation of referents (arguments) in the predicate–argument relation, with forms expressing the category of person, as personal pronouns do. A K'ichee' (Quiché) example of a person index is found in (12) (Mondloch 1978:27):

- (12) chewe'k k-ē-bē lē achixab pa tinamit
 tomorrow IPFV-3PL.ABS-go the man:PL to town
 'Tomorrow, the men go to town.'

The traditional analysis of the index form is “agreement”: the index “agrees” with the referring expression *lē achixab* ‘the men.’ The referring phrase is described as the controller and the “agreeing” form is described as the target (Corbett 2006:4). However, in many cases, the referring phrase that the index is supposedly “agreeing” with simply is not there, as in example (13) in K'ichee' (Mondloch 1978:78):

- (13) c-Ø-u-c'ulu-bā (lē r-alc'u'äl)
 IPFV-3SG.ABS-3SG.ERG-marry.off-TR (the 3SG.POSS-child)
 '(He) marries (his child) off.'

Occurrence of the index on the predicate without an accompanying referring phrase is, of course, possible only for active referents.

In other words, active referents may be expressed by zero anaphora, by an index, or by an anaphoric pronoun. Since zero, index, and anaphoric pronoun are alternative morphosyntactic means to express an active referent, then they are alternative strategies for active referents. However, most languages use two, or all three, of zero, index, or anaphoric pronoun, and, if so, they are associated with finer-grained categories of accessibility, and they are ranked as in the Accessibility Scale: zero is for the highest accessibility referents, indexes for the next highest accessibility referents, then anaphoric (third person) pronouns for the next-highest accessibility referents.

Even if a language uses more than one of zero, index, or anaphoric pronoun, typically one of these strategies is preferred for referents (or at least the subject referent) of the basic clause construction in the language. English, for example, is generally described as a language that uses the unstressed pronoun strategy, as with *he* in line 4,32 in example (14) from the Pear Stories. English also allows zero (indexation in English has almost disappeared) as in line 4,33 of (14), indicated by Ø. However, in English, zero expression is only found with certain constructions, as in (14) and (15) (see section 16.2):

- (14) 4,32 **he** approached a girl on a bicycle.
 4,33 And Ø looked up at the girl and his bike got caught on the rock.
- (15) 1,99 and one kid takes the rock that he tripped on Ø and he throws it off
 to the side of the roa—d,

In (14), the subject of the second clause (and following clauses) in a coordination construction may be zero. In (15), the argument of the relative clause verb *tripped* following the preposition *on* is the noun modified by the relative clause (*the rock*), so the reference to the head noun is zero in the relative clause. The constructions ensure that the referent expressed by zero is highly active: in (14), *he* is the subject of the first coordinated clause; and in (15), the rock is referred to by the referent expression that the relative clause modifies. Since zero is only found with specialized constructions, English is usually classified as basically using an anaphoric pronoun strategy for active referents.

Languages can be compared as to how active referents are expressed in the basic simple clause construction. A crosslinguistic study (Gilligan 1987) revealed the following distribution of languages across the three strategies for subject phrases in a stratified sample of 100 languages:

Anaphoric pronoun	10%
Index	65%
Zero	25%

English is an example of a language using an anaphoric pronoun, a crosslinguistically rare strategy. K'ichee' is an example of a language using an index, as in (13), by far the most common strategy according to Gilligan, at least for subject phrases. An example of a language that uses zero for active referents in the basic clause construction is Rennellese; example (16) is from Elbert (1988:27):

- (16) noko tua te hau, o balubalu, o
 PST fell ART.SG.SPEC [tree name] RES.CNJ peel RES.CNJ
 hakatu'u
 make_stand
 '[They] cut the tree down, [they] stripped [the bark], [they] stood [it] up.'

Well-known languages similar to Rennellese include Chinese, Japanese, and Korean.

Moving down the Accessibility Scale, first and second person pronouns describe highly accessible referents via the nonlinguistic discourse context: the speaker and hearer are of course present in the discourse, and often are being talked about in the discourse. The last pronoun construction on the Accessibility Scale is a demonstrative pronoun, which straddles the borderline between semi-active and inactive.

3.3.3 The Grammaticalization of Definite Constructions from Demonstrative Constructions

At the end of section 3.3.1, it was observed that the higher accessibility constructions are all pronouns, while the lower accessibility constructions are common nouns accompanied by an article or a demonstrative attributive. This split occurs with demonstratives: demonstrative pronouns are the lowest pronoun type on the Accessibility Scale, and demonstrative attributives plus common noun are the highest common noun construction on the Accessibility Scale. This is not an accident. Demonstratives start to lose their deictic semantic content and come to acquire pure information status functions. Demonstrative pronouns grammaticalize into anaphoric pronouns and indexes. That is, demonstrative pronouns diachronically extend up from the middle of the Accessibility Scale. Demonstrative attributives, in contrast, grammaticalize into anaphoric and then definite articles (and beyond; see section 3.4.2). That is, demonstrative attributives diachronically extend down from the middle of the Accessibility Scale.

How does this happen? We can see the process of extension from the deictic function to accessibility through a classification of intermediate uses of demonstrative forms by Himmelmann (1996). Himmelmann proposes a finer-grained set of contexts for demonstrative forms. Himmelmann's examples consist chiefly of demonstrative attributives rather than demonstrative pronouns, so only the former are illustrated here, from the English Pear Stories narratives.

Himmelmann describes a ‘situational’ use of demonstrative forms, to identify a referent spatially in the speech act situation. This is the deictic spatial use of demonstratives. Himmelmann treats the construal of location as if the interlocutors were present at the events being reported also as deictic/situational (Himmelmann 1996:222). An example of situational use is *this way* in this passage:

- 10,89 And he's heading...you see a scene where he's...coming on his bicycle **this way**. [.5]

In this example, the reporting of events in the Pear Stories, *this way* projects proximal deixis into the film as if the interlocutors were in the film watching the action unfold. At any rate, the spatial deictic use is at best semi-active: the referent is present in the nonlinguistic discourse context, but has not been mentioned in the linguistic discourse.

Himmelmann then describes a **discourse deictic (inf)** use of demonstratives, to refer to events or propositions already described in the discourse (Himmelmann 1996:224). An example of discourse deictic use is *that story* in this passage:

- 9,60 then he goes off...and that's the end of **that story**, but then...it goes back to the farmer. [.6]

The discourse deictic use appears to be the transitional use from spatial deixis to anaphoric function, whether anaphoric pronoun or anaphoric article. There is reference to something already mentioned in the discourse, but it is not a person, place, or thing but something less salient to the interlocutors – namely, an event or proposition.

Himmelmann calls the next use of demonstrative forms a ‘tracking’ use (Himmelmann 1996:227). The tracking use essentially describes semi-active referents – referents mentioned before, but not recently or prominently enough to retain active information status. An example of the semi-active (tracking) use is *these colors* in this passage:

- 7,9 [.4] Something that I noticed about the movie particularly unique was that the colors . . .
were [.35] just [.5] very strange.
7,10 [.6 [.2] Like [.3]] the green was a [2.2] inordinately bright green,
7,11 [.55] for the pears,
7,12 [.4 . . and [.25]] **these colors** just seemed a little [.5] kind of bold,
7,13 almost to the point of [.1.15] being artificial.

Finally, Himmelmann describes what he calls a ‘recognitional’ use, to indicate that the speaker is unsure that the listener remembers the referent (Himmelmann 1996:230). This is a somewhat lower- accessibility information status than the tracking use – i.e. closer to inactive status. This use is illustrated by *those dusty kind of hills...* in this passage:

- 12,15 it was filmed in California, **those dusty kind of hills that they have out here by Stockton and all**. [.9+ [.9] so. .]

The recognitional use shows that the demonstrative attributive is heading down the Accessibility Scale once the demonstrative has been extended from the deictic function to accessibility, as noted at the beginning of this section. In this process, the demonstrative attributive may also go from a free morpheme to an affix. This change in morphosyntactic form may occur even when the form is semantically still a deictic form, as in Mbá (Tucker and Bryan 1966:120):

(17)	jú-wí(-bi)	juu-wû
	woman- this (-F)	woman- that
	'this woman'	'that woman'

But it also occurs after the demonstrative attributive has become an anaphoric or definite article, as in Swedish *barn-et* 'the child' (Holmes and Hinchcliffe 1994:49).

Demonstrative pronouns, in contrast, head up the Accessibility Scale, presumably via their discourse deictic use, once they are extended from their deictic function to accessibility. Since demonstrative pronouns head up the Accessibility Scale, they acquire the active function. If demonstrative pronouns come to be used for active referents, then they are analyzed as having evolved into anaphoric pronouns – that is, third person pronouns. For example, the Latin demonstrative pronoun *illa* 'that.F' evolved into the modern Romance third person pronouns: French *elle* 'she [F.]', Spanish *ella* 'she [F.]'.

Bringing demonstrative pronouns into the Accessibility Scale reveals an interesting pattern of crosslinguistic variation. There are three common strategies for third person anaphoric pronouns (Croft 2013:118):

- (i) Languages that have distinct forms for the two functions: demonstrative pronouns for deixis, i.e. semi-active referents, and anaphoric pronouns for active referents.
- (ii) Languages that use the same form as a demonstrative pronoun and as third person pronouns – that is, for both semi-active and active referents.
- (iii) Languages that are said not to have third person anaphoric pronouns. Similar to this type are languages that have zero third person indexes in contrast to overt first and second person indexes, a common pattern in the world's languages.

Cornish (1996) proposes that the pragmatic difference between use of a demonstrative pronoun and use of an anaphoric pronoun, in languages such as English and French that distinguish the two forms, is best described as follows: 'Deixis ... serves prototypically to shift the addressee's attention focus from an existing object of discourse to a new one derived via the situational context of utterance. Anaphora, on the other hand, is a signal to continue the existing attention focus already established' (Cornish 1996:22; see also Gundel et al. 1993:297–98 and references cited therein).

Continued focus of attention corresponds to active status, and a shift of focus of attention corresponds to semi-active status. This characterizes languages of type (i). Languages of type (ii), then, have presumably extended the demonstrative pronouns, or at least one of the demonstrative pronouns, to the anaphoric

function of an active status referent, without a split in morphological form. Finally, languages of type (iii) do not use the demonstrative pronouns for the anaphoric function of an active status referent, and instead use zero expression for active status referents.

Bhat (2005) reports patterns of occurrence of types (i)–(iii) and intermediate types in a 225-language sample that suggests a path of grammaticalization – roughly from (iii) to (i). Only 2 languages in his sample are of type (iii) (Cayuvava and Wichita; Bhat 2005:179). In 4 languages, there is a distinct anaphoric pronoun form but any demonstrative form may be recruited to denote active referents (i.e. serve as an anaphoric pronoun). In 33 languages, the anaphoric pronoun function may recruit any one of the deictic demonstrative pronouns. In 32 languages, only one of the demonstrative forms (most commonly the distal demonstrative) is recruited for anaphoric pronoun function.

These facts suggest that type (iii) is rare, and demonstrative pronoun forms are typically recruited to replace anaphoric pronoun forms, with one demonstrative form evolving into an anaphoric pronoun. In 17 languages, there are distinct anaphoric pronoun forms for human active referents, but nonhuman active referents recruit demonstrative pronoun forms. Bhat does not report any languages in which nonhuman active referents are zero expressed. It appears that grammaticalization proceeds first with recruitment of demonstrative pronoun forms for nonhuman active referents in many cases. In the remaining 143 languages – 64 percent of the sample – anaphoric pronoun forms are either entirely distinct from demonstrative pronoun forms, or more or less obviously derivationally related. Hence type (i) appears to be the commonest strategy.

Personal pronouns of all types – first and second person, as well as third person anaphoric pronouns – tend to grammaticalize into indexes fairly rapidly. They start as independent words, but are reduced to unstressed pronouns as in English:

- (18) [.] uh] **he** loses his hat,

Then they become clitics to other words, sometimes in special positions in the sentence, especially second position, as in Ngiyambaa (Donaldson 1980:308; slash indicates an intonation break):

- (19) mu:mbaŋayŋ-gula:y=**nap-gal** ya:lbi-ya / ɲina-gala: wandanŋ-galga:
bullfrog-like=3ABS-PL croak-PRS / this.ABS-PL:DEF wanda-PL.DIM
'They croak like bullfrogs, these little *wanda* [lit. 'ugly ones' – a euphemism for a mythical being].'

The pronouns may eventually allow **doubling (str)** – that is, a full noun phrase (common noun phrase) is allowed to co-occur with them (Givón 1976). In the Ngiyambaa example, we see the first step in this process: the noun phrase occurs as an “afterthought,” prosodically separated from the main clause. Eventually, the noun phrase occurs even in the same prosodic unit.

The pronouns usually get attached to verbs, as in the K'ichee' example in (12), repeated below as (20) (Mondloch 1978:27):

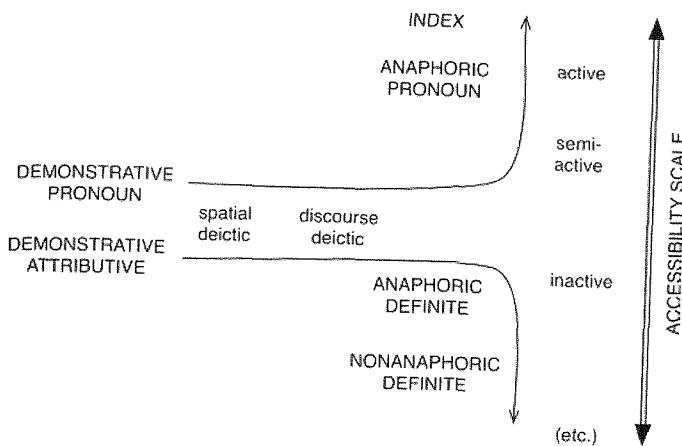


Figure 3.1 *The grammaticalization of demonstrative constructions into definite constructions.*

- (20) chewe'k k-ē-bē lē achixab pa tinamit
 tomorrow IPFV-3PL.ABS-go the man:PL to town
 'Tomorrow, the men go to town.'

Finally, there may be double or multiple marking of the referent even with pronouns, as in Woleaian (Sohn 1975:93) and French (from a promotional button):

- (21) Sar kelaai re sa tangiteng
child there 3PL ASP cry.RDP
 'Those children over there cried and cried.'
- (22) La marine, moi j'=aime
 the navy, 1SG 1SG=love:1SG.PRS
 'I love the navy.'

In (21), the third person form *re* refers to the same set of individuals as the noun phrase *sar kelaai* 'those children.' In (22), a slogan from a button, the independent pronoun *moi*, the clitic pronoun *j'*=, and the verbal inflection -*e* (actually no longer pronounced), all refer to the first person subject. These constructions – that is, the combination of referring phrase (or independent stressed pronoun) plus unstressed pronoun or index – tend to be used for less accessible referents.

The grammaticalization paths from demonstratives to definite constructions that have been described in this section are depicted in Figure 3.1.

3.4

Information Status: Real Referents, but Unknown Identity

So-called "indefinite" (not definite) pronouns and articles occupy most of the lower part of the information status continuum in Table 3.4. The major difference between the upper and lower part of the continuum is that the referent in the lower part of the continuum is not already known to both speaker and hearer.

That is, unlike in the upper part of the continuum, the referent is not identifiable, at least not to the hearer; and forms used to express such referents are not definite.

The non-identifiable referent may be an individual in the real world. An example of a non-identifiable, real-world referent is found in (23):

- (23) I bought a **bicycle** yesterday.

However, the non-identifiable referent in the lower part of the continuum may not even exist in the real world, existing (so to speak) only in a hypothetical or other nonreal situation. It is thus identifiable only by the type expressed by the common noun that the article combines with, or by the ontological type implicit in the pronoun (*someone* must be a person, *something* a nonhuman entity, etc.). An example of a non-identifiable, nonreal referent is found in one interpretation of (24):

- (24) I want to buy a **bicycle**.

In the nonreal referent interpretation of (24), I do not have a particular individual bicycle in the real world in mind, and therefore nor can the hearer. The only thing that speaker and hearer know about the referent is its type – namely, that it belongs to the category of bicycles. (There is also a real-world referent interpretation of (24): I saw a particular bicycle at a shop, and I want to buy that particular bicycle.) A nonreal referent, therefore, can only occur in contexts describing nonreal situations: desires, hopes, expectations, counterfactual situations, and so on. A more detailed classification of such contexts, following Haspelmath (1997), is given in section 3.5.

The terms generally used for the contrast between real and nonreal referents are ‘specific’ and ‘nonspecific.’ ‘Specific’ and ‘nonspecific’ statuses are thus very different from each other. Crosslinguistically, what appears to matter most for ‘specific’ referents is their pragmatic status, as will be seen in this section. Also, nonspecific constructions are quite diverse in the range of information statuses they express, as will be seen in section 3.5. For these reasons, “indefinite” is not a useful term, although it is very widely used since the English article *a(n)* is used for both specific and nonspecific statuses (compare [23] and [24]). We will refer to ‘specific’ and ‘nonspecific,’ with the understanding that both are “indefinite” in the usual sense of the latter term.

3.4.1 Pragmatic Specificity and the Theater Metaphor for Referents

Identifiability refers to how identifiable a referent/token is to the speaker and hearer, based on the description of the referent/token provided by the referring phrase (that is, the referent’s type). Identifiability is a general information status property that covers almost the entire continuum (except for generics; see section 3.6). Accessible referents, the topic of section 3.3, are already known to speaker and hearer and hence are identifiable to both. Specific referents, the topic of this section, are real-world referents that are not identifiable to at least the hearer; indeed, the point of a specific pronoun or article is to open a discourse file for the new referent.

Finally, nonspecific referents, to be discussed in section 3.5, are identifiable only by the type, since they are not real-world referents but hypothetical referents of various kinds.

Dryer (2014) argues that, crosslinguistically, the specific indefinite category should be further divided into what he calls **pragmatically specific (indefinite) referents (inf)** and **pragmatically nonspecific (but semantically specific) indefinite referents (inf)**. Dryer writes, ‘a pragmatically specific indefinite noun phrase normally introduces a participant that is referred to again in the subsequent discourse, while a pragmatically nonspecific indefinite noun phrase normally does not’ (Dryer 2014:e236). In terms of Givón’s operational criteria for topicality given in section 3.3.1, pragmatically specific referents have very low topic continuity but high topic persistence. Dryer describes the Kokota article in (25) (from Palmer 2009:80) as used for a pragmatically specific referent but not a pragmatically nonspecific referent (Dryer 2014:e238):

- (25) ia puku ba, ia do ba, n-e kati=nau ara
 ART.SG fly or, ART.SG mosquito or, RL-3SG bite=1SG.OBJ 1SG
 ‘A fly or a mosquito bit me.’

Dryer notes that articles used only for pragmatically specific referents are probably more common than so-called ‘indefinite articles’ with the wider range of uses found with English *a(n)* (Dryer 2014:e237).

Dryer also observes that anaphoric articles, which are used to refer to a participant already referred to in the previous discourse (see section 3.3.1), are more common than definite articles like English *the* that are also used for inactive referents (Dryer 2014:e236). An example of an anaphoric article from Nguna is given in (26) (Schütz 1969a:269, 275; cf. Schütz 1969b:46); the anaphoric article is *wanogoe*:

- (26) go na-wota ni na-toko-ana p̄ota e tape
 and chief of village other he take
 araa ni na-raro... ...go na-raro wanogoe e
 branch of nararo_tree... and nararo_tree ART it
 pisei-ki na-vaivai-ana naga na-wota waina...
 show sign that chief that...
 ‘...and the chief of another village took the branch of the *nararo*
 tree...and the [aforementioned] *nararo* tree was a sign that the chief...’

Dryer’s observations indicate that articles that single out recurrent referents in the discourse – either previously referred to (anaphoric articles) or subsequently referred to (pragmatically specific articles) – are common in the world’s languages, more common than either the English “definite article” or the English “indefinite article.” In other words, the discourse status of referents is as important as their information status.

The discourse status of referents is often modeled by a **theater metaphor** (Grimes 1975; DuBois 1980). The theater metaphor divides referents into three

categories, comparing them to what you would see on a theater stage. The first category of referents consists of **actors** (*inf*), who are the main players in the actions reported in the discourse. These are the participants to which there is recurrent reference in the discourse. They are usually human, or at least personified entities, or sometimes animals (also often personified). Actors are often introduced into the discourse by special constructions, including pragmatically specific articles. The second category of referents consists of **props** (*inf*), which are supporting entities that also play roles in the actions reported in the discourse. Props are almost always nonhuman – and hence are analogous to stage props – usually are referred to only once, and are rarely introduced into the discourse by special constructions. Finally, there are **settings** (*inf*): the places where the actors and props are located and the predicated action(s) take place, and the times at which the actions take place. Settings are also not typically referred to recurrently. However, they play an important role in organizing discourse, especially narratives, and they aid in referent identification.

The actor–prop distinction corresponds closely to the discourse status dimension that Dryer shows is important for understanding the distribution of articles. Anaphoric definite articles denote anaphoric actors, and pragmatically specific indefinite articles also denote an actor not previously known or mentioned. Props often lack articles in other languages, although they require articles in English.

3.4.2 Typology and Grammaticalization Paths of Referents: From Anaphoric to Nonspecific

There are a large number of categories of information status in Table 3.4, even leaving aside the different subcategories of nonspecific referents which will be discussed in section 3.5. In Table 3.4, we have largely followed Dryer's (2014) terminology and his division of the article constructions that express those categories of information status. Dryer arranges the article constructions in a single scale, presented below (Dryer 2014:e235; left to right on the scale corresponds to higher to lower in Table 3.4):

anaphoric —	nonanaphoric —	pragmatically —	pragmatically —	semantically
(definite)	definites	specific	nonspecific (but (indefinite)	nonspecific
			semantically	(indefinite)
			specific)	
			(indefinite)	

The scale is proposed to account for crosslinguistic strategies for the co-expression of articles. No language (to my knowledge) has five distinct articles corresponding to the five points of Dryer's scale. Many languages lack an overt article form for some of the points on the scale – in fact, many languages do not have any articles at all. But many languages that do have articles employ a co-expression strategy – that is, a single form is used to cover more than one point on the scale. Indeed, some languages have a single form covering all the points on the scale.

The crucial point here is that the scale constrains which points on the scale may be expressed by a single article construction. Only points on the scale that are contiguous to each other may be co-expressed. For example, English *the* co-expresses anaphoric and nonanaphoric definite functions, and English *a* co-expresses pragmatically specific, pragmatically nonspecific, and semantically nonspecific functions. But a single form such as the Kokota article illustrated in (25) can co-express anaphoric, nonanaphoric (definite), and pragmatically specific articles. There is no standard term for this category, since it includes both “definite” and “indefinite” article constructions. Nor would we want to coin a standard term: for the five article constructions, there are thirty-one co-expression possibilities – obviously too many to enumerate, let alone give distinct names to. Instead, we infer the scale based on co-expression possibilities attested in the world’s languages. That is, instead of positing a large set of functional categories defining a set of constructions, we simply posit a scale such as this five-point scale, and allow for any co-expression of the categories, as long as the categories each cover a continuous section of the scale.

The scale allows for fifteen different types of articles, ranging from articles used for just one function on the scale, to two contiguous functions, three contiguous functions, four contiguous functions, or all five functions. The scale thus reduces the number of possible co-expression strategies by half. Dryer found all but two of the fifteen types; the two unattested types are the type that combines nonanaphoric definite with pragmatically specific indefinite, and the type that combines those two functions with pragmatically nonspecific (but semantically specific indefinite).

In other words, a careful description of articles in the world’s languages reveals far more article types than the English definite article and indefinite article. But instead of defining fifteen distinct types, the definiteness scale allows us to describe a wide range of possible article types using a more limited set of five functions (sometimes with finer-grained divisions of those functions), and a constraint on possible article types based on the order of the functions on the definiteness scale. The typological generalizations (typological universals) about article types are based on the functions – that is, information statuses – and their relationships along the scale, which in turn is based on the semantic and pragmatic dimensions underlying the scale of information statuses summarized in Table 3.4. In other words, one can capture the diversity of language-specific article categories – co-expression strategies – and the universal constraints on language-specific categories and their diachronic extensions with a single scale.

The scale also constrains the grammaticalization paths of articles. In section 3.3.2, it was noted that demonstrative attributes grammaticalize to become lower-accessibility articles (see Figure 3.1). An example is the evolution of the Latin demonstrative attributives to the definite articles in modern Romance languages, e.g. Latin *illa* ‘that.F.’ > French, Spanish *la* ‘the [F.]’. That is, the demonstrative attributive form comes to (co-)express the anaphoric definite and the nonanaphoric definite. These are the first two points in the scale. But this form can also come to co-express specific indefinite and even nonspecific indefinite articles.

This path of grammaticalization was described by Greenberg (1978a) with respect to a number of African languages, for example the Gurma subgroup of Voltaic (a subgroup of Niger-Congo). A determiner that covers the information status of anaphoric and nonanaphoric definites is described by Greenberg as a Stage I article, like English *the*. Another example of a Stage I article is the Gurma Class 1 definite article in *ba niti-ba* 'the.cl.1 man-cl.1' (Greenberg 1978a:55). The determiner is then extended to the specific indefinite function (Greenberg did not distinguish pragmatically specific and pragmatically nonspecific indefinite articles). Greenberg describes this as a Stage II article, occurring as a prefix in the Gangam language of the Gurma subgroup (Greenberg 1978a:55). Finally, the determiner is extended even to nonspecific indefinites – that is, virtually all referring expressions, as in the prefixes found on all nouns in Akasele and Tobote-Basari (Greenberg 1978a:55). Greenberg calls this a Stage III article. A Stage III article is basically a noun marker, since it covers all points on the scale. For example, 99 percent of Hausa nouns end in a long vowel (Greenberg 1978a:71). Only a few exceptions exist. These are typically common nouns functioning as proper nouns or having an adverbial function: *dáwákií* 'horses' but *Dáwáki* [name of a town]; *bààkíí* 'mouth' but *?à bákà* 'in the mouth' (Greenberg 1978a:71–72).

In languages such as English, there are two different articles; the English articles are called 'definite,' covering the first two points on the scale, and 'indefinite,' covering the remaining three points on the scale (see section 3.2). The diachronic scenario leading to two distinct articles is that certain forms come to be used to express specific information status from outside the domain of information status; and those forms "block" the anaphoric and nonanaphoric definite articles from spreading to the remaining points on the scale, as happened in certain African languages.

There are two common sources for specific (indefinite) forms. The numeral 'one' often serves as a source for a specific (indefinite) article (Givón 1981a). This is the source of English *a(n)*; the occurrence of *n* before nouns beginning with a vowel is the remnant of the *n* of English *one*. Many so-called indefinite articles are restricted to Dryer's pragmatically specific function (Dryer 2014). It is likely that such articles begin in the pragmatically specific function, then may be extended to the pragmatically nonspecific but semantically specific function, and then to the semantically nonspecific function, as has occurred with English *a(n)*. That is, it appears that articles derived from 'one' grammaticalize into lower-identifiability expressions, just as articles derived from demonstrative attributives do.

The second source of many indefinite pronouns, presumably specific indefinite pronouns, are **interrogative pronouns** (*cxn*), such as *who?* *what?* *why?* etc. As we saw in section 3.1.3, interrogative pronouns are also often expressed by a strategy combining a morpheme for the interrogative pronoun function and a classifying morpheme indicating a broad ontological category (person, thing, place, time, manner, quantity, etc.).

Indefinites related to interrogatives are either identical to interrogatives or overtly morphologically derived from them (Haspelmath 1997:26–27). An example of identity in form from Khmer (Cambodian) is given in (27)–(28) (Huffman 1967: 155, 153; cf. Haspelmath 1997:27):

- (27) look cəŋ tif̩ qwəy?
you want buy what
'What do you want to buy?'

- (28) kñom tin qwəy haøy trɔlop tow ptəah
I buy INDF PRF return go house
'After I buy something, I'm going back home.'

The fact that such indefinites may be overtly derived from interrogatives, but not vice versa, indicates that the interrogatives are the diachronic source of the indefinites (Haspelmath 1997:26–27). Haspelmath does not suggest that interrogatives are related to any particular type of indefinite pronoun function. However, it is plausible to assume that they are most directly related to specific indefinite pronouns. Both interrogative pronouns and specific indefinite pronouns name a referent whose identity is not shared knowledge between speaker and hearer. For specific indefinite pronouns, the hearer doesn't know the identity of the referent. For interrogative pronouns, it is the speaker who doesn't know the identity of the referent; the purpose of the interrogative form is to request identification from the hearer.

The grammaticalization paths do not end with the bottom end of the information status continuum. A Stage III article can become a **nominalizer** (*cxn*) – that is, not only does it indicate that a form is a referring phrase, but it can make a form into a referring phrase. For example, there is a general noun marker *k-* in many Nilo-Saharan languages, e.g. Maasai *ki-nyaj* 'crocodile,' *ki-ma* 'fire,' *ku-tuk* 'mouth'; the *k-* is also an action nominalizer in Ngambay Mundu: *usa* 'eat,' *k-usa* 'act of eating' (Greenberg 1981:479).

A demonstrative pronoun or definite article may also be extended from expressing the information status of prototypical referring phrases – object concepts – to signal nonprototypical referring constructions. The demonstrative pronoun / definite article may become a relativizer, signaling a relative clause (see section 19.2.1), as in (29) from K'ichee' (Mondloch 1978:83) and its English translation; and/or a complementizer, signaling a complement clause (see section 18.3.1), as in example (30):

- (29) utz r̩ nu-tz'r̩ r̩ [x-Ø-r̩-sipaj ch-w-ē]
good the 1SG.POSS-dog the [PFV-3SG.ABS-2PL.ERG-give to-1SG-to]
'The dog **that** [you gave me] is good.'

- (30) I told her **that** [she could come].

Although relative clauses serve the modification function, they are part of referring phrases and may recruit grammatical forms used for expressing prototypical

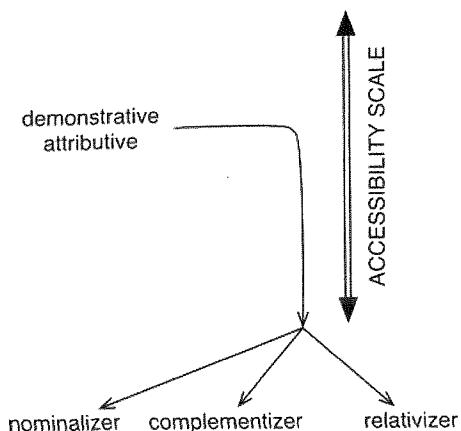


Figure 3.2 *The grammaticalization of demonstrative forms to nominalizers, complementizers, and relativizers*

referring phrases; see Chapter 19. Figure 3.2 depicts the grammaticalization paths of demonstratives beyond the Accessibility Scale.

One diachronic development that is not related to the general pattern of extension to lower-accessibility and/or lower-identifiability information statuses is illustrated by Modern Greek. The Modern Greek definite article is used with many noun phrases where English would not use *the*:

- Modern Greek* (Holton, Mackridge, and Philippaki-Warburton 1997:278, 279, 277, transliterated):
- proper noun: *o Dekémbrios* [the December] ‘December’
 - demonstrative: *aftós o schilos* [this the dog] ‘this dog’
 - possessive: *o filos tis* [the friend her] ‘her friend’

Haspelmath (1999a) proposes an explanation for why some languages (like English) exclude the definite article from possessive constructions, but other languages (like Modern Greek) use the definite article. He argues that the absence of the definite article for the possessive constructions is economically motivated. Although it is possible that the referent is not always identifiable (she might have more than one friend, even in the discourse context), the referent is identifiable overwhelmingly more often, far more than for nonpossessive referring phrases. Hence, when the definite article grammaticalizes, it stops being used with possessive referring phrases, as happened with English. However, there is another mechanism – called ‘explicitness’ by Haspelmath, and ‘iconic motivation’ by others (e.g. Croft 2003:102–10) – which motivates the overt expression of a function such as identifiability. This mechanism leads to the retention of definite articles with possessive constructions, and also with proper nouns and demonstrative attributives, as in Greek.

Finally, a word of caution about form and function of pronouns and articles. This section and the preceding section have assumed that each article in a language is used with a specific category or set of categories in the information status

continuum. This is an oversimplification of the crosslinguistic facts. Gundel et al. (1993) coded the information status category of personal pronouns, demonstratives, and articles in texts in five languages (English, Spanish, Russian, Chinese, and Japanese). They found that terms used for one of the three mutually exclusive information statuses may also occasionally be used for a referent at a higher information status (higher in Table 3.4). And Dryer notes that perhaps the most significant conclusion from his broad typological survey of articles is that the vast majority of articles are not obligatorily used with nouns denoting referents with the information status denoted by the article (Dryer 2014:e239, e240). And many languages lack articles entirely. Hence, the relationship between the form of a referring expression and the information status of its referent must be inferred at least in part from context in most, if not all, languages.

3.5 Nonreal Referents: Indefinite Pronouns/Articles and the Semantic Map Model

Diversity in language-specific categories cannot always be constrained by a simple 1-dimensional scale such as the Accessibility Scale or Dryer's definiteness scale. The 1-dimensional scale presented in section 3.4.2 works well to account for co-expression strategies for most of the information status continuum; it can even handle finer-grained divisions in the continuum.

However, the various categories of nonreal referents do not form a simple 1-dimensional scale. At the same time, there is also much variation in co-expression strategies. Categories of nonreal referents are grouped together by language forms in so many different ways that one cannot posit comparative concepts for each and every set of nonreal referent categories expressed by a single form in any language. Nevertheless, there is a pattern that constrains the possible ways that nonreal information statuses are co-expressed; it is just more complicated than a simple 1-dimensional scale. After introducing the distinct nonreal information statuses, we will describe the pattern and the methodology that allows us to describe the pattern – namely, the semantic map model.

Haspelmath (1997) provides a typological analysis of “indefinite” pronouns (no comparative typological study exists for “indefinite” articles). Recall from section 3.4 that “indefinite” pronouns cover both specific and nonspecific pronouns, although they are quite different in their information status. Haspelmath divides the information statuses into nine functions: two for specific referents and seven for nonspecific referents.

Haspelmath divides specific referents into two categories that are different from Dryer's pragmatically specific and pragmatically nonspecific referents (the number after the examples below is the page reference to Haspelmath 1997). Haspelmath's two categories pertain to whether or not the speaker knows the identity of the real-world referent (in both categories, the hearer does not know the identity of the real-world referent):

- **Specific known referent (*inf*) / pronoun (*cxn*):** a real-world referent whose identity is known to the speaker (but not the hearer)

(31) Masha met with **someone** near the university. (46)

If (31) is used in a context where the speaker knows the identity of the person Masha met, then *someone* is a specific known pronoun expressing a specific known referent.

- **Specific unknown referent (*inf*) / pronoun (*cxn*):** a real-world referent whose identity is unknown to both hearer and speaker

(32) Masha met with **somebody** near the university. [speaker has forgotten who] (46)

If (32) is used in a context where the speaker does not know the identity of the person Masha met, then *somebody* is a specific unknown pronoun expressing a specific unknown referent.

Haspelmath divides nonspecific indefinites into seven functions, based primarily on the semantic context of the referring phrase as indicated by the construction that the referring phrase occurs in. The semantic context is what renders the referent nonspecific: it “exists” only in a nonreal context defined by the construction it occurs in, and can be identified only by the type description provided by the pronoun.

- **Irrealis referent (*inf*) / pronoun (*cxn*):** a referent (a manner in this example) which is in the “world” of a desire, wish, command, etc. (see section 18.2.2):

(33) Visit me **sometime**. (42)

In (33), *sometime* is an irrealis pronoun expressing an irrealis referent, a time only found in the hoped-for world of the speaker’s offer.

- **Question referent (*inf*) / pronoun (*cxn*):** an unspecified referent in the scope of interrogation, especially polar interrogatives (see section 12.3):

(34) Can you hear **anything**? (36)

In (34), *anything* is a question pronoun expressing a referent that only “exists” in a hypothetical world whose existence is being entertained by the questioner.

- **Conditional referent (*inf*) / pronoun (*cxn*):** an unspecified referent in the protasis in a conditional construction (see section 17.3):

(35) If you hear **anything**, tell me. (36)

In (35), *anything* is a conditional pronoun expressing a referent that is found only in the hypothetical world introduced by the protasis of the conditional construction.

- **Indirect negation referent (*inf*) / pronoun (*cxn*):** an unspecified referent which is in a clause embedded in a negated clause (see section 12.2, section 18.2.2):

(36) I don't think that **anybody** has seen it. (33)

In (36), *anybody* is an indirect negation pronoun expressing a referent that is found only in the negated world of the speaker's beliefs.

- **Comparative referent (*inf*) / pronoun (*cxn*):** an unspecified referent occurring in the standard of comparison in a comparative construction (see section 17.2.1):

(37) The boy runs as fast as **anyone** in his class. (35)

In (37), *anyone* is a comparative pronoun expressing a hypothetical referent selected from the class representing the standard to which the boy's running is being compared.

- **Free choice referent (*inf*) / pronoun (*cxn*):** an unspecified referent in certain contexts, whose identity can be freely chosen without affecting the truth value of the utterance (see also section 19.4):

(38) After the fall of the Wall, East Germans were free to travel **anywhere**. (48)

In (38), *anywhere* is a free choice pronoun expressing a referent which the agent in the clause – the East Germans – is free to choose to travel to.

- **Direct negation referent (*inf*) / pronoun (*cxn*):** an unspecified referent which is in the scope of negation in the same clause (see section 12.2):

(39) I noticed **nothing** / I didn't see **anything**. (31–32)

In (39), *nothing* or *anything* are direct negation pronouns expressing a referent found only in the negative alternative world to the real world.

The specific referents are a continuation of the 1-dimensional scale in section 3.4.2, even if specific referents are distinguished rather differently with the pronouns (Haspelmath) than with the articles (Dryer). However, the co-expression strategies found with nonspecific pronouns cannot be described in terms of a 1-dimensional scale. Nevertheless, there are constraints on the possible – or at least common – co-expression strategies for indefinite pronoun functions. The constraints on co-expression of functions in each language-specific indefinite pronoun category can be represented by Figure 3.3 (Haspelmath 1997:64, with minor amendment by Croft and Poole 2008:6, Regier et al. 2013:96).

The network of relations between nonspecific referent subtypes is called a **conceptual space**: the conceptual space is hypothesized to represent similarity relations among the functions represented by nodes in the network (question context, conditional context, etc.).

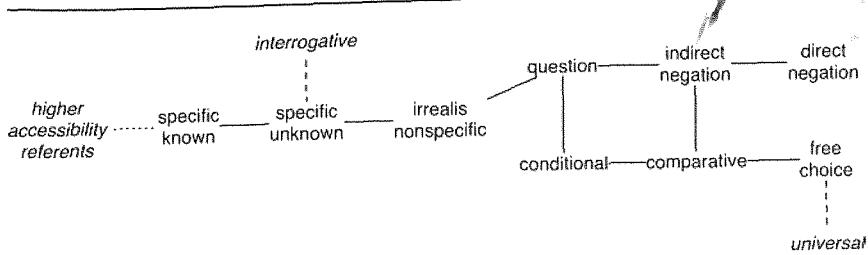


Figure 3.3 *Conceptual space for indefinite pronouns, with additions described in the text*

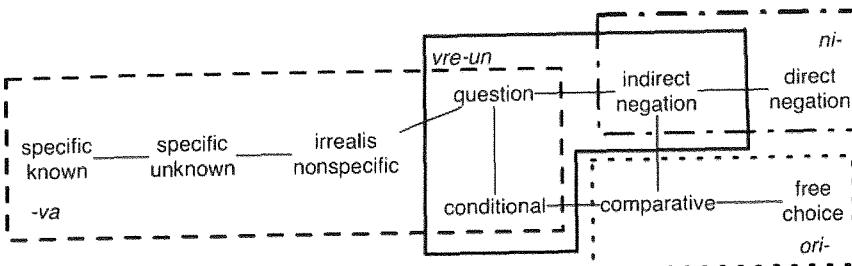


Figure 3.4 *Semantic map of Romanian indefinite pronouns*

Any language-specific pronoun category can be represented as a **semantic map** plotted onto this conceptual space, as is done in Figure 3.4 for Romanian (Haspelmath 1997:264).

One category of Romanian indefinite pronouns is formed with the suffix *-va*; it is used for the functions inside the dashed-line box in Figure 3.4. Another category of indefinite pronouns is formed with the prefix *ori-*; it is used for the comparative and free choice functions enclosed by the dotted-line box. A third category of Romanian indefinite pronouns is formed with the prefix *ni-*; it is used for the indirect negation and direct negation functions enclosed by the box with the dotted-and-dashed outline. Finally, a fourth category of indefinite pronouns is formed by the combination of the prefix *vre-* and the suffix *-un*. This category of indefinite pronouns includes the question, conditional, and indirect negation functions, which are enclosed by a solid-line box. Note that this last category of Romanian indefinite pronouns overlaps in function with two of the other Romanian indefinite pronouns. It is frequently the case that linguistic forms overlap with other linguistic forms in their function. This overlap is easily visualized using the “maps” of each category in Figure 3.4.

Language-specific indefinite pronoun categories are highly variable from one language to another, and can overlap even in a single language. This is a common property of the co-expression of functions. There does not exist a small set of universal grammatical or lexical categories for a semantic domain. Instead, there is a conceptual space of fine-grained semantic functions that represents

semantic relations among those functions and constrains certain co-expression strategies, or at least favors them over others.

This way of analyzing typological diversity and typological universals has been codified to some degree as the **semantic map model** (Haspelmath 1997, 2003; Croft 2001, 2003; and references cited therein). Using the terminology of Croft (2001, 2003), the underlying set of functions and their relationships, such as the definiteness scale or the diagram in Figure 3.3, is the **conceptual space** for a particular functional domain. A language-specific category, such as the Romanian *-va* Pronouns in Figure 3.4, can be represented as a **semantic map** that covers a section of the conceptual space. (Others use the term ‘semantic map’ for both the conceptual space and the representation of language-specific categories.) Possible language-specific categories are constrained by the following generalized typological universal (Croft 2003:134):

- (40) *Semantic Map Connectivity Hypothesis:* a relevant language-specific category should map onto a *connected region* in conceptual space. (Connections are indicated by the lines linking the functions in the network in Figure 3.3.)

We will encounter other examples of conceptual spaces and semantics maps of language-specific categories onto a conceptual space in other areas of grammar in this textbook.

Another type of pronoun that does not pick out a specific referent that is not included in the conceptual space, or more generally in Haspelmath’s typological analysis, is **universal pronouns (cxn)**, such as *everyone*, *everywhere*, *always*, etc. Universal pronouns express when the predication applies to all referents in a set determined by the type description provided by the pronoun (*everyone* for persons, for example). Universal pronouns are sometimes used for nonspecific referents in the free choice and comparative contexts in the lower right of the conceptual space in Figure 3.3 (Haspelmath 1997:55–56). The universal function itself does not have to apply to nonreal contexts: *Everyone left the room* describes a set of referents in the real world. The universal function is analyzed as quantification in predicate calculus in formal semantic theories, and will be discussed as such in section 4.1.3.

There are also nonspecific articles as well as the nonspecific pronouns that Haspelmath analyzes. Nonspecific articles can be categorized by the same referent functions that are found in the conceptual space in Figure 3.3. Nonspecific articles are expressed in English by the modifiers *any* (*Take any apple*; free choice) and *no* (*Do no harm*; direct negation), as well as the specific and nonspecific article *a(n)* for most of the other referent functions in Figure 3.3. Interrogative and universal “articles,” as in *Which apple do you want?* and *All the apples are yours*, could also be included in this conceptual space, just as we have suggested for interrogative and universal pronouns. The category of “articles” thus encroaches on the category of quantifiers as modifiers, which will be discussed in section 4.1.3.

3.6 Generic Reference

The last category in Table 3.4 that is related to identifiability is **generic (*sem*)** reference. In generic reference, one is referring to the type itself, and not to a particular referent/token of the type.

A **generic pronoun (c_{xn})** describes a generic human participant in a generic activity. The generic function is expressed using a variety of co-expression strategies. Generic forms arise from 'one' or 'man, person,' as in (41) from Basque (Saltarelli 1988:208; cf.:58) and (42) from Swedish (Siewierska 2011:62, from Egerlund 2003:76):

- (41) bat-ek ba al daaki bada zer egi-n?
one-ERG EMPH Q knows anyhow what do-PFV
 'Does **one** really know what to do anyhow?'
- (42) man mäste arbeta till 65
man must work till 65
 'People have to work till the age of 65.'

The English translations show that English also uses 'one' and 'people' in the generic function.

English also uses personal pronouns that otherwise refer to specific individuals (Siewierska 2004:21; Siewierska and Papastathi 2011:583):

- (43) a. **We** routinely lie.
 b. Money can't buy **you** love.
 c. In Spain **they** eat late.

Plural pronouns, particularly third person plural, are typically used for the generic function (Siewierska 2004:211). Third person generally excludes the speaker and addressee from the domain of individuals to whom the generic activity applies (Siewierska 2004:211).

All of these generic forms are extended to various types of specific indefinite functions as well, which overlap with Haspelmath's referent functions described in section 3.5 (Haspelmath 1997:27–29, 52–54; Siewierska 2011; Siewierska and Papastathi 2011). Haspelmath notes that generic nouns often grammaticalize into indefinite pronouns of different types in his classification, though he does not specify which indefinite function they typically grammaticalize into first.

Finally, since the generic referent function (and also the associated specific indefinite functions) effectively defocuses attention on the subject or agent of the generic activity, grammatical voice forms that defocus the agent are also used in this function, such as the reflexive in (44) from Italian (Cinque 1988:522; cf. Siewierska and Papastathi 2011:577–78) and the passive in (45) (see Chapter 8):

- (44) si lavora sempre troppo
 REFL work:SG always too_much
 'One always works too much.'

- (45) Smoking is **forbidden** here.

These verb forms also lead to zero expression – that is, the absence of a referring phrase denoting the generic referent (for some discussion of zero expression of generic referents, see Lyngfelt 2012).

The variety of strategies for generic pronouns suggests that generic reference – reference to a type – is less basic than reference to individuals, since several strategies for generic reference are recruited from constructions for reference to individuals, such as the personal pronoun strategies.

There is also generic reference in combination with common nouns – that is, **generic articles (cxn)**. Generic articles have not been systematically explored typologically, but anecdotal evidence – such as the constructions used for generic reference in English – indicates that, like generic pronouns, the constructions for generic determiners are recruited from the noun phrase constructions used for reference to tokens/individuals via their type:

- (46) a. **Bats** are flying mammals. [cf. Bats flew out of the cave.]
 b. **The bat** is a flying mammal. [cf. The bat flew out of the cave.]
 c. **A bat** is a flying mammal. [cf. A bat flew out of the cave.]

This fact resembles the derivative use of personal pronouns for generic pronouns. It appears that reference to types is nonprototypical in comparison to reference to individuals: for both generic pronouns and generic articles, the forms used are recruited from reference to individuals, and there is a lot of variation in generic reference strategies both within and across languages.

Terms Defined in this Chapter

3.1 The Semantics of Referring Phrases: Reference and Referents

3.1.1 Semantics of Reference

individual (*sem*), token (*sem*), category (type) (*sem*), common noun (*cxn*), generic reference, article (*cxn*), proper noun (*cxn*), speech act situation, contextual (*sem*), pronoun (*cxn*), personal pronoun (*cxn*), first person pronoun (*cxn*), second person pronoun (*cxn*), third person pronoun (*cxn*), inclusive pronoun (*cxn*), exclusive pronoun (*cxn*), deixis/deictic (*sem*), demonstrative pronoun (*cxn*), proximal (*sem*), distal (*sem*)

3.1.2 Semantic Categories of Nouns and the (Extended) Animacy Hierarchy

human (*sem*), animate (*sem*), inanimate (*sem*), Animacy Hierarchy, salience (*inf*), Extended Animacy Hierarchy

3.1.3 *Combined Means of Reference, and the Ontological Categories*
demonstrative pronoun (*cxn*), demonstrative attributive (*cxn*), ontological categories (*sem*)

3.2 *The Information Status of Referring Phrases: Pronouns and Articles*
particularizing, information status (*inf*), determiner (*cxn*), identifiability/
identity (*inf*), article (*cxn*), definite article/pronoun (*cxn*), indefinite article/
pronoun (*cxn*)

3.3 *Information Status: Identity Known to Speaker and Hearer*

3.3.1 *Accessibility and the Accessibility Scale*

accessibility (*inf*), active (*inf*), anaphoric pronoun (*cxn*), zero anaphora (*cxn*),
semi-active (*inf*), anaphoric (definite) article (*cxn*), inactive (*inf*), nonanaphoric
(definite) article (*cxn*), inferrable, Accessibility Scale

3.3.2 *Referring Phrase Constructions at the Upper End of the Accessibility Scale*
indexation (*str*)

3.3.3 *The Grammaticalization of Definite Constructions from Demonstrative
Constructions*

discourse deixis/deictic (*inf*), doubling (*str*)

3.4 *Information Status: Real Referents, but Unknown Identity*

3.4.1 *Pragmatic Specificity and the Theater Metaphor for Referents*

pragmatically specific (indefinite) referent (*inf*) / article (*cxn*), pragmatically
nonspecific (but semantically specific) (indefinite) referent (*inf*) / article (*cxn*),
theater metaphor (*inf*), actor (*inf*), prop (*inf*), setting (*inf*)

3.4.2 *Typology and Grammaticalization Paths of Referents: From Anaphoric
to Nonspecific*

interrogative pronoun (*cxn*), nominalizer (*cxn*)

3.5 *Nonreal Referents: Indefinite Pronouns/Articles and the Semantic Map
Model*

specific known referent (*inf*) / pronoun (*cxn*), specific unknown referent (*inf*) /
pronoun (*cxn*), irrealis referent (*inf*) / pronoun (*cxn*), question referent (*inf*) /
pronoun (*cxn*), conditional referent (*inf*) / pronoun (*cxn*), indirect negation referent
(*inf*) / pronoun (*cxn*), comparative referent (*inf*) / pronoun (*cxn*), free
choice referent (*inf*) / pronoun (*cxn*), direct negation referent (*inf*) / pronoun
(*cxn*), conceptual space, semantic map, semantic map model, universal pronoun
(*cxn*)

3.6 *Generic Reference*

generic (*inf*), generic pronoun (*cxn*), generic article (*cxn*)

4 Modification

Semantic Types and Morphosyntactic Strategies

4.1

Information Packaging and Semantics of Modifiers

In this book, the terms ‘modifier,’ ‘modification,’ and ‘attributive phrase’ are used specifically to describe modifiers of referent expressions. Although the term ‘modifier’ is sometimes used for certain dependents of predicates, particularly manner adverbs, and other kinds of dependents, we analyze those “modifiers” as performing different functions in the sentence (see Chapter 14).

Constructions including both modifiers and a referent expression (the head of a referring phrase) are called referent modification constructions, or modification constructions for short, in this textbook (see section 2.2.4). Modifiers are themselves the head of attributive phrases that may include admodifiers. However, little typological research has been done on admodifier constructions. We will simply present some of the semantic types of admodifiers with English examples, in sections 4.1.2 and 4.1.3. We will mostly refer to modification constructions, because the morphosyntactic strategies for modification of a referent often involve changes to the head (the referent expression) as well as changes to the attributive phrase.

The functions of modifiers and the structure of modification constructions are difficult to present, for a number of reasons. There are many different semantic types of modifiers. There are also many different strategies used in modifier constructions. Moreover, the strategies found in modification constructions are used with many different semantic types of modifiers across languages, although most strategies appear to originate in a single semantic modifier type and spread to the others.

Finally, there has not been as much typological research on modification constructions as there has been on argument structure constructions (see Chapters 6–9 in Part III). Part of the reason for this is that reference grammars do not always have detailed descriptions of the grammatical constructions for different semantic types of modifiers and different types of modifier constructions. Hence, the crosslinguistic generalizations are less robust.

In this chapter, we will begin with the information packaging and semantics of different types of modifiers. A fairly detailed survey of semantic modifier types is presented in this section, in order to present a wide range of such types. Then the strategies used to encode modifier–referent relations are surveyed in sections 4.2–4.5, with discussion of the types of modifier–referent relations they

are typically used for. This will be essentially the first encounter by the reader with the strategies used to express syntactic relations, that is, relations between concepts expressed via the major propositional acts (reference, modification, predication) in a construction. Chapter 5 continues with more general topics on the structure of argument phrases.

4.1.1 The Information Packaging Function of Modification

In sections 1.3 and 2.2, modification is described as an information packaging function in which a speaker adds further information about the referent. There are several hypotheses about the discourse function of modification. The traditional definition is that modifiers serve to better identify the referent, e.g. the *blue book*, not some other one. This is the particularizing function described in section 4.2; it is also called ‘restrictive modification.’ In logical terms, the modification function narrows the extension (possible reference) of the category denoted by the referring expression, to the point that the intended referent can be picked out by the hearer.

In a study of the verbalization of experience by experimental subjects, Chafe proposes that modifiers are used to indicate that the real-world referent is specifically a nonprototypical member of the category denoted by the referent expression (prototypically a noun). For example, a strange object in a film created by Chafe for the experiment was called a *multicolored wooden tower* (Chafe 1977:233–34): the modifiers *multicolored* and *wooden* were used because the object was not a prototypical tower. This function is compatible with the particularizing function (see section 3.2): one could argue that more information needs to be added to the description of a nonprototypical referent than to that of a prototypical referent in order for the hearer to identify the referent.

Finally, Wierzbicka (1986), in a conceptual semantic analysis of adjectives (prototypical modifiers), argues that the function of modifiers is to enrich the listener’s image of, or file for, the referent – as in the file metaphor for information packaging described in section 2.1. This characterization of modification is really a generalization of Chafe’s theory: enrichment for any reason, not just nonprototypicality. In logical terms, the enriching function adds to the meaning (intension) of the category denoted by the referring expression as a whole.

These hypotheses about the function of modification all pertain to the problem of picking out an individual from a word that denotes a semantic type, i.e. the problem of reference in common noun phrases (section 3.1.1). Adding modifiers like *blue* or *wooden* provides a more narrowly defined type (*blue book*, *wooden tower*), but a semantic type nonetheless. This is the function performed by what we have called the prototypical modifier – namely, a property concept. Property concepts as modifiers constitute the comparative concept of ‘adjective,’ as described in section 2.2.3.

Other modifiers in common noun phrases help to pick out referents in other ways than narrowing the type denoted by the noun (or, more generally, the

referent expression). The function of different modifiers can be grouped into three different modifying subfunctions (Croft 1990b, 2007a). The function performed by property concepts can be described as **subcategorizing (inf)**, supporting the basic categorizing function of common nouns. Further details on the semantics of property concepts are given in section 4.1.2.

The second subfunction is **selecting (inf)**. The intended referent is one of many referents belonging to the type of the head noun. The referent may also be a set of individuals of the type. A characterization of a referent by a type, as is done by common nouns and adjectives, does not pick out the instance or set of instances of the type that the speaker intends to refer to. The instance(s) are selected using numerals, quantifiers, and related concepts, which are described in section 4.1.3. Selecting corresponds to the notion of an instance of a type in Cognitive Grammar (Langacker 1991:51–55).

The third subfunction is **situating (inf)**. Given an instance of a type, it can be identified further by situating it: either in physical space – deixis – or the mental knowledge/belief space of the interlocutors – information status. Situating corresponds to the notion of a grounded instance of a type in Cognitive Grammar (Langacker 1991:51–55). Chapter 3 has already described the semantics of pronouns and determiners, the superordinate comparative concepts describing the use of deixis and information status in modification. Situating is also expressed with nominal modifier constructions (section 2.2.5) of various types, described in section 4.1.4.

Table 4.1 summarizes the different types of modifiers, organized by information packaging subfunction and semantic construction type, that will be discussed in the remainder of section 4.1. For sorting and selecting, the constructions are individual words, and the second construction column gives the different words by semantic type. For situating, there are different types of nominal modifier constructions, and they are further distinguished by the semantic relations between modifying object and referent object that are prototypically found in the construction(s).

4.1.2 Property Concepts and Scalar Admodifiers: Sorting Referents into (Sub)Types

If we assume Wierzbicka's theory of the function of modification, then the ideal modifier is a “1-dimensional” – that is, defined on a single scale – stable stative concept that relates to the referent. A referring expression is a multidimensional category made up of the different defining properties of the category. A simple way to “enrich” this category is by a simple scalar property such as height or another spatial dimension, color, or quality (evaluation).

Although the comparative concept of adjective can be defined as modifying property concepts, the language-specific category usually called ‘Adjective’ is much more problematic. There is, in fact, greater variation in the strategies employed for property modification in a single language than for reference to

Table 4.1 *Modifiers, by informational packaging function and semantic construction type*

Information packaging function	Constructions (= words that function as the head of the attributive phrase)	Examples
subcategorizing (section 4.1.2)	adjective material term gender term color term shape term age term value term dimension term physical property term human propensity term	gold (bar) female (recruit) red (ball) square (window) young (man) good (teacher) tall (tree) hard (floor) smart (woman)
selecting (section 4.1.3)	numeral quantifier cardinal numeral vague numeral amount proportional quantifier distributive quantifier set-member ordinal numeral <i>next, last, other</i> mensural measure term container term form term group term piece term species term	five (eggs) several (eggs) much (food) most (doves) each (dove) <i>the second (box)</i> <i>the last (box)</i> <i>gallon (of wine)</i> <i>bottle (of wine)</i> <i>row (of trees)</i> <i>flock (of birds)</i> <i>slice (of bread)</i> <i>kinds (of apples)</i>
situating (section 4.1.4)	nominal modifier possession (alienable) possession (typically inalienable) locative modifier	<i>Semantic relations</i> ownership relation body part relation part–whole relation kinship relation figure–ground spatial relation Masha's dacha my arm corner of the house her mother vase on the shelf

objects or the predication of actions (Rogers 2016). Specifically, object modification constructions and/or action modification constructions are often recruited for some, or even all, property modification. What this means is that some property concepts really aren't prototypical instances of the head of the modifier phrase (i.e. prototypical adjectives). Instead, they are semantically nonprototypical: neither prototypical property concepts nor prototypical object concepts nor prototypical action concepts.

Some of the less prototypical property concepts are more likely to recruit object modifier (possession) constructions – these are called “nouny.” Others are more likely to recruit action modifier (relative clause) constructions – these are called “verby.” Still other property concepts are more likely to use unique strategies; these are the most prototypical property concepts for defining adjectives as property modifiers. The scale below presents the ranking of property concept semantic classes according to the likelihood of having a distinct strategy or of recruiting an object modifier or action modifier strategy (* = most prototypical property modifiers, + = next most prototypical property modifiers; scale from Wetzer 1992; the theory of the semantic prototype classes for the adjectives originates with Dixon 1977):

MORE LIKELY TO RECRUIT OBJECT MODIFIER CONSTRUCTION

1. **Material/Substance:** *wood(en), gold(en), etc.*
2. **Gender:** *male, female*
3. **+Color:** *white, black, red, green, blue, yellow, brown*
4. **+Shape:** *round, flat, etc.*
5. ***Age:** *old, young, ripe*
6. ***Value:** *good, bad*
7. ***Dimension:** *big, little, tall, short, wide, narrow, etc.*
8. **Physical Properties:** *smooth, sharp, soft, hard, heavy, light, etc.*
9. **Human Propensity:** *happy, jealous, kind, clever, etc.*

MORE LIKELY TO RECRUIT ACTION MODIFIER CONSTRUCTION

All of the semantic classes listed above are normally, or frequently, construed as stable. There are a number of qualifications to be made to the construal of stability. First, stability does not entail impossibility of change (cf. Goldsmith and Woietschlaeger 1982, who call this feature ‘structural’). For instance, a white door may eventually be painted red. But many objects have a more stable color: certain apples are red (that is, their skin is red). Also, stability does not mean forever, but only for the lifetime of the object. In fact, for biological kinds, such as persons, it appears that the properties can be construed as stable even if they persist for only one major life stage. For example, someone’s hair being red may not be true for their entire lifetime but just for the early and middle life stages; their hair may turn white in old age. Likewise, someone may be tall for a child, but still be short relative to adults, yet the child’s height is construed as stable. It appears that transitory states are those that can easily be changed through an external cause, such as a window being scratched or broken, or through an unseen internal cause (‘spontaneously’), such as getting sick.¹

¹ Human propensity terms, when they describe a personality trait of a person, are generally stable. However, they may also refer to a transitory state, e.g. someone being happy, or acting kind, on a particular occasion. See also section 6.3.3.

Property concepts are sometimes contrasted with object concepts in being less stable, but some object concepts – such as human social roles – are not stable either (being President of the United States, being chairman of the board, etc.). But perhaps the most salient semantic difference between object concepts and property concepts is that an object concept categorizes a referent as a whole (also called a ‘kind’), whereas a property concept denotes a single, 1-dimensional characteristic of a referent (Wierzbicka 1986).

The 1-dimensionality of property modifiers implies that the property represents a point on a scale. The following is a brief characterization of the scalar semantics of properties (for a more detailed model of the scalar structures of different types of property concepts, see Cruse and Togia 1995; Croft and Cruse 2004:ch. 7).

Scalar concepts are expressed by words that function as opposites. Opposites can be divided into two general types:

antonyms (cxn): forms that indicate opposing directions on a gradient scale: *tall, short, very tall, etc.*

complementaries (cxn): forms that indicate opposing values on a “scale” where there is no gradience, only categorical values (either the object has the value or it doesn’t): *alive/dead*. Such concepts can also be construed as scalar: one might be able to describe a person as *very married* or *very single*. Conversely, antonyms can be construed as complementaries: *I’ve put the clean shirts in the drawer and the dirty ones in the bag* (Croft and Cruse 2004:185ff.).

All antonyms have a **reference point (sem)** on the scale that defines them: for example, in regard to height of a person, *tall/short* means ‘taller/shorter than a “normal” height.’ The reference point is relative: tall for a person is short for a tree. Grammatically, the reference point category can be expressed overtly, as in *She’s kind of short for a basketball player*, but there are no crosslinguistic studies about how the reference point category is expressed that I am aware of.

Antonyms allow for a range of admodifier constructions (see section 2.2.1) that describe semantic operations on the scale they are associated with – that is, a degree on the scale (see section 2.2.2):

- **intensifiers (cxn)** indicate a higher than normal value on the scale: *very long*.
- **downtoners (cxn)** indicate a lower than normal value on the scale: *somewhat long, short-ish, yellow-ish*.
- **comparatives (cxn)** indicate a higher value on the scale than the comparable value for another object: *more intelligent, long-er*.
- **superlatives (cxn)** indicate the most extreme value on the scale: *most expensive, long-est*.
- **measurement (cxn)** indicates a calibratable value on the scale: *three feet long*.

Intensifiers denote a more extreme value on the property scale, while downturners denote a less extreme value on the scale. Comparative forms indicate a value on the scale relative to the value of another entity on the scale. The comparison is often expressed as a complex (biclausal) construction, and is

discussed in section 17.2. A superlative describes a value at the extreme end of a scale. For calibratable scales, a construction may be used to express a precise measured value on the scale.

Scalar admodification constructions often employ an inflectional strategy – that is, a **degree affix (str)**; an admodifier using the independent word strategy is typically called a degree adverb or a **degree modifier (str)**. Some languages use distinct scalar admodifier constructions for adjectives (property words) and gradable verbs (action words – actually, many gradable verbs like *love* denote not prototypical actions but stative events). For example, English uses *very* for intensification of English Adjectives (*very silly*), but *very much* or *a lot* for intensification of English Verbs (*I love you very much / a lot*).

Complementaries disallow scalar modifiers, and many scales cannot be measured and therefore disallow measurement forms. Croft & Cruse (2004:ch. 7) discuss some of the intricacies of different kinds of scales, defined mainly by what zero values (boundaries) are found for various antonym pairs.

4.1.3 Numerals, Quantifiers, and Set-Member Modifiers: Selecting a Referent

The ways in which an instance of a type is selected are complex: there are many ways in which an instance or set of instances can be selected, in part because there are many ways in which a type is instantiated in the world – as discrete individuals (tigers), as a homogeneous substance (water), as aggregates or configurations (mosquitoes, bleachers), or as members of a contextually established set (the books in this room). The strategies used for different types of selecting modifiers vary within, as well as across, languages, so one cannot infer from one such modifier how other selecting modifiers are expressed in a language.

The best-known selecting modifiers are **cardinal numerals (cxn)**, as in *one tree*, *two boys*, *three books*, etc. Cardinal numerals express the number (cardinality) of a set of units of the type. Cardinal numerals are the best-explored selecting modifiers across languages. Many, if not most, languages have productive constructions for forming complex numerals such as *four hundred (and) sixty-six*. These represent a type of word formation and will not be covered here; for typological surveys of complex numeral formation, see Greenberg (1978b) and Hurford (2003).

Cardinal numerals, like scalar properties, form a scale, and also have a variety of admodifiers, often of complex form, that increase, decrease, or approximate the numerical value:

Increase cardinality: *(well) over twenty people, more than twenty people, at least / no less than twenty people*

Decrease cardinality: *under twenty people, fewer than twenty people, at most / no more than twenty people*

Approximate cardinality: *around twenty people, twenty or so people, twenty-odd people*

The category of **quantifiers** (*cxn*) is semantically a heterogeneous group, which all have in common that the precise cardinality of the set is not specified. **Vague numerals** (*cxn*) select a set of countable entities, but not by their precise cardinality: *a few logs, a lot of ants, many cows, several ravens*. **Amount terms** (*cxn*) indicate an imprecise quantity for noncountable entities – that is, entities that do not “naturally” come in discrete individual units: *some wine, much wine*. (Note that some quantifiers can specify both vague cardinality and amount: *a lot of ants / a lot of wine*.) Both vague numerals and amounts specify values on a scale, typically ‘low’ and ‘high,’ not unlike scalar property modifiers. Cardinal numerals, vague numerals, and amounts all specify an absolute quantity of the tokens/instances of the type that the speaker intends to pick out, although only cardinal numbers specify the precise quantity.

Other quantifiers do not specify an absolute quantity for the instantiation of the type. **Proportional quantifiers** (*cxn*), unlike the absolute quantifiers (including cardinal numerals), specify the set as a proportion of the whole set of individuals/tokens of the type, or at least the contextually relevant whole set: *all cats, most dogs, few children*. The English examples illustrate total proportion, a greater proportion, and a lesser proportion, respectively. **Distributive quantifiers** (*cxn*) specify the members of the set but treat them individually (that is, the predicate applies to the whole set by virtue of applying to the individual members of the set): *every dog, each girl, both parakeets*.

All of the above quantifiers, including cardinal numerals, can be used to select instances from an explicitly designated set, rather than from the type as a whole: *six of the goats, some of the goats, all (of) the goats, each of the goats*. We will return to this contrast in section 5.2.2.

A distinct type of selecting modifier presupposes a designated set, usually previously presented in the discourse or inferrable from it, which has some sort of ordering. We will call this type of modifier a **set-member term** (*cxn*) (Croft 2007a:358). Set-member modifiers include the **ordinal numerals** (*cxn*): *the first problem, the second house on the left*. Other set-member modifiers that are not numerals include: *the next example, the last tree, the other / another car*.

All of the above selecting modifiers, other than cardinal numerals, are sometimes discussed as ‘quantifiers’ in grammatical descriptions. But they are semantically quite diverse, and not all semantic types are usually covered in grammars. For this reason, less is known about their crosslinguistic diversity or typological generalizations than for other modifiers.

Cardinal numerals, vague numerals, distributive quantifiers, and set-member modifiers all require the type denoted by the noun they modify to be individuated in some way. A type such as ‘book’ exists in the world as many discrete individuals. A speaker may intend to refer to a single book, or a particular set of five books. Such types are called ‘countable.’

Some other types, such as ‘wine,’ require individuation before quantification by the modifier types listed in the preceding paragraph. Such types can

be modified by quantifiers that require individuation via **measure terms (cxn)**, such as measures of volume or weight: *six gallons of wine*. Two other means of individuating such types are by **container terms (cxn)**, such as *a bottle of wine*, or **form terms (cxn)**, such as *two piles of sand* (Koptjevskaja-Tamm 2001:530).

Even countable types such as books can be quantified through measurement or containment or form (that is, arrangement): *fifty pounds of books*, *three boxes of books*, *two bundles of sticks*. Another category that uses a different unit for quantification are **group terms (cxn)**, such as *a group of students*.

Another way to select a unit that can be counted is via partition (Quirk et al. 1985:249–50), of either a countable or uncountable object. Quirk et al. describe two types of partition: quantitative and qualitative. Quantitative partition can be expressed with a **piece term (cxn)**, e.g. *a piece of meat*, *a slice of cake*. Qualitative partition divides a type into subtypes, and can be expressed with a **species term (cxn)**, such as *three types of modification*, *two varieties of juniper*, *many flavors of ice cream*.

Quirk et al. describe all of these ways of individuating objects as ‘nouns,’ but, as we will see, other languages use different constructions. Koptjevskaja-Tamm (2001) uses the term ‘measure’ for the superordinate category, which is also used for the more specific category of measure terms described above. We will use **mensural term (cxn)** for the superordinate category.

One characteristic of selection is that most, if not all, of the instances are temporary or contingent combinations or configurations. For example, the fact that there is some wine that measures 6 gallons, or that there is a set or pile of ten books, is a temporary or transitory characteristic of the referent. Even for something more lasting, such as a row of trees, it is not an inherent characteristic of trees that they come in rows. In contrast, many properties, particularly the more prototypical properties, are inherent, or at least fairly stable: a thick book is likely to remain a thick book for most or all of its existence.

4.1.4 Nominal (Object) Modification Constructions: Situating a Referent

An object concept may function as a modifier – that is, as a modifier of another object concept that is the referent of the referring expression as a whole (i.e. is the head of the referring expression). Since object concepts are nonrelational but modification is a relational information packaging function (see section 2.1), some type of semantic relation between the modifying object and the object being modified is induced in object modification. We begin this section by discussing some of the more important semantic relations holding between the two objects in object modification.

Three semantic relations in object modification are commonly described. The first is **ownership (sem)**. Ownership is a culturally sanctioned relation between a person and a physical object, such as an artifact, foodstuff or shelter, or a more abstract object of value such as shares in a company. In fact, the range of

semantic relations that holds between the referent denoted by an object modifier and the referent of the head of the referring phrase appears to be open-ended (Kay and Zimmer 1990; see also section 5.2.2). For example, *Sally's calendar* could be a calendar that she owns, one that she gave me, one that she is holding in a photo of people with calendars, one that she designed or made, one with photos of her, and so on. The semantic relation may be sensitive to a specific discourse context:

although *Katja's soup* would normally be interpreted as the soup that she has cooked or usually cooks, is/has been eating or is intending to eat, in the sentence *I'd like to have a plate of Katja's soup* uttered by my husband it refers to the soup I have cooked with a fish that had been caught by our daughter Katja. (Koptjevskaja-Tamm 2002:149)

The near-unconstrained semantic relation between object modifier and head referent appears to be a widespread, if not universal, characteristic of nominal modification constructions that prototypically express ownership (Koptjevskaja-Tamm 2004:155).

The second commonly described semantic relation is the **body part relation (sem)**, prototypically a relationship between a person and a physical body part of hers or his, such as one's arm or heart. This semantic relation can be extended in a number of ways, described in section 5.2.3. Here, we simply note one important extension, to **part–whole relations (sem)** in general, in particular part–whole relations of inanimate objects, such as the door of a house. The part–whole relation is related to partition as a way of individuating instances of a type, described in section 4.1.3. One semantic property of body parts and part–whole relations in general is that the part is defined only in terms of its relation to the whole of which it is a part.

The third commonly described semantic relation is the **kinship relation (sem)**, a relation that holds between a person and certain other persons by biological relations (e.g. biological mother) or social relations, such as marriage (e.g. mother-in-law) and other socially defined kin relations. The category of kin also has a prototype structure which will be described further in section 5.2.3. Not unlike body part relations, kin categories are defined only in relation to another person in a kin relation (whether biologically or socially defined).

We will subsume all of the above object–object relations under the category of **possession relations (sem)**. The semantic role of the modifier is a **possessor (sem)**, and the head is the **possessum (sem)**. For example, in *Katja's soup*, Katja is the possessor, the soup is the possessum, and the semantic relation between Katja and the soup, whatever it is, is a possession relation.

Following Koptjevskaja-Tamm and others, we will use the term **possessive (modification) construction (cxn)**, or alternatively **attributive possession construction (cxn)**, for the nominal modification construction that covers the range of semantic relations described above. The attributive phrase in a possession construction will be called a **possessive attributive (phrase) (cxn)**, or alternatively a **genitive phrase (cxn)**.

Hence, in *Katja's soup*, the entire construction is a possessive construction, and *Katja's* is a possessive modifier or genitive phrase. (A possession relation may also be expressed in clauses of different types; see section 10.4.2.²)

Some languages have two (or even more) morphosyntactically distinct possessive modification constructions. The possessive modification construction expressing at least ownership may be expressed by an **alienable possession construction (cxn)**, while at least some body part relations, part–whole relations, and/or kin term relations may be expressed by a distinct **inalienable possession construction (cxn)**. Possessive modification constructions will be discussed further in section 5.2.3.

Other semantic relations allow for modifying object concepts that are not persons. A **figure–ground spatial relation (sem)**, or **locative relation (sem)**, such as *the bicycle in the garage* may also function as an object modifying relation: the ground object (garage) modifies the figure (bicycle). We will call the construction expressing a figure–ground spatial relation, with the ground as the modifier, **locative modification (cxn)**; the phrase expressing the ground (*in the garage in the bicycle in the garage*) is a **locative attributive (phrase) (cxn)**. The asymmetry between a spatial figure – the referent – and a ground – an object whose location is used as a reference point for the figure's location – makes the ground object a good candidate for object modification – that is, helping to identify the referent. However, one can flip the usual figure–ground and part–whole relationship and still have a natural object modifying relation, as in *the house with a flat roof*: here, the figure/part (roof) modifies the ground/whole (house). Less is known crosslinguistically about locative modification constructions (but see section 4.3).

4.1.5 Action Modification

Action modification is the use of an action concept word for modification. Action modification often employs a strategy in which much or all of the structure of a clause, the prototypical construction headed by an action word, is preserved, as in English; the construction expressing the action modifier is in brackets:

- (1) the cake [that she baked on Sunday]

This is an example of a semantic information packaging strategy (section 2.4): use the morphosyntactic form found with the prototypical occurrence of the word in question – in this case, the action word. Since this very common strategy for action modification involves a subordinate clause, and in fact one

² The terms 'possessive/possession construction' and 'locative construction' are often used for either possessive/locative modification constructions or possessive/locative clause constructions. These should be distinguished because of their different information packaging functions.

of the more complex types of subordinate clause constructions, a full discussion of action modification is reserved for Chapter 19 in Part IV on complex sentences.

Nevertheless, we must note here that the relative clause construction is recruited for other semantic types of modifiers, even if we do not describe this strategy in detail in this chapter. A number of languages recruit an action modification strategy for property concept modification. For example, in Kukama-Kukamiria a nominalization action modification strategy (2) is extended to property concept modification (3) (Vallejos 2016:469, 241; the modifier may precede or follow the noun):

- (2) mita-n aimanta=pura umanu=tsuri tata=kuara
 lie-NR otorongo=FOC die=PST3 fire=INESS
 ‘The otorongo that fools around died in the fire.’

- (3) tawa tini-n muritsu mutsana
 clay be_white-NR jar remedy
 ‘The white clay is the jar’s remedy (= can be used to seal jars).’

Some property concepts in Akööse are encoded using a relative clause strategy using a relative pronoun (see section 19.2.2; example from Hedinger 2008:47; the relative clause marker indexes the noun class of the head noun, class 7 in the example):

- (4) ebongé éche é-púb-ε'
 CL7:thread CL7:REL CL7-white-IPFV
 ‘white thread’

4.2 Simple Encoding Strategies, and Word Order

We now turn to the morphosyntactic encoding strategies used in modification constructions. The encoding strategies, like all constructional strategies, are defined in crosslinguistically valid terms (see Croft 2003:31–42). The strategies introduced here are the encoding strategies found in the major propositional act constructions (see Chapter 2) – that is, encoding the relation between a modifier and the referent it modifies, and the relation between a predicate and the arguments it is predicated of. Hence, we will encounter these encoding strategies in the constructions described in the rest of this book. However, in this and the following sections, we will focus on their use in modification constructions, and in particular their diachronic origin and spread across different semantic modifier types.

The strategies discussed in this section are **simple (str)**: that is, they do not involve any additional morpheme. The simple strategy is illustrated in Figure 4.1. *Element1* and *element2* are morphosyntactic forms and *concept1* and *concept2* are functions. A semantic relation holds between the functions, described neutrally as *relation*. The dotted lines indicate the relation between form and

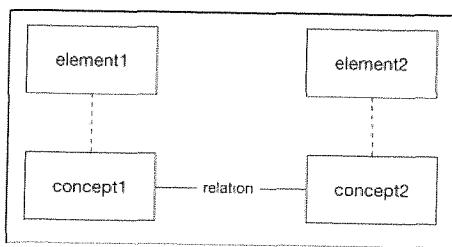


Figure 4.1 *Simple strategy for expressing the relation between two concepts*

function. Note that the semantic relation between the two concepts is only implicit in the form of the construction.

Simple strategies can be divided into two types. The first is **juxtaposition (str)**: the two words are morphologically free, as in the Yorùbà nominal modification construction in (5) (Rowlands 1969:44):

- (5) filá Àkàndé
 cap Akande
 'Akande's cap'

The second simple strategy is a more grammaticalized version of juxtaposition, in which the morphemes expressing the two concepts are combined in a single word. The term **compounding (str)** is used to describe the formal strategy of combining two roots in a single word, as in the adnominal construction from Kiowa in (6) (Watkins 1984:107):

- (6) nò:-tɔ:-cègùn
 my-brother-dog
 'my brother's dog'

The term **affixation (str)** is used when one of the two morphemes combined is not a root. This is one analysis of pronominal possession when it is morphologically bound to the possessee, as in the Tigre construction illustrated in (7) (Raz 1983:37; but see section 4.4 for further discussion):

- (7) sə?li-hom
 photograph-3PL.M
 'their [masc.] photograph'

The root-affix distinction is not always clear; is a personal pronoun a root or not? (For some discussion, see Croft 2001:268–71.) For that matter, the word vs. bound morpheme distinction, assumed in the contrast between juxtaposition and compounding, also lacks a clear, crosslinguistically valid definition, on either phonological grounds (Bickel, Hildebrandt, and Schiering 2009; Schiering, Bickel, and Hildebrandt 2010) or syntactic ones (Haspelmath 2011a; but see Zingler 2020 for a proposal for a crosslinguistically valid definition of a word). However, we must leave these issues unresolved here, and assume that we can identify words (free forms) vs. bound morphemes, and roots vs. affixes, in languages.

Juxtaposition may originate in a more complex modification construction in which all traces of prior morphology have eroded. Evidence of this can be found in historical documentation, or where there is variation in a single historical stage of a language. For example, in Old French, feminine nouns in inalienable possession appear as simple juxtaposition, because the feminine nouns had lost the case affixes (see section 4.3) used for the inalienable possession construction (Koptjevskaja-Tamm 2003b:651, from Herslund 1980:126):

- (8) la bouche sa mere
 the:FSG mouth his:FSG mother
 'his mother's mouth'

However, masculine nouns retained the nominative–oblique case affix contrast, using the zero-coded oblique form as the inalienable possessor (Koptjevskaja-Tamm 2003b:651, from Rheinfelder 1967:44; gloss added):

- (9) li filz Deu al Creatur
 the:MSG son God(OBL.SG) to:the.MSG creator
 'the son of the God Creator' (contrast *Deu-s* 'God-NOM.SG')

In many cases, juxtaposition appears to have simply originated as juxtaposition, without necessarily being the result of erosion of a prior, more complex construction. But, due to the lack of historical documentation in the vast majority of languages, we will never know how likely it is that juxtaposition originated *de novo*.

It is also difficult to infer whether juxtaposition originates with certain semantic modifier types, and is extended to others. The absence of any additional morphological material deprives us of clues as to the origin and spread of juxtaposition constructions. Nevertheless, juxtaposition is a strategy found in almost all semantic modifier types (it is quite rare for location and action modifiers). Juxtaposition is particularly common in property modification: property modification is frequently zero coded since it is the prototypical modification construction, and zero coding corresponds to juxtaposition. Numeral/quantifier modification also frequently employs juxtaposition.

Finally, we introduce a strategy that is independent of the encoding strategies described in this and the following sections, namely **word order (str)**. It is independent of the encoding strategies in that it accompanies any encoding strategy. For example, the word order of (5), *filá Akàndé*, is head–modifier – specifically, a head noun and a possessive modifier. In contrast, its English translation, *Akande's cap*, has the opposite order. Word order is a fixed property of any specific utterance – the words occur in a particular order. Word order is not always a fixed property of a construction: an attributive possession construction in a language could allow the head noun and the possessive modifier to occur in either order. When a particular word order is conventionally associated with a particular construction, then it can serve as a strategy that contributes to expressing the function of that construction.

4.3

Relational Encoding Strategies: Flags

Relational strategies employ a third morpheme that explicitly encodes the semantic relation between the two concepts. Strategies expressing the relation between referring phrase (as dependent) and some other element have been given the general name of **flag (str)** (Malchukov, Haspelmath, and Comrie 2010:8), also called a **case marker (str)** (Croft 2003:33–34; Dryer 2013e). Figure 4.2 illustrates the relational strategy.

Relational strategies are divided into two types, again based on whether the third morpheme is free or is bound to one of the words being related – in this case, the modifier. When the relational strategy involves a free morpheme, it is called an **adposition (str)**. When adpositions precede the modifying word, they are called **prepositions (str)**, as in the Bulgarian Possession construction in (10): *Bulgarian* (Scatton 1983:317):

- (10) nova-ta kniga na majka mi
new-the book of mother my
'my mother's new book'

In other languages, the form is postposed, and hence called a **postposition (str)**, as in *Urarina* (Olawsky 2006:225):

- (11) nii banaao asae
that shelter under
'under that leaf shelter'

When the relational morpheme is bound, then it is called a **case affix (str)**, as in the Russian possession construction in (12):

- (12) kniga Ivan-a
book Ivan-GEN
'Ivan's book'

We will use the term 'flag' as a cover term to describe the relational strategy, independently of whether the morpheme is bound or free. The terminology is summarized in Figure 4.3.

A particular flag, such as *of* or the genitive case suffix, is often highly polysemous: no single general meaning for the flag can be described, although the semantic relation between two specific concepts whose expressions are joined by a flag is generally clear from the context or by grammatical convention.

Case affixes are historically derived from adpositions, and are usually analyzed as case affixes when they are affixed to the noun. The grammaticalization process may give rise to a construction that is intermediate between adpositions and case affixes – namely, when the flag becomes affixed to an element that is not necessarily the noun. In the Kunuz Nubian example in (13) (Abdel-Hafiz 1988:283–84; cf. Dryer 2013e), the flag is suffixed to the last element in the referring phrase, no matter what element it is:

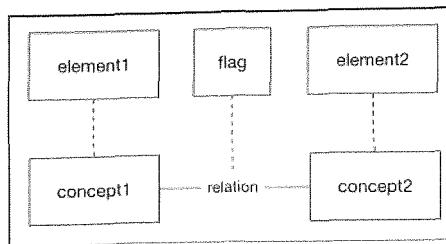


Figure 4.2 *Relational strategy for expressing the relation between two concepts*

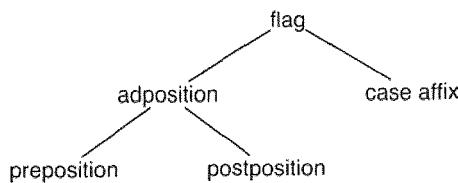


Figure 4.3 *Terminology for flags*

- (13) esey karsel=lo uski-takki-s-i
 village old=LOC born-PASS-PST-1SG
 'I was born in an old village.'

A much rarer strategy that Dryer observes is the placement of the adposition after the first element of the referring phrase. The Tümpisa Shoshone example in (14) (Dayley 1989:257; cf. Dryer 2013e), illustrates this strategy, which Dryer calls an 'inposition':

- (14) ohipim ma nati'iwantü-nna tiyaitaihwa satü
 cold.OBJ from mean-OBJ died that
 'He died from a mean cold.'

Dayley, however, analyzes *ma* 'from' simply as a postposition that occurs between the noun and any postnominal modifiers of the noun.

Yet another rare strategy is where there are two adpositions, one before the noun and one after. The term that is used for this strategy is **circumposition (str)**. Example (15) from Pashto illustrates this strategy (Penzl 1955:41; gloss added):

- (15) ter maktaba poori
 over school.OBL.II as_far_as
 'as far as the school'

Circumpositions are likely to arise in two independent grammaticalization processes, one producing the prepositional part and another producing the postpositional part. In the case of Pashto, the prepositional part is shorter, never stressed, and semantically more general (see Penzl 1955:40), suggesting that it grammaticalized earlier than the postpositional part.

Much more common is an adposition being accompanied by a case suffix, such as in the Russian example in (16) that combines the preposition *s* and the Instrumental case suffix *-em* (Janda and Clancy 2002:40, transliterated):

- (16) ona predpočita-l-a tix-uju žizn' s
 she:NOM prefer-PST-FSG quiet-FSG.ACC life:ACC **with**
 muž-em i dv-umja det'-mi
 husband-INST and two-INST child-INST.PL

'She preferred a quiet life with her husband and two children.'

Adpositions in turn are derived from either nouns or verbs. The type of noun that typically gives rise to an adposition is a 'relational noun' – that is, a noun (word referring to an object) which intrinsically implies the existence of another object. A relational noun is commonly a body part ('back,' 'face,' etc.), but may also include other nouns such as 'sin [of someone]' in example (17) from Tzutujil (Dayley 1989:153):

- (17) xch'eji jar iixoq ruu-majk jar aachi
 was_hit the woman 3SG.POSS-**because_of** the man
 'The woman was hit because of the man.' (< majk 'sin')

The verbs that give rise to adpositions typically originate in a complex predicate construction consisting of the verb denoting the action asserted in the clause, plus another verb that expresses an event connected to the main event and involves a specific participant (see section 13.3.1). An example from Yorùbà of a flag recruiting a verb meaning 'give' is given in (18) (Bamgbose 1966:77):

- (18) wón á sónwó fún mi
 they will pay_money DAT me
 'They will pay me.' (< fún 'give')

It is the latter verb, *fún*, that evolves into an adposition. Here, the giving event is reanalyzed as expressing the recipient of the paying event.

Examples (17) and (18) illustrate the use of relational strategies to express participants in events expressed by the predicate in the clause ('hit,' 'pay'). This is actually the most common use of relational strategies. In modification constructions, relational strategies are generally restricted to object modification, either possession or locative modification. The flag employed for possession (ownership, etc.) is often metaphorically derived from an expression for a locative spatial relation. The use of flagging in object modification constructions is an example of a semantic information packaging strategy (section 2.4). When flagging is used in object modification constructions, it is a strategy recruited from the prototypical function of an object phrase as an argument of a predicate. Flagging will be discussed in greater detail in Chapter 6 on predicate–argument structure in clauses.

4.4 Indexical Encoding Strategies

Indexical strategies (str) index (refer) to one of the concepts that stand in the semantic relation. Hence, indexation does not encode the semantic relation directly, but only indirectly by referring to the other concept in the semantic relation. The indexical strategy is illustrated in Figure 4.4.

Certain terms are used to describe the elements in a construction using an indexation strategy as illustrated in Figure 4.4 (Corbett 2006:4; the definitions here are slightly different than Corbett's, for reasons to be explained shortly). The **controller (str)** is the element that denotes the same referent that the index does; in Figure 4.4, this is *element2*. The **target (str)** is the element that the index is combined with, normally as an affix or as a morphological modification of the target. In Figure 4.4, the target would typically be *element1* – that is, an element other than the controller. The larger construction in which the index, the controller and the target all occur is the **domain (str)**; in Figure 4.4, the domain is represented by the box enclosing the entire construction. Finally, and perhaps most important, the **(indexation) features (str)** that are indexed are those that are associated with both the controller and the index. These features are not indicated in Figure 4.4. The most common features that are indexed are **person (sem)** (see sections 3.1.1, 4.4.1), **number (sem)** (e.g. singular, plural, dual), and **gender/class (sem)** (see section 4.4.2).

The traditional analysis of indexation uses the term 'agreement' instead, and that is the term used by Corbett, who has written extensively on the typology of this phenomenon. The term 'agreement' tends to imply an analysis in which there is a direct morphosyntactic relation between the controller and the index associated with the target. That direct morphosyntactic relation is manifested by covariance of features between the controller and the index.

A somewhat different analysis is implied by Figure 4.4, however: the index is related directly to the referent (*concept 2* in the figure), rather than to the controller (*element2* in the figure). There are two general reasons for using the somewhat different analysis. The first reason was already introduced in section 3.3.2: in many utterances, the controller (*element2*) is simply absent. The K'ichee' example (13) from section 3.3.2, repeated below as (19), exemplifies this widespread phenomenon, and Figure 4.5 illustrates it (*element1* corresponds to *c'ulu* 'marry off'):

- (19) c-Ø-u-c'ulu-bä (lē r-alc'u'al)
IPFV-3SG.ABS-3SG.ERG-marry.off-TR (the 3SG.POSS-child)
 '(He) marries (his child) off.'

In (19), one cannot have the index dependent on *element2* because *element2* is absent (assuming that one does not want to posit inaudible or invisible elements, which we do not want to do). For this reason, many typologists have opted for the more neutral term 'indexation' to describe this strategy (Croft 2001, 2013b; Haspelmath 2013).

The second reason for the alternative analysis is that "agreement" implies that the features on the index and the features of the controller always match,

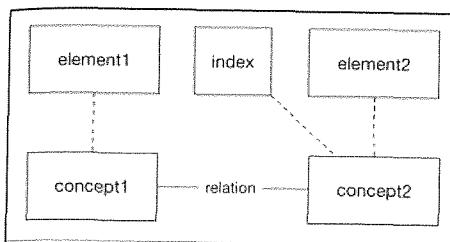


Figure 4.4 *Indexical strategy for expressing the relation between two concepts*

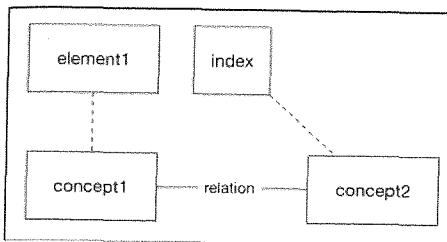


Figure 4.5 *Indexation without a controller phrase*

but in fact they often do not. This phenomenon will be discussed in more detail in section 4.4.4 (and references cited therein). The presence of mismatches in features suggests an analysis in which the features are somehow derived from the referent (*concept2* in Figures 4.4 and 4.5) separately for the index and for the controller.

The indexation analysis, however, does not solve all problems. In the situation where there is an “index” but no controller in the construction, as in Figure 4.5, why not consider this to be just a simple strategy, where the “index” should really be analyzed as *element2* (as with the Tigre pronominal possessive construction in example [7] in section 4.2)? In particular, should the “index” be analyzed simply as a pronoun, since pronouns essentially have no semantic content other than the so-called indexation features? Or, conversely, should a construction with a pronoun such as *my house* be analyzed as an instance of an indexation construction? The other major problem is how to explain the way in which an index can express a feature that does not seem to be derivable from the semantics of the concept. These problems will be discussed in section 4.4.4.

Sections 4.4.1–4.4.3 discuss the major indexical strategies. These strategies can be distinguished in part by the semantic categories they encode, but primarily by their diachronic origins.

4.4.1 Person Indexation

Person indexation (str) indicates person, and often also number and gender, of the referent. In modification, person markers generally index the object modifier, as in the Mam construction in (20) (England 1983:142):

- (20) t-kamb' meeb'a
 3SG-prize orphan
 '[the] orphan's prize'

In (20), the Third Person Singular prefix indexes the orphan.

Person indexation, like case marking, is found basically only with object modifiers. Thus, person indexation in modification constructions represents another case of a prototypical IP strategy "imported" from clause-level syntax, not unlike the "importation" of flags from clause-level syntax for object modification described in section 4.3.

Person indexation is derived historically from personal pronouns (see section 3.3.2), hence the presence of person as a semantic category expressed by the index. Some third person indexes are derived historically from demonstrative pronouns that have become anaphoric third person pronouns (see section 3.3.3). Since pronouns very frequently also express number, person indexes also usually indicate number. In particular, a single morpheme cumulatively (see section 1.6) expresses both person and number distinctions (e.g. second person singular). Person indexes also sometimes indicate gender/class (see section 3.4.2), and, more rarely, other categories such as politeness.

In the case of object modification, it is frequently the possessive pronoun that serves as the source of person indexation, as in the Frisian example in (21) (Tiersma 1999:48; gloss from Harbert 2007:159):

- (21) ús dochter har skoech
 our daughter her shoe
 'our daughter's shoe'

Person indexation is also used in combination with adpositions, such as *i7j* 'about' in the Mam example in (22) (England 1983:185; see also the Tzutujil example (17) above):

- (22) o Ø-tzaalaj xjaal t-i7j t-paa
 PST 3SG.ABS-be_content person 3SG-about 3SG-bag
 'The person was content about his bag.'

The combination of adposition and adposition indexation in (22) is illustrated in Figure 4.6. Indexation of the object of a flag is a common strategy for flagging, since flags themselves frequently originate as head nouns in possession constructions (section 4.3).

The occurrence of indexation is also sensitive to where the controller belongs on the Extended Animacy Hierarchy (section 3.1.2) and the information status continuum (section 3.4.2) (Siewierska 2004:148–59). Controllers of indexation, if restricted to a subset of object concepts, are restricted to the upper end of the Extended Animacy Hierarchy, and/or the upper end of the information status continuum.

In some languages, a predicate indexes more than one argument, using different sets of person indexes. Compare the forms of the K'ichee' verb root *tzucū* 'look for' in (23) (Mondloch 1978:47; glosses added):

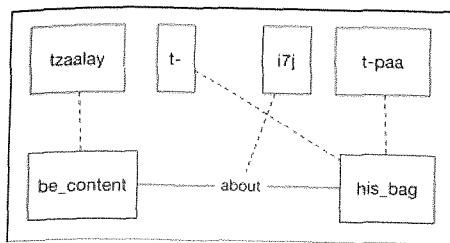


Figure 4.6 *Indexation combined with a relational strategy (indexation by an adposition) in Tzutujil*

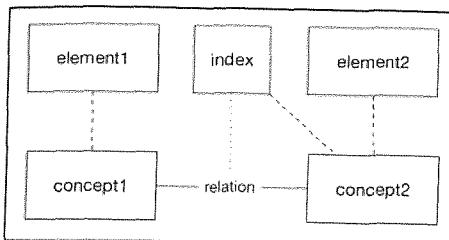


Figure 4.7 *Indexation with an index also encoding a semantic relation*

- (23)
- a. qu-ē-ka-tzucū-j
IPFV-3PL.ABS-1PL.ERG-look_for-TR
'we look for them'
 - b. c-uj-qui-tzukū-j
IPFV-1PL.ABS-3PL.ERG-look_for-TR
'they look for us'

The difference in the person forms appears to include a relational element, distinguishing the transitive subject (the Ergative forms; see section 6.3.1) from the transitive object (the Absolutive forms; see section 6.3.1). Figure 4.7 illustrates what appears to be encoded by the relevant morphemes (in examples [23a–b], there are no referring phrases corresponding to *element2* in the figure).

Should these forms be considered indexical, relational, or both? It appears that these forms are primarily indexical (Croft 2019). They derive historically from personal pronouns, not flags. The distribution of different index affixes on a predicate is dependent on a number of factors besides the semantic participant role of the argument; this is discussed in detail in Chapter 8. Finally, all indexation markers (including nonperson indexation markers, discussed in the next section) may occur without a referring phrase, as was discussed in section 3.3.2; this is what is called zero anaphora. In contrast, flags generally must occur with both of the elements that they relate (unless the adposition itself indexes the referent, in which case the referent may be absent).

4.4.2 Nonperson Indexation

Perhaps the most common strategy for the expression of modification, along with simple juxtaposition, is **nonperson indexation (str)** of the head by the modifier. Nonperson indexation includes indexation by number (singular, plural, etc.) and/or gender/class, and in some cases by other categories, including case, definiteness, and politeness (Corbett 2006:133–41). Example (24) from Russian illustrates nonperson indexation (Pulkina and Zakhava-Nekrasova n.d.:129):

(24)	molod-aja	sosna
	young-F.SG.NOM	pine(F).NOM.SG
	'young'	

In example (24), the Adjective *molodaja* ‘young’ indexes the head noun *sosna* ‘pine’ in gender/class (feminine), number (singular), and case (nominative; see below for case as an indexation feature).

Most scholarly attention has been devoted to the semantics of gender/class, and, to a lesser extent, number. We will not discuss the semantics of gender/class apart from a brief outline (useful surveys include Corbett 1991 and Aikhenvald 2000; the approach to the semantics of classifiers here follows Croft 1994a, 2017a). It is generally agreed that the traditional Western category of gender must be generalized to include what have been called noun class systems in other parts of the world, hence the rather cumbersome term **gender/class (sem)**. Gender/class is generally analyzed as an inherent characteristic of a noun. The primary semantic distinctions found in gender/class systems are based on biological sex and/or animacy (biological sex, of course, does not apply to inanimates, and not saliently to most plants and many animals). Very often, gender/class systems are not obviously semantically motivated, although it appears that, originally, gender/class forms for higher-animacy referents are extended to include lower-animacy referents via resemblance, association (including cultural associations), and possibly other semantic processes (see Dixon 1968 for a semantic analysis of Dyirbal gender/class). Gender/class inflections are frequently combined with number, and gender/class and number are often expressed cumulatively (e.g., feminine singular).

The syntax of nonperson indexation, particularly for gender/class and number, has been analyzed in some detail by Corbett (1991, 2000, 2006). An important syntactic fact about gender/class is that, although it denotes an inherent categorization of the referent – that is, the controller – it is often not morphologically expressed on the controller, but only on targets (such as modifiers). For example, in Spanish, the Masculine form of modifiers ends in *-o* and the Feminine in *-a*. Many Spanish nouns end in *-o* and are Masculine, or end in *-a* and are Feminine. But, unlike modifiers, the endings of Spanish nouns are not a consistent indicator of gender: *la mano* ‘the [Feminine] hand,’ *el día* ‘the [Masculine] day’ (e.g. Butt and Benjamin 2004:9); and other Spanish nouns do not end in *-o* or *-a*: *la vez* ‘the [Feminine] time,’ *el pez* ‘the [Masculine] fish’ (Butt and Benjamin 2004: 10). In Dyirbal, gender/class is expressed only in the noun marker (a sort of article – see below; Dixon 1972:44; glosses added):

- (25) a. bayi yaga b. balam miraj c. bala gubur
 ART.CLI man ART.CLIII black_bean ART.CLIV native_bee

Nonperson indexation is most likely to appear on demonstrative modifiers expressing deixis. Based on an unpublished survey of attributive constructions in forty-seven languages collected by Mark Donohue and myself, the hierarchy of nonperson indexation on modifiers in (26) is motivated:

- (26) deixis > property > numeral, quantifier > object, action

This synchronic hierarchy in turn suggests a diachronic path in which non-person indexation on demonstratives (deictic modifiers) is extended to property modifiers, and from there to other types of modifiers, as indicated by the > in (26). One scenario for at least the initial step is the grammaticalization of demonstratives to articles, which are then repeated on adjectives (property modifiers; Greenberg 1978a). In Modern Greek referring expressions, there is only one article when an adjective is preposed to a noun, but the article is repeated when the adjective is postposed (Holton et al. 1997:286, transliterated):

- (27) o oraíos ántras
 the handsome man
 'the handsome man'

- (28) o ántras o oraíos
 the man the handsome
 'the handsome man'

In Modern Hebrew, modifiers follow the noun, and all have a prefixed article when the referring expression is definite (Glinert 1989:104; Tlor Shenhar, pers. comm.):

- (29) ha-toxnit ha-xadaš ha-zot
 the-program the-new the-this
 'this new program'

Greenberg (1978a) describes this grammaticalization process in Niger-Congo languages.

Examples of nonperson indexation on numeral modifiers in Akçose (Hedinger 2008:50), object modifiers in Bagwala (Kibrik 2001:140; cf. Corbett 2006:47), and action modifiers, expressed as derived participles, in Polish (Sadowska 2012:413; gloss added), are given in (30), (31), and (32), respectively:

- (30) é'ked é'be
 CL8:riddles CL8:two
 'two riddles'

- (31) ehun-dar-alu-r mis-ibi
 blacksmith(M)-PL-OBL.PL-N.PL house(N)-PL
 'blacksmiths' houses'

- (32) W p̩lon-aq-ym budynk-u...
 in burn-PTCP-MSG.LOC building-LOC
 'in the burning building...'

Another category which is sometimes considered to be an instance of non-person indexation is **case (sem)** – that is, types of relations that occur between predicate and arguments (see section 6.1) or the relation between an object modifier and its head in nominal modification constructions (see section 4.1.4). For example, in Finnish, case suffixes occur on modifiers as well as the head noun (Karlsson 2018:125; gloss added):

- (33) tuo-ssa punaise-ssa kuka-ssa
 that-INNESS red-INNESS flower-INNESS
 'in that red flower'

However, unlike both person and nonperson indexes, case affixes appear to originate diachronically in adpositions. Hence, case affixes on modifiers appear to be relational in origin. A possible historical scenario for flags to spread to modifiers is suggested in section 5.4. Having said that, it is also true that forms encoding case, number, and gender on modifiers are also found, such as the Russian Feminine Singular Nominative suffix in (24). These forms may have an indexical origin, possibly as a relative pronoun (see section 19.2.2).

4.4.3 The Classifier Strategy

The third and final indexation strategy is the **classifier strategy (str)**. The most common sort of classifier is a numeral classifier, illustrated by the Chrau example in (34) (Thomas 1971:134; gloss added):

- (34) du tong aq
 one CLF.LONG crossbow
 'one crossbow'

In (34), the form *tong* denotes a long object, namely the crossbow. In other words, the classifier denotes the same referent as *the crossbow*. The classifier strategy is illustrated in Figure 4.8.

Syntactically, numerals are almost always contiguous to the classifier (Greenberg 1977), suggesting that numeral classifiers as indexes are associated with the modifying numeral rather than the head noun. In some cases, the classifying morpheme has fused with the numeral, as in Pohnpeian (Ponapean) (Rehg 1981:124–35) and in Yurok, illustrated in (35) (Robins 1958:87–88):

- (35) nahkseyl 'three (humans)'
 nahksoh 'three (round objects)'
 n̩ahksipi? 'three (tools, etc.)'
 nahksek' 'three (ropes, worms, snakes etc.)'
 (etc.)

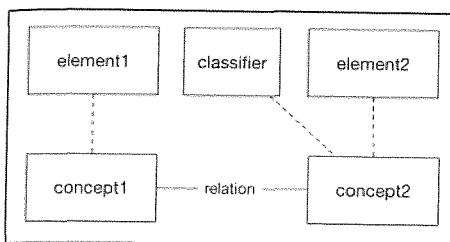


Figure 4.8 *The classifier indexical strategy*

The classifier construction abstractly represented in Figure 4.8 is almost identical to the (nonperson) indexation construction described in section 4.4.2. The primary differences have to do with the semantic categories of classifiers and their diachronic source in contrast with nonperson indexation. Classifiers encode a variety of semantic categories, whereas nonperson indexes are restricted chiefly to number and gender/class. Classifiers originate primarily in nouns (but also as verbs in some cases – see below), whereas nonperson indexes originate as pronouns (via articles). However, classifiers and nonperson indexes are found with many of the same semantic types of modifiers, and so may be difficult to distinguish.

As with gender/class, the greatest amount of research has been conducted into the semantics of classifiers, and only a brief summary is given here (see Adams 1989 and Aikhenvald 2000 for a more extensive survey; the summary here follows Croft 1994a). The core or prototypical numeral classifier system indexes the referent in terms of inherent characteristics of the category of the head noun, and expresses the unit status of the referent, which is then quantified by the numeral; other types of classifiers with numerals will be discussed in section 5.2.2.

Numerical classifier systems have a classifier that distinguishes humans, or animates including humans, from nonhuman or inanimates; if there are multiple human classifiers, they distinguish social status or sex. The nonhuman/inanimate classifiers are most likely to include a classification by the dimensionality of the object (1-dimensional ‘long object,’ 2-dimensional ‘flat object,’ 3-dimensional ‘round object’); the flexibility of the object (rigid classes contrasting with nonrigid classes: 1-dimensional ‘ropelike object,’ 2-dimensional ‘clothlike object’); and the function of the object (e.g. vehicle). As with gender/class categories, numerical classifiers are extended to different types of referents, presumably through semantic processes, and the motivation for using a numerical classifier for certain referents is not always obvious.

Numerical classifiers mostly originate as nouns, and in fact are sometimes identical to nouns in the language. The latter phenomenon gives rise to **repeaters** (*str*), classifiers that are identical to the noun that they classify, as in (36) from Lao (Enfield 2007:122; numerals indicate tone, 0 = unstressed):

- (36) kuu3 si0 hêt1 hang2 sip2 hang2
 1SG.BASE IRR make nest ten **nest.CLF**
 'I'm going to make ten nests (for the chickens.)'

Numerical classifiers can appear without the noun (Greenberg 1977:169); in this respect numerical classifiers are like other indexes. When the classifier is used without its noun, it is a generalized noun used in an anaphoric function, or even in first mention (specific indefinite function). Example (37) from Kilivila shows a numerical classifier used without its noun in an anaphoric function (Senft 1996:21; cf. Aikhenvald 2000:331; see also section 5.4).

- (37) a-tatai tataba. tauwau tabalu m-to-si-na
 1SG-carve tataba_board men Tabalu_subclan this-CL.M-PL.this
 ma-ke-na si koni
 this-CL.WOODEN-this their sign_of_honor
 'I carve a tataba board.' 'These men belonging to the Tabalu subclan, this [board] is their sign of honor.'

Classifiers may also appear without a numeral in some languages, functioning as an article. In Cantonese, a classifier without a numeral indicates a specific as opposed to generic entity (Matthews and Yip 1994:93):

- (38) jī bât hóu hóu sé
 CLF pen good good write
 'This/that pen is good to write with.'

The classifier strategy may be extended from numerals to other semantic modifier types, apparently along the following hierarchy of modifier types, where > indicates path of extension:

numerals, quantifiers > deixis > property > action, object

As with nonperson indexation, this synchronic hierarchy implies a diachronic pathway by which numeral classifiers are extended to deictic modifiers, then to property modifiers, and finally to action and/or object modifiers (Croft 1994a). This is not the only diachronic pathway that results in classifiers, however (Croft 1994a; see below).

In Cantonese, the numerical classifier strategy is often also used with quantifiers – at least those that quantify units, such as 'each' (Matthews and Yip 1994:93):

- (39) múih ga chē
 each CLF.VEHICLE car
 'each car'

The first extension beyond the numerical/quantifier type is to demonstratives (Greenberg 1977:169, 191); this is illustrated in (40) for Cantonese (Matthews and Yip 1994:94):

- (40) a. nī go yāhn b. gó fūk wá
 this CLF.HUMAN person that CLF.RECTANGULAR picture
 'this person' 'that picture'

The classifier strategy may also be extended to property modifiers (adjectives). In Thai, a classifier may optionally combine with a property modifier, making the referring expression 'more specific' (Iwasaki and Ingkaphirom 2005:66–67):

- (41) kháw tham aahāan caan yày sāmràp ḥaan khuu-níi
 3 make food CLF big for party tonight
 'She made a big dish for the party tonight.'

The classifier strategy is even extended to possessive and action modifiers (relative clauses), in (42) and (43) respectively, from Cantonese (Matthews and Yip 1994:108, 111; the relative clause in (43) is in brackets):

- (42) lóuhbáan ga chē
 boss CLF car
 'the boss's car'

- (43) [ngóhdeih hái Faatgwok sihk] dī yéh géi hóu-sihk ga
 we in France eat CLF food quite good-eat PRT
 'The food we ate in France was pretty good.'

In some languages, many modifiers index their heads through a system of affixes that encodes a large number of semantic distinctions, including distinctions of the dimensionality, rigidity, and function typical of numeral classifiers. These indexation systems may have originated in numeral classifier systems. Miraña has two indexation systems for modifiers (and also predicates; Seifart 2005). The first system distinguishes sex, animacy, and number, not unlike the nonperson indexation systems described in section 4.4.2. The second system consists of sixty-six classifiers that distinguish inanimate objects by shape, as well as plants. The second system even includes repeaters, not unlike many numeral classifier systems.

A distinct set of classifiers is used for possession in a small number of languages. Possessive classifiers are found in some Austronesian languages, as well as a few languages in Central and South America. Example (44) illustrates a possessive classifier construction in Kosraean (Kusaiean; Lee 1975:117):

- (44) mos suhnuh-k
 breadfruit CLF.PLANT-1SG
 'my breadfruit tree'

Possessive classifiers are distinct from numeral classifiers; they even coexist as separate systems in Woleaian (Sohn 1975:58–65). Possessive classifiers appear to be restricted to object modification.

The most common classification categories in both the Oceanic and Native American languages are for edible and potable objects (Croft 1994a), with other classifiers for function or the value of the object.

Although we have included possessive classifiers as another instance of indexation, in fact the most basic edible and potable possessive classifiers in Austronesian languages and some other languages often come from verbs, as in Manam (Lichtenberk 1983a:158):

- (45) paŋana ?ana-gu
 head CLF.EDIBLE-1SG
 'my head' (e.g. fish head, for my consumption) (< ?an 'eat' [Lichtenberk 1983a:161])

For this reason, Lichtenberk (1983a) and others call them 'relational classifiers.' However, other possessive classifiers are nominal in origin, and even the etymologically verbal classifiers can stand alone without the referring phrase (Lichtenberk 1983b:292), just as person and nonperson indexes do. Nevertheless, possessive classifiers do specify the type of use that the possessor makes of the object, as in Paamese (Crowley 1995:388):

ani ā-n	'his/her coconut (which s/he plans to eat the flesh of)'
ani emo-n	'his/her coconut (which s/he plans to drink the water of)'
ani ese-n	'his/her coconut (which is growing on his/her land)'
ani one-n	'his/her coconut (which s/he plans to use in any other way, e.g. to stop the car rolling while changing a tire, to knock her husband unconscious while sleeping, to put on top of a pile of papers to stop the wind blowing them away, etc.)'

We conclude that classifiers (even possessive classifiers) are basically an instance of the indexical strategy, but treat classifiers as a distinct strategy from nonperson indexation.

4.4.4 Mismatches in Indexation Features and the Agreement Hierarchy

One important property of indexation is the partial independence of the grammatical form of the target from the grammatical properties of the controller. The traditional term, "agreement," suggests that the grammatical features expressed by the target should match those of the controller. In fact, mismatches frequently occur with all the major categories of indexation, in particular gender/class and number. This is one of the reasons that the term 'indexation' is used in this book instead of 'agreement.' The contexts in which mismatches occur are many and varied (see Corbett 1979, 1983, 1991, 2000, 2006). A few examples are given here. Some of the examples include indexation by predicates and anaphoric pronouns, as the full range of indexation constructions is relevant here.

A simple case of mismatch is where the semantic distinctions made in the target and controller do not match. In Inari Sami, the controller referring expression distinguishes singular and plural number, while the target predicate distinguishes singular, dual, and plural (Toivonen 2007:299; cf. Corbett 2006:146):

- (46) alma-h kuá'lást-ava onne
 man-PL.NOM fish-3DU today
 'The two men are fishing today.'

Another mismatch occurs where the controller lacks a gender, since it is a nonword. In Romanian, targets of nonwords use a 'default' Masculine gender (Corbett 1991:213, from Donka Farkas, pers. comm.):

- (47) un bum puternic
 INDF.M.SG "boom" strong(M.SG)
 'a loud boom'

In Jingulu, which has a typical Aboriginal Australian four-class system – masculine, feminine, neuter, vegetable – the four classes can replace each other going from right to left in the list, leading to superclasses. For example, the target of a noun in the vegetable class may index it using the neuter class (Pensalfini 2011:167; cf. Corbett 2006:152; V = vegetable gender):

- (48) ngininiki barndumi
 this(N) lower_back(V)
 'this lower back'

Conjoined noun phrases as controllers inevitably lead to mismatches if the conjoined phrases have, for instance, different genders. One solution is for the target to index plurality. In other cases, however, the target indexes the gender of one of the conjoined phrases, as in Swahili (Corbett 2006:169, from Bokamba 1985:45):

- (49) a. ki-ti na m-guu wa meza u-me-vunjika
 SG-chair(CL7/8) and SG-leg(CL3/4) of table CL3-PRF-broken
 'the chair and the leg of the table are broken'
 b. m-guu wa meza na ki-ti ki-me-vunjika
 SG-leg(CL3/4) of table and SG-chair(CL7/8) CL7-PRF-broken
 'the leg of the table and the chair are broken'

Swahili noun classes are indicated by the numerals (the paired numerals refer to singular and plural classes). In (49a), the predicate 'be broken' indexes the noun class of 'leg of the table' (class 3), the nearest referring expression. In (49b), the conjoined phrases are reversed in order, and so the predicate indexes the noun class of 'chair' instead (class 7).

An example of an index providing more information about the referent than is in the controller is found in one strategy for **associative constructions (cxn)** (Corbett 2006:155), illustrated for the Talitsk dialect of Russian in (50) (Corbett 2000:191, from Bogdanov 1968):

- (50) Góša pr'ijéxal'i!
 Gosha arrive:PST.PL
 'Gosha and his family have arrived!'

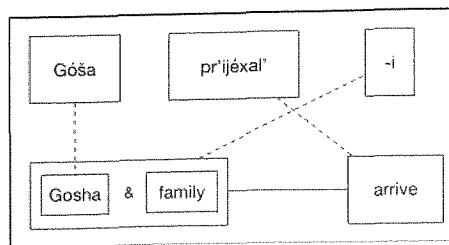


Figure 4.9 *The mismatched feature strategy for associative constructions*

An associative construction is a construction for expressing an individual and an associated group. In the strategy for an associative construction found in example (50), the target indexes plurality of the group although the controller refers only to a single salient member of the group. The mismatch in example (50) is illustrated in Figure 4.9.

A slightly different construction that also has a mismatch in features between index and controller is the **inclusory construction (cxn)** (Corbett 2000:232–33; Lichtenberk 2000), illustrated for Lower Sorbian in (51) (Stone 1993:663, from Janaš 1984:171–72; glossed by Corbett 2006:172):

- (51) smej z nan-om šach gra-ł-ej
 AUX.1DU with father-SG.INS chess(SG.ACC) play-PST-DU
 ‘Father and I played chess.’

An inclusory construction is a construction for expressing a first or second person participant and a third person participant (or participants). In the strategy for an inclusory construction found in example (51), the target uses a nonsingular first (or second) person form that informs the hearer that a speech act participant is included in the group which is otherwise indicated only by the referring phrase, namely ‘with father’ in (51). The mismatch in example (51) is illustrated in Figure 4.10 (the other participant in the event, the chess game, and the representation of the relational *z...-om* ‘with...-INS,’ are left out for ease of visualization).

A large class of mismatches between controller and indexes on targets is constrained by a robust typological universal, the **Agreement Hierarchy** (Corbett 1979, 1983, 1991, 2006, among others). The Agreement Hierarchy is manifested in cases where there are (at least) two different options for the index of a target with respect to the controller categories. A simple example is the set of (typically British) English group nouns such as *committee* (Corbett 2006:206):

- (52) a. The committee has [SG] decided.
 b. The committee have [PL] decided.

The alternatives in the choice between singular and plural indexation for *committee* are usually characterized as ‘syntactic agreement’ and ‘semantic agreement’, respectively: *committee* is singular in morphological form but

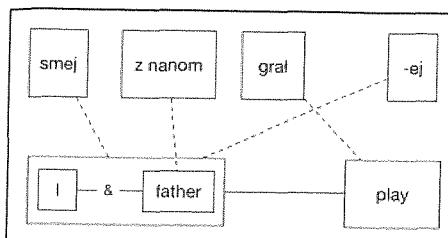


Figure 4.10 *The mismatched feature strategy for inclusory constructions*

semantically plural. It is actually better to think of the choices as ranked by “degrees of semanticity,” where in this case singular and plural represent different construals of the referent (Croft 2013a). What matters is that one choice is less semantic than another; the less semantic choice corresponds to the same construal of the referent found in the grammatical form of the controller (Croft 2013a:111), i.e. what is usually characterized as ‘syntactic agreement.’³

In (British) English, either choice is available for the indexation of predicates, as in (a–b). For the indexation of modifiers, only the less semantic singular is acceptable: *this/*these committee*. However, relative pronouns may go either way, as in (53a) (the more semantic choice is the human relative pronoun *who*; Corbett 2006:207), as may anaphoric personal pronouns, as in (53b):

- (53) a. The committee, which **has** decided / **who have** decided...
 b. The committee...**It/They...**

These four contexts form a hierarchy, the Agreement Hierarchy (Corbett 1979:204):

- (54) attributive (modifier) — predicate — relative pronoun — personal pronoun

The Agreement Hierarchy constrains the constructions in which the feature on the index of a referent can vary relative to the feature on the referent denoted by the controller (if there is a controller; see note 3). Specifically, targets to the left on the hierarchy (54) are more likely to index ‘syntactic’ (or less semantic) features than targets to the right on the hierarchy; and if a target indexes ‘syntactic’ features, then all targets to the left on the hierarchy will also index ‘syntactic’ features. The Agreement Hierarchy is quantitative as well as qualitative: if

³ The reason for this rather circuitous definition of ‘syntactic agreement’ as semantic construal is intended to account for the use of an indexing form when there is no controller phrase in the discourse, as with examples (6)–(7) in section 3.3.1. There, the French Feminine and Masculine genders *la* and *le* evoke the type of referent (*table* [Feminine] vs. *bureau* [Masculine]), even though the controller nouns are not expressed in the prior discourse. Thus, the ‘grammatical’ genders are somehow associated with the referent, which is the only entity available in the discourse context.

multiple targets allow either ‘syntactic’ or ‘(more) semantic’ indexing, then targets farther to the left on the hierarchy will have a higher text frequency of ‘syntactic’ indexing.

The English *committee* example conforms to the Agreement Hierarchy: the demonstrative modifier allows only the less semantic feature (singular), but the predicate, relative pronoun, and personal pronoun allows indexation in either the less or more semantic feature (singular or plural). Corbett extensively documents examples conforming to the Agreement Hierarchy (1979, 1983, 1991, 2000, 2006, among others). We give one representative example here (Corbett 2006:208–9), where both qualitative and quantitative evidence supports the Agreement Hierarchy.

In Serbian/Croatian/Bosnian, nouns modified by the numerals ‘two,’ ‘three,’ and ‘four’ take the suffix *-a*, a remnant of an old dual number inflection which has been reanalyzed as a Genitive Singular. For our purposes, the relevant fact is that certain modifiers also take *-a* (glossed **REMN** for ‘Remnant’) indexing a property of the noun’s form, a less semantic feature:

(55)	dv-a	dobr-a	brat-a	
	two-M.NOM	good-REMN	brother(M)-GEN.SG	
‘two good brothers’				

The predicate indexes the noun in either the remnant form *-a* or in the more semantic Masculine Plural:

(56)	on-a	dv-a	brat-a	su
	that-REMN	two-M.NOM	brother(M)-GEN.SG	AUX.3PL
nesta-l-a/nesta-l-i				
disappear-PST-REMN/disappear-PST-M.PL				
‘Those two brothers disappeared.’				

The same is true of the relative pronoun in a relative clause (action modification construction); however, the anaphoric pronoun occurs only in the more semantic Masculine Plural:

(57)	dv-a	brat-a	koj-a/koj-i...	On-i...
	two-M.NOM	brother(M)-GEN.SG	who-REMN/who-M.PL...	3-M.PL...
‘two brothers who...They...’				

These facts, including the near-unacceptability of the Masculine Plural for the modifying construction and the unacceptability of the Remnant inflection for the anaphoric pronoun, conform to the Agreement Hierarchy. In addition, text counts demonstrate that, where both possibilities are acceptable, the proportion of the more semantic feature being indexed increases from predicate indexation to relative pronoun indexation, indicated in Table 4.2 (Corbett 2006:209, citing Sand 1971 and Leko 2000).

An important fact about the Agreement Hierarchy is that it constrains person indexes, nonperson indexes, and also anaphoric pronouns. That is, the Agreement

Table 4.2 *Indexation of the more semantic feature with lower numerals in Serbian/Croatian/Bosnian*

	attributive	predicate	relative pronoun	personal pronoun
Sand (1971); Serbian texts	[0%]	18% (n = 376)	62% (n = 32)	[100%]
Leko (2000); Bosnian texts	1% (n = 507)	42% (n = 259)	56% (n = 52)	[100%] (n = 18)

Hierarchy is a typological universal that pertains to indexes in general; and it also implies that anaphoric pronouns should be treated as a type of index.

4.5 The Linker Encoding Strategy, and a Summary of Morphosyntactic Encoding Strategies

In this section, we describe linkers and other more grammaticalized strategies, before summarizing the morphosyntactic encoding strategies found in constructions.

A **linker strategy (str)** as defined here employs a morpheme that is invariant with respect to the semantic features that characterized flagging and indexing, which signals a general relationship between two elements. The Farsi (Persian) *ezafe* construction is an example of a linker strategy (Lazard 1992:66; gloss added):

- (58) a. âb-e garm b. ketâb-e Hasan
 water-LNK hot book-LNK Hasan
 'hot water' 'Hasan's book'

The linker strategy is illustrated in Figure 4.11. In Figure 4.11, there is no clear semantic component to which the linker is mapped. The reason for this is that it is basically impossible to specify what meaning a linker has, synchronically. A linker, by definition, does not contrast with any other morpheme used to relate the relevant categories of concepts (a modifier and its head, or a predicate and its arguments). This makes it impossible to identify a linker as relational or indexical. It simply links the two elements together in a particular construction.

Linkers are more grammaticalized elements, and they appear to have originated historically from either relational or indexical morphemes (i.e. from a morpheme denoting either *relation* or *concept2* in Figure 4.11), or even a noun similar to classifiers. The English possessive clitic -'s in *John's hat* is most likely to have originated from the Old English Genitive case suffix (Allen 1997), a flag. But the Farsi *ezafe* construction is derived from the indefinite pronoun (Haider and Zwanziger 1984). In Modern Arabic varieties, linkers have arisen from different sources, including a demonstrative-relative pronoun in Moroccan

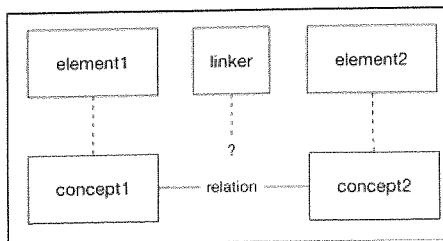


Figure 4.11 *Linker strategy for expressing the relation between two concepts*

and Algerian Arabic varieties (Harning 1980:112–13) and even a noun meaning ‘possession’ or ‘property’ in Tunisian Arabic (Harning 1980:103):

- (59) el-hōs mtāf-i
 the-house POSS.LNK-my
 ‘my house’

The linker strategy occurs in most semantic modifier types. The Farsi *ezafe* construction in (58) is used in both object and property modification. In some languages, linkers are used for object, property, and action modification, for example Mandarin Chinese *de* (Li and Thompson 1981:116–26; Lin 2016), Cantonese *ge* (Matthews and Yip 1994:107, 110–11, 158–59), and Lango *a* (Noonan 1992:154–59, 215; *a* is always fused with a relativizer *mē* in action modification). Since the linker is highly grammaticalized, and since in these languages it has been extended to a wide range of semantic modifier types, it is difficult to identify its origin. Because Lango *a* is always fused with a relativizer *mē*, it seems more likely to have an origin in object modification. The Mandarin *de* appears also to have its origin in object modification, although action and property modification functions also emerge early (see Lin 2016:178–87 and references cited therein). But the Farsi *ezafe* has its origin in a relative clause marker. Still, it is not surprising that a highly grammaticalized modifier construction is also one that has spread to a wide range of semantic modifier types.

Farther down the grammaticalization path, there are constructions in which there is no synchronically discrete third morpheme joining the two elements (here, modifier and head). Instead, one of the two elements in the construction has a **special form (str)** that occurs only in the construction. The special form is probably the result of the fusion of an unknown third morpheme with the element in the construction.

For example, a common object modification construction is a special form of the pronominal possessor, which cannot be synchronically analyzed as consisting of two morphemes. A typical example is found in Yorùbà (Rowlands 1969:46):

- (60) ilé wa
 house our [cf. *a* ‘we’]
 ‘our house’

It is plausible that the special modifying possessive pronominal form originated in the fusion of a flag with the first person plural pronoun in the remote prehistory of Yorùbà.

There also occur special forms of the head of the construction. In Semitic, the special form is known as the ‘construct’ form (it is known in other languages as ‘combining form’). An example of the construct form in nominal modifier construction in Syrian Arabic is given in (61) (Cowell 1964:163):

- (61) ?əsset haz-zalame
 story:CONST that-fellow [cf. ?əṣṣa ‘story’]
 ‘that fellow’s story’

Finally, there is the possibility of **fusion (str)**, in which the two elements in the construction expressing the relationship between two concepts themselves fuse into a single word that is synchronically unanalyzable. An example from object modification is suppletion of certain kin terms in Lakota (Boas and Deloria 1941:130):

- (62) ina/nihq/huku
 ‘my mother/your mother/his, her mother’

We may now summarize all of the morphosyntactic strategies for relating two elements in a syntactic construction, and the grammaticalization paths that link them, in Figure 4.12.

The strategies in Figure 4.12 are basically organized by their diachronic origins and evolution. Simple strategies can evolve from independent juxtaposed words to compounds. Indexical strategies originate in pronouns – personal, demonstrative, or relative. If they lose their contrasting forms, indexes become linkers. Classifiers originate in nouns, and sometimes verbs; they come to function like nonperson indexes, and if they lose their contrasting forms, classifiers become linkers. Relational strategies originate in nouns and verbs; adpositions evolve into bound case affixes, and if they lose their contrasting forms, they too become linkers. A linker may fuse morphologically with one of the elements of the construction, leading to a special form for that element that occurs just in that construction (like possessive pronouns or the Semitic construct/combining form). Finally, in very rare cases, there is a single morpheme that conflates expression of both elements, which possibly arose from a process of morphological fusion, though the history of such rare forms is so deep that we will never know their origins.

All of the morphosyntactic strategies described in this chapter can occur in various combinations. For example, the Turkish *Izafet* nominal modification construction combines case marking (a suffix) on the object modifier with person indexation on the head noun (Lewis 1967:42; gloss added):

- (63) uzman-in rapor-u
 man-GEN report-3SG
 ‘[the] man’s report’

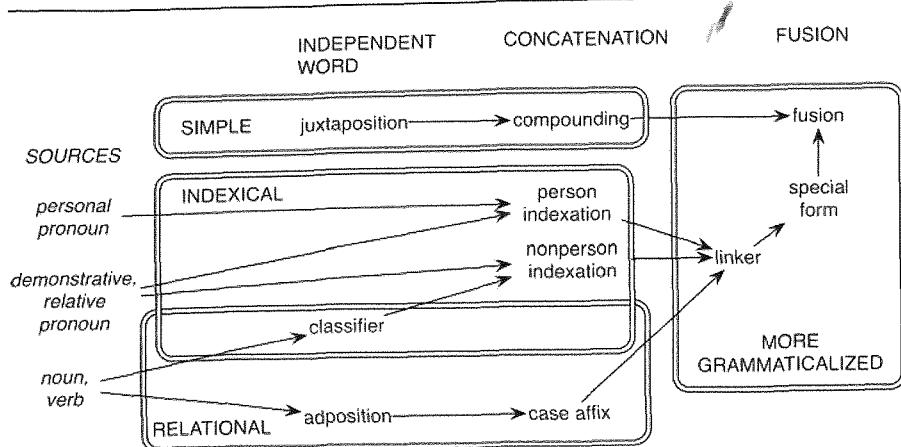


Figure 4.12 *Strategies for encoding grammatical relationships between concepts, and their grammaticalization paths*

A nominal modifier construction in Kifuliiru combines a linker (the Associative Marker, glossed AM) with a gender/class form indexing the object modifier (Van Otterloo 2011:335; AU = augment):

- (64) í=kí-lálí ky-á=hì-ryá hí-kólò
 AU=CL7-trail CL7-AM=CL19-that.D3 CL19-monkey
 'the trail of that monkey'

This concludes our overview of the semantic types of modifiers and the strategies used in modification constructions. Chapter 5 will discuss a number of topics that illustrate some of the complexities of modification constructions.

Terms Defined in this Chapter

4.1 Information Packaging and Semantics of Modifiers

4.1.1 The Information Packaging Function of Modification

subcategorizing (*inf*), selecting (*inf*), situating (*inf*)

4.1.2 Property Concepts and Scalar Admodifiers: Sorting Referents into (Sub) Types

material term (*cxn*), gender term (*cxn*), color term (*cxn*), shape term (*cxn*), age term (*cxn*), value term (*cxn*), dimension term (*cxn*), physical property term (*cxn*), human propensity term (*cxn*), antonyms (*cxn*), complementary (*cxn*), reference point (*sem*), intensifier (*cxn*), downtoner (*cxn*), comparative (*cxn*), superlative (*cxn*), measurement (*cxn*), degree affix (*str*), degree modifier (*str*)

4.1.3 Numerals, Quantifiers, and Set-Member Modifiers: Selecting a Referent

cardinal numeral (*cxn*), quantifier (*cxn*), vague numeral (*cxn*), amount term (*cxn*), proportional quantifier (*cxn*), distributive quantifier (*cxn*), set-member

term (*cxn*), ordinal numeral (*cxn*), measure term (*cxn*), container term (*cxn*), form term (*cxn*), group term (*cxn*), piece term (*cxn*), species term (*cxn*), mensural term (*cxn*)

4.1.4 Nominal (Object) Modification Constructions: Situating a Referent
ownership (*sem*), body part relation (*sem*), part-whole relation (*sem*), kinship relation (*sem*), possession relation (*sem*), possessor (*sem*), possessum (*sem*), possessive modification construction (a.k.a. attributive possession) (*cxn*), possessive modifier (a.k.a. genitive) phrase (*cxn*), alienable possession (*cxn*), inalienable possession (*cxn*), figure-ground spatial relation (*sem*), locative modification construction (*cxn*), locative modifier (phrase) (*cxn*)

4.1.5 Action Modification

4.2 Simple Encoding Strategies, and Word Order

simple strategy (*str*), juxtaposition (*str*), compounding (*str*), affixation (*str*), word order (*str*)

4.3 Relational Encoding Strategies: Flags

relational strategy (*str*), flag (a.k.a. case marker) (*str*), adposition (*str*), preposition (*str*), postposition (*str*), case affix (*str*), circumposition (*str*)

4.4 Indexical Encoding Strategies

indexical strategy (indexation) (*str*), controller (*str*), target (*str*), domain (*str*), (indexation) feature (*str*), person (*sem*), number (*sem*), gender/class (*sem*)

4.4.1 Person Indexation

person indexation (*str*)

4.4.2 Nonperson Indexation, and the Agreement Hierarchy

nonperson indexation (*str*), case (*sem*)

4.4.3 The Classifier Strategy

classifier (*str*), repeater (*str*)

4.4.4 Mismatches in Indexation Features and the Agreement Hierarchy

associative construction (*cxn*), inclusory construction (*cxn*), Agreement Hierarchy

4.5 The Linker Encoding Strategy, and a Summary of Morphosyntactic Encoding Strategies

linker (*str*), special form (*str*), fusion (*str*)

5 The Structure and Origin of Modification Constructions

5.1 Introduction

In Chapter 4, the major morphosyntactic strategies for relating syntactic elements were introduced, and their occurrence and spread across constructions for different semantic types of modifiers were described. In this chapter, we describe several issues in the crosslinguistic analysis of modification constructions. In section 5.2, it will be argued that there is a modification–reference continuum from property modification through different types of object modification (objects being prototypically referents, hence the term ‘modification–reference continuum’). In section 5.3, we introduce some basic generalizations about the word order of modifiers with respect to the head noun that they modify, and with respect to each other. In section 5.4, we discuss anaphoric-headed referring phrases and the diachronic origins of modification constructions.

5.2 The Modification–Reference Continuum

5.2.1 Anchoring and Non-Anchoring Nominal Modification Constructions

In section 4.1.4, the common semantic relations between object modifier and head noun in nominal constructions were described: ownership, body part (more generally, part–whole), kinship, and figure–ground. In this section, we focus on the variation in information packaging that arises because the semantic type of the modifier, an object concept, is prototypically used for reference. We will see that the prototypically referring function is preserved to some degree even when the object concept is used for modification.

A number of theorists have proposed a distinction in the information packaging function of object modification found in nominal modification constructions. The primary function that is posited for the object modifier in a nominal modification construction such as *Peter's bag* is **anchoring (inf)**. The referent of the object modifier expression, in this case Peter, serves as an **anchor (inf)** (Fraurud 1990; Hawkins 1991; Koptjevskaja-Tamm 2002,

2003a,b, 2004, 2013) or reference point¹ (Langacker 1991, 1993; Taylor 1996) to identify the referent of the head: ‘Thus, knowing who Peter is we can identify Peter’s bag, arm, brother’ (Koptjevskaja-Tamm 2002:147). The anchor / reference point function also describes the function of the spatial locative modifier described in section 4.1.4: in *the bowl on the kitchen table*, the kitchen table (the ground) serves as the anchor for identifying which bowl (the figure) the speaker intends to refer to.

The anchoring information packaging function generally requires that the modifying object denotes an individual (see section 3.1.1), since an individual’s identity easily serves as an anchor for the head noun referent’s identity. The anchor is also preferably highly accessible (see section 3.3): since the purpose of modification is to help the hearer to identify the referent, a highly accessible anchor will lead to easier identification by the hearer. For this reason, Koptjevskaja-Tamm (and Kay and Zimmer before her; see below) restricts possessive constructions to only those nominal modification constructions with referential object modifiers (Koptjevskaja-Tamm 2003b). We will follow this usage here.

The prototypical anchor is human, and expressed by a proper noun or, most prototypically, by a personal pronoun. Proper nouns occur frequently as object modifiers (Koptjevskaja-Tamm 2002:149) and personal pronouns are the most common object modifiers, albeit almost entirely in inalienable possession constructions (Croft 1991:87–93; see section 5.2.3 for discussion of inalienable possession constructions). Since anchoring allows the identification of a specific individual referent, the anchoring function is essentially a subtype of the situating subfunction of the modifying information packaging function (see section 4.1.1), characteristic of determiners (see section 3.2). Hence, anchoring involves both reference (to the anchor) and modification (establishing the identity of the head of the referring phrase).

Koptjevskaja-Tamm contrasts **anchoring constructions (cxn)** such as *Peter’s bag* with what she calls **non-anchoring constructions (cxn)**, such as *women’s magazine*. Koptjevskaja-Tamm describes a non-anchoring construction as expressing ‘relations which do not serve to identify the referent of the head, but rather to characterize it’ (Koptjevskaja-Tamm 2003a:552); and states that the nominal modifier is used to ‘classify, describe or qualify the class of entities denoted by [the head]’ (Koptjevskaja-Tamm 2002:154). Koptjevskaja-Tamm prefers the term ‘non-anchoring’ to describe this function, but we will use a positive term, **typifying (inf)**, to describe the non-anchoring function and **typifying construction (cxn)** as an alternative term to describe the construction expressing that function (cf. Koptjevskaja-Tamm 2013:273).

The typifying information packaging function has the following characteristics (Koptjevskaja-Tamm 2002:154):

¹ The term ‘reference point’ has another, more specific, use in this textbook (see section 4.1.2), so we will use ‘anchor’ only.

- the object modifier is only type identifiable ('non-referential' in Koptjevskaia-Tamm's terms);
- the modifier-head combination refers to a subclass of a broader class and often functions as a classificatory label for it, suggesting that the modifier and the head together correspond to one concept, but
- the head cannot be identified via its relation to the modifier.

For example, in *a women's magazine*, *women* does not refer to a specific set of women; the phrase as a whole denotes a particular subclass of magazines; and the referent of *magazine* cannot be identified by the modifier *women's*, in contrast to *Janet's magazine*, where the identity of Janet allows the hearer to identify the referent of *magazine* in the discourse context. More generally, the typifying function is basically the same as the subcategorizing subfunction of modification (see section 4.1.1), characteristic of property concepts, the prototypical modifiers. Hence, typifying is more like the prototypical modifying function, as will be seen below.²

Typifying constructions are often described as 'compounds' (e.g. Kay and Zimmer 1990). Examples offered for 'compounds' in English include *car key* and *hermit thrush* (a bird). But the term 'compound' is used ambiguously. An example like *car key* is defined both functionally – a typifying construction – and morphosyntactically – the strategy of juxtaposed simple nouns, usually analyzed as a single word even though they are written orthographically with a space. But the typifying function and the juxtaposed noun strategy do not have to go together: the juxtaposed noun form is just one strategy for expressing typifying constructions. We have already seen that English allows another strategy, the linker strategy with -'s found in *women's magazine*, for the typifying construction. Across languages, we will see that a wide range of strategies is used for typifying constructions (Pepper 2020; see section 5.2.2). For this reason, we will avoid the term 'compound' for a typifying construction, using it only for the strategy of juxtaposition (see section 4.2) of two nouns.

Koptjevskaia-Tamm distinguishes two types of typifying/non-anchoring constructions in analyzing certain Swedish constructions. The Swedish constructions in question differ in form from the Swedish anchoring nominal modification construction in that the genitive phrase lacks an article, although it contains a Genitive suffix. In one type, the 'classifying genitives,' the typifying object modifier provides a means for categorizing the head referent (Koptjevskaia-Tamm 2003a:540; COMM = common gender):

² Locative modification constructions (see section 4.1.4) are also anchoring constructions, and contrast with typifying constructions. For example, in *the table in the kitchen*, the locative modifier *in the kitchen* serves as an anchor to allow identification of the particular table referred to. In contrast, *kitchen table* describes the subtype of the table and does not identify a particular table. In English, the typifying construction is quite different from the locative modification construction. However, as noted in section 4.1.4, there is no crosslinguistic survey of locative modification constructions or of their typifying counterparts.

(1)	ett barnlitterature-en-s a child.literature-DEF.COMM-GEN	mästerverk masterpiece
'a masterpiece of children's literature'		

The English translation also represents a construction that differs from the typical anchoring object modification construction in that the modifying phrase lacks an article.

In the other, the ‘qualitative genitive,’ the typifying object modifier provides qualitative characteristics of the head referent (Koptjevskaja-Tamm 2003a:537–38; gloss added):

(2)	en synd-en-s a sin-DEF.COMM-GEN	kvinna woman
'a woman of sin'		

That is, the ‘qualitative genitive’ even more closely resembles a property modifier than the ‘classifying genitive.’ In English, one can paraphrase *a woman of sin* as *a sinful woman*, using a construction in which a derived Adjective form (with *-ful*) is used instead of an *of*-construction lacking an article. Nevertheless, both qualitative modification and typifying modification perform the subcategorizing subfunction of the information packaging function of modification, and, as will be seen below, they may also share constructional strategies.

Pepper (2020) focuses on the condition that a non-anchoring construction corresponds to a single concept. Pepper proposes that the non-anchoring construction in this sense be called a **binominal lexeme construction (cxn)** (Pepper 2020:13). A binominal lexeme is an example of a stage in the process of lexicalization, where a typifying construction evolves to conventionally denote a single particular object concept. Binominal lexeme constructions represent a further diachronic stage in a continuum of constructions from anchoring object modification to reference:

anchoring → typifying → binominal lexeme → simple
construction construction construction noun

Pepper describes a variety of strategies used for binominal lexeme constructions, illustrated in (3) for the words for ‘railway’ in various languages (Pepper 2020:133, 142, 192; the terms for the strategies used here are from Chapter 4):

(3)	<i>juxtaposition:</i>	đường sắt	[Vietnamese]
		road iron	
	<i>compounding:</i>	Eisen-bahn	[German]
		iron-road	
	<i>adposition:</i>	chemin de fer	[French]
		road of iron	
	<i>case affix:</i>	kil-os hino	[Bezhta]
		iron-GEN road	

<i>Derivation + non-person indexation</i>	želez-n-aja iron-ADJR <small>FSG.NOM</small>	doroga road(F)	[Russian]
<i>person indexation</i>	demir iron	yol-u road-3SG	[Turkish]
<i>linker</i>	lala-m-by road-LNK-iron		[Malagasy]
<i>special form (construct form)</i>	mesilat track.CONST	barzel iron	[Modern Hebrew]

In other words, binominal lexeme constructions use all of the common strategies for modification constructions described in sections 4.2–4.5.

In addition, binominal lexeme constructions also display the same wide range of semantic relations between object concepts that the possessive construction does, noted in section 4.1.4 (see Kay and Zimmer 1990; Downing 1977; Pepper 2020). This is true even of nonce formation of semantic relations: Downing gives an attested example when a friend was instructed to sit at the *apple-juice seat*, which in the context meant the seat where a glass of apple juice had been placed (Downing 1977:818).

In sum, one cannot distinguish binominal lexeme constructions from ordinary modification constructions by the strategy used for the two constructions. Strategies describe form, not function. Instead, there is a continuum of functions from anchoring modification to ordinary (that is, property-like, non-anchoring) modification to binominal reference, depending on how productive the noun–noun relation is and how conventionalized the noun–noun combination is for naming the referent. But the strategies found in anchoring modification may be carried through all the way to the binominal lexeme construction.

5.2.2 Mensural and Quantifying Constructions

In section 4.4.3, the prototypical numeral classifier construction was described. This is a construction in which a classifier is used to relate the modifying numeral to the head noun. The prototypical classifier is a word that characterizes an inherent property of the head noun referent, usually animacy, shape, or function, and represents a unit of the type represented by the head noun. The Chrau example in section 4.4.3, repeated in (4), can be thought of as meaning ‘one long-shaped unit of the crossbow category’:

- (4) du tong aq
 one CLF.LONG crossbow
 ‘one crossbow’

This type of classifier is called a **sortal classifier**.

These are not the only types of classifiers that one finds in most – if not all – languages that use the numeral classifier strategy. We will use Cantonese for illustration. Cantonese recruits the same “classifier” construction found in

(4) – that is, a construction using the juxtaposition strategy – for measure terms (5), container terms (6), group terms (7), piece terms (8), and species terms (9) (Matthews and Yip 1994:96–101; examples from pages 96, 99, 96, 98, and 100, respectively):

- (5) yāt gān choisām
 one **catty** choisum
 ‘one catty of choisum [a vegetable]’
- (6) léuhng wún faahn
 two **bowl** rice
 ‘two bowls of rice’
- (7) nī bāan hohksāang
 this **group** student
 ‘this class of students’
- (8) géi dihk yúh
 few **drop** rain
 ‘a few drops of rain’
- (9) nī júng fā
 this **kind** flower
 ‘this kind of flower’

The types of terms occurring in (5)–(9) are called **mensural classifiers (str)**. Mensural classifiers are distinguished from sortal classifiers in that they generally describe a transitory, as opposed to stable, characteristic of the type denoted by the head noun, such as a transitory grouping of entities. Also, mensural classifiers are obligatory, whereas in many languages, sortal classifiers are optional in some contexts, or occur only with a subset of numerals (Greenberg 1977:171).

From a crosslinguistic perspective, mensural classifiers are the same semantic type as the mensural terms described in section 4.1.4. That is, from a cross-linguistic perspective, mensural classifiers are semantically mensural terms, but use a different strategy. The Cantonese phrases in (5)–(9) and the English phrases that translate them are both instances of the **mensural construction (cxn)**, the construction that uses a measure term as a modifier. The mensural construction in languages with numeral classifiers such as Cantonese uses a juxtaposition strategy, whereas in English, the mensural construction uses a flagging strategy similar to the attributive possession construction: *two bowls of rice*, *this kind of flower*, etc. In Cantonese, unlike English, the mensural construction does not recruit the attributive possession construction: the Cantonese possessive construction uses a linker strategy with *ge* (Matthews and Yip 1994:107).³

³ Cantonese also uses two other strategies for attributive possession: a juxtaposition strategy used with inalienable possession (see section 5.2.3), and a numeral classifier strategy for possessive constructions, described in section 4.4.3.

Mensural constructions in many European languages use a seemingly very different strategy from Cantonese. This strategy is called a **pseudo-partitive (str)** because of its relation to the anchoring partitive construction. A **partitive construction (cxn)** has a piece term (section 4.1.4) as the head referent and an object concept referring to an individual as the modifier: *a piece of the cake*. The identity of the piece is given (or at least considerably narrowed down) by the referent of *the cake*. In contrast, the typifying pseudo-partitive strategy also indicates a part-whole relation, but the apparent dependent describes a type, not an individual: *a piece of cake*. The piece cannot be identified via its relation to the modifier (Koptjevskaia-Tamm 2001, following Selkirk 1977). Instead, the “modifier” denotes the object concept which is being measured in the mensural construction.

The issue in mensural constructions is: what is the head with respect to the semantic definition of ‘head’ used in this book? Which element is the most contentful word that most closely denotes the same thing as the phrase as a whole (see section 2.2.1)? Based on this semantic point of view, the object concept word is the head of the construction. If so, then the mensural construction using the pseudo-partitive strategy has the mensural term, including piece terms, as the dependent modifier. In contrast, the partitive construction has the piece term as the head referent: the object concept functions as an anchor to identify the piece terms. In other words, the pseudo-partitive strategy for the mensural construction has “flipped” the head of the anchoring partitive construction from which it was recruited. The status of the measure term as a modifier will be discussed shortly, but first we describe the same contrast with quantifiers.

The anchoring-typifying (non-anchoring) contrast is found with numerals and other quantifiers. In *three of the books* and *some of the pears*, *the books* and *the pears* describe an anchoring set of entities which helps to identify (at least in part) the quantity of books/pears that the speaker intends to refer to. In *three books* and *some pears*, the numeral/quantity simply describe the cardinality or amount of the type expressed by *books* and *pears*. In the latter case, the numeral/quantity has the selecting (rather than situating) subfunction of the modification function (see section 4.1.1). The object concept serves as the semantic head.

There is a crucial difference with mensural terms and quantifiers in comparison to the anchoring and typifying constructions discussed in section 5.2.1. In both the anchoring and typifying constructions in section 5.2.1, the head is always the object concept that is **not** serving the anchoring or typifying function. In the partitive construction and the anchoring quantifier construction, the part or other unit of measurement, or the quantifier, is the head – more precisely, it denotes a subset of the anchoring set referred to by the referring expression. But in the typifying construction, the (semantic) head is the object concept, with the mensural or quantifying expression specifying the selected amount of the object type denoted by the semantic head.

Koptjevskaia-Tamm (2001), primarily a survey of partitive and mensural constructions in the languages of the Baltic Sea region, observes that the juxtaposition strategy (like the mensural classifier strategy) is the most common

for mensural constructions in a broad crosslinguistic perspective (Koptjevskaja-Tamm 2009). The pseudo-partitive strategy is also found in some European languages. A third strategy is a flagging strategy, usually based on an ablative ('from') case form, distinct from the genitive case form. Finnish uses two different cases, the Elative case in the partitive construction and the Partitive case in the mensural construction (Koptjevskaja-Tamm 2001:523):

- (10) pala tästä hyvästä kakusta
bit:NOM this:EL good:EL cake:EL
'a bit of this good cake'

- (11) säkki perunoita
sack:NOM potato:PRTT.PL
'a sack of potatoes'

Armenian uses a flagging strategy for partitives and a juxtaposition strategy for mensurals (Koptjevskaja-Tamm 2001:528, from Natal'ja Kozinceva, pers. comm.):

- (12) mi gavath ayd hamov surtch-ic
one cup:NOM that good coffee-ABL
'one cup of that good coffee'

- (13) mi gabath surtch
one cup:NOM coffee:NOM
'one cup of coffee'

In section 5.2.1, I argued that typifying object modification constructions are similar to the subcategorizing modification function associated with property modification. We also observed in section 4.1.3 and above that quantifier (selecting) modification comes in anchored and non-anchored types: *five of the books* (anchored) vs. *five books* (non-anchored). In English, the anchored type recruits a possessive strategy, albeit with the object concept as the object modifier, while the non-anchored type uses a juxtaposition strategy, similar to property modification (*heavy books*) with the object concept as the (semantic) head.

In many languages, at least some numerals or quantifiers use a pseudo-partitive strategy even with non-anchored quantifier modification. Russian numerals illustrate the range of strategies found with numeral constructions (for a full description, see Corbett 1978; for a summary, see Comrie 1989:106–10) – with multiple strategies used for a single numeral construction. The numeral '1' uses nonperson indexation, like property modifiers (14). The numeral '2' uses limited nonperson indexation (Masculine and Feminine gender only). The numerals '2' through '4' (and larger numerals ending in '2' through '4') recruit the case marking strategy of attributive possession constructions for the object concept but with the Genitive Singular case (for Nominative numeral modification constructions only). Hence, '2' combines a nonperson indexation strategy typical of property modifiers with a genitive case marking strategy typical of attributive

possession constructions. Finally, numerals higher than ‘4’ lack indexation and use the case marking strategy with the genitive plural:

- (14) odn-a knig-a (‘1’; Adjective-like conjugation for M/F/N gender)
one-F book.F.NOM
- (15) dve knig-i (‘2’ through ‘4’: M/F indexation only; noun in
two.F book-GEN.SG Genitive Singular)
- (16) šest’ knig-Ø (higher than ‘4’: no agreement; noun in Genitive
six book-GEN.PL Plural)

Greenberg presents some generalizations about the choice of strategy for particular numeral modification constructions (Greenberg 1978b:302). In particular, smaller numbers tend to recruit strategies used with prototypical adjectival modifiers. Larger numbers (and bases) are more like referring phrases, with the type of the enumerated/quantified set expressed using a strategy resembling object modification. Both of these universals are exemplified by the Russian examples in (14)–(16).⁴

With respect to the second universal, regarding the resemblance of the quantifying construction to object modification, the more precise resemblance is to the mensural construction; for example, the Russian mensural construction also uses the genitive case. Koptjevskaja-Tamm argues that there is a close relationship between mensural constructions and numeral/quantifying constructions, such that strategies used for one construction are recruited for the other.

Also, strategies for anchoring partitives and quantifying constructions are extended to typifying mensural and quantifying constructions (the pseudo-partitive strategy). The result of this diachronic process is a sort of “confusion” in the structure of the construction. The semantic head of the anchoring construction appears to be the mensural term/quantifier, whereas the object noun is a dependent modifier denoting the superset of the referent (*a group of the men, six of the men*). But the semantic head of the typifying construction is the object noun (*a pile of books, seven books*). Hence, the semantic head of English *a pile of books* or Russian *sem’ knig* (literally ‘seven of books’) is the books, despite the fact that they look like object modifiers (possessors) morphosyntactically.

This seeming “confusion” sometimes persists even when a mensural construction is extended to property modification, as has happened in a number of Bantu languages. In Akooze, a construction using the Associative Marker (glossed _{AM}), a linker that also indexes the preceding noun for noun class, is used for partitive constructions (17) and mensural constructions (18) (Hedinger 2008:63, 64):

⁴ In Russian, a further twist is that, in oblique cases, the object noun as well as the numeral or mensural term inflects for the oblique case in many circumstances; the same is true of the numeral construction in Finnish (Koptjevskaja-Tamm 2001:537–38).

- (17) e'séd é ndáb
 CL8:wall CL8:AM CL9:house
 'the walls of the house'
- (18) epíd é méndíb
 CL7:bottle CL7:AM CL6:water
 'bottle of water'

The Akçose Associative construction is also extended to property modification. In some cases, the property concept is expressed as the object modifier (Hedinger 2008:66, not fully glossed by the author):

- (19) mbóté e bwǎam
 shirt AM good
 'a fine shirt' (lit. 'a shirt of goodness'; compare English *a man of honor* for
 'an honorable man')

However, for many property concept words, including many of the core adjectival classes of property concepts (see section 4.1.2), the property concept is expressed like the mensural term in (20) (Hedinger 2008:64, with his gloss):

- (20) mbîd ñ nyam
 CL3:rawness CL3:AM CL9:meat
 'raw meat' (lit. 'rawness of meat')

It seems likely that this “flip” of the semantic head is due to the “flip” of the semantic head from partitive to mensural construction. The result is that the head noun in (typifying) quantifier constructions, and even in property modification constructions, looks like an object modifier in the strategy recruited for these modification functions.

Finally, one finds strategies presumably recruited from non-anchoring constructions used for certain anchoring constructions. In section 4.1.3, we noted that set-member terms such as *first*, *next*, and *last* are anchoring modifiers: they presuppose a specific set of individuals from which the set-member term selects an individual. In English, the set-member construction may be expressed by a strategy of recruiting the partitive construction – *the last of the World War I veterans* – or a juxtaposition strategy typical of non-anchoring, non-nominal modification – *the last World War I veteran*. Ordinal numerals, which are also set-member terms, use a variety of strategies, some resembling non-anchoring modification, though at this point no typological survey of ordinal numerals has been done, to my knowledge.

5.2.3 Inalienability Revisited

In section 4.1.4, we introduced a number of basic semantic relations between object concepts that are relevant for object modification: ownership; body parts (mainly human, but also animal and plant); part–whole relations for

inanimate objects; and kinship. As was observed there, ownership is actually one of many other relations between object concepts that are expressed with the same construction used for ownership. The other three relations – body parts, part-whole, kinship – are often expressed in a language by an object modification construction (or even multiple constructions) different from the construction used for ownership and other relations. The contrast between constructions is generally labeled alienable (ownership, etc.) vs. inalienable (body parts, part-whole, and/or kinship) constructions (see section 4.1.4). The contrast between alienable and inalienable constructions is illustrated below for Crow (Graczyk 2007:52):

(21)	<i>Alienable</i>	<i>Inalienable</i>
	bas-óosshee 'my food'	b-apé 'my nose'
	dís-oosshee 'your food'	d-ápe 'your nose'
	is-óosshee 'his/her food'	Ø-apé 'his/her nose'

The semantic motivation for the alienable–inalienable contrast is that the conceptual relationship between object concepts expressed in inalienable constructions is inherent – that is, the concept expressed by the head noun is relational. An arm is the arm of someone; a bottom is the bottom of something; an aunt is the aunt of someone (or some set of persons). For this reason, inalienable possession constructions obligatorily express the possessor, if only as an indexation affix, as in the Crow examples. In fact, unpossessed inalienable object nouns, where they are semantically possible (e.g. detached body parts) are sometimes marked overtly. The Koyukon unpossessed inalienable noun requires a prefix: *k'e-tlee* 'head [unpossessed]' (Thompson 1995:656).

In contrast, alienable possession is not inherent: an object can be owned or not owned, and a particular owner of an object is not an inherent characteristic of the object (ownership can be transferred). Grammatically, this is manifested in the optional occurrence of an alienable noun in a possession construction, and the absence of overt coding of an unpossessed object, as in Koyukon *tet* 'socks [unpossessed]' (Thompson 1995:654). Finally, some entities are never possessed, either alienably or inalienably. Unpossessable entities commonly include places, e.g. Maasai *enkɔp* 'land/dirt' (Payne 1997:40).

Although the contrast between an alienable and an inalienable construction is semantically motivated in terms of a nonrelational vs. relational head noun – or, perhaps better, of an ‘inextricable link’ between the object modifier and the object head concepts (Chappell and McGregor 1989:28), the actual distribution of nouns between alienable and inalienable constructions does not always match the semantic distinction. In some languages, only body parts occur in the inalienable construction, while in other languages, only kin terms do (Chappell and McGregor 1995:8–9; they include ‘spatial terms,’ which we analyze as flags). In some languages, the “body part” category is extended to include such things as one’s footprint, shadow, soul, name, or even some clothing items and implements; and the “kinship” category is extended to include persons such as a chief. Conversely, in some languages only a subset of body parts and/or kin terms

occur in the inalienable construction. Hence, the semantics of the head noun does not determine occurrence in a possession construction, although it does consistently motivate it.

While kin terms and body part / part terms are often lumped together in discussions of alienability as relational concepts, they are semantically different and this semantic difference has grammatical consequences (Dahl and Koptjevskaja-Tamm 1998, 2001). The basic semantic difference is that kin terms refer to a person in a particular kin relation to another person, but body part / part terms refer to an inanimate object, which may be possessed by a person (human body part terms) or an inanimate object (part–whole terms). We note two effects here. First, kin terms, unlike body part terms, act like proper nouns, and so may occur without definiteness markers in languages with such markers, e.g. Standard Italian *mia madre* ‘my mother’ vs. *la mia casa* [the my house] ‘my house’ (Dahl and Koptjevskaja-Tamm 2001:205).

Second, kin terms may also recruit argument marking like that found with transitive verbs (“kinship verbs”), since kinship relates two salient participants, namely two persons (Dahl and Koptjevskaja-Tamm 2001:211–13; Mithun 1996; Evans 2000). So-called “kinship verbs” are attested in languages of Native North America and Aboriginal Australia. Examples showing kinship terms using not only argument marking but also other verbal marking are given in (22), from Ilgar, an Australian Aboriginal language, which uses past tense for deceased kin (Evans 2000:104); and in (23), from Mohawk, a Native North American language, which uses reflexive/reciprocal markers for reciprocal kin relations (Mithun 1996:636):

- (22) ragabaza yi-wu-wu-ŋ ŋabi a-maŋyarwu-ŋ
 that 3SG.M.ABS-3PL.ERG-kill-PST 1SG 1sg/3M-be_father_to-PST
 aŋmun-majargbu-n raga ar~argbi
 2SG/3PL-clean_out-NPST DEM PL~person
 [A father is summoning up a cloud of poisonous gas to avenge his son's death]
 'Because they killed my son (lit. the one whom I was father to), you clean out those people.'
- (23) akwatate?k_Δ?ok_Ù?a
 akw-atate-?k_Δ-?ok_Ù-?a
 1PL.EX.AG-RECP-sibling-PL-DIM
 'my brothers and sisters' (lit. 'we are siblings to each other')

There is a robust typological universal regarding alienable and inalienable possession constructions: the morphosyntactic strategy of the inalienable construction has as few morphemes as – or fewer than – the alienable construction, and/or is at least as tightly bound (affix vs. free form) as the alienable construction (Haiman 1983a, 1985b). A striking example provided by Haiman is Kpelle (Welmers 1973:280):

	<i>Alienable</i>			<i>Inalienable</i>	
<i>Pronominal</i>	ŋá	pérei		m̩-pôlu	
<i>Possessor</i>	my	house		my-back	
<i>Nominal</i>	'kâloŋ	ŋò	pérei	'kâloŋ	pôlu
<i>Possessor</i>	chief	POSS	house	chief	back

The pronominal alienable construction and the nominal inalienable construction use the same strategy, juxtaposition. But what matters is the morphosyntactic relationship between alienable and inalienable constructions for each type of possessor. The inalienable construction is more tightly bound than the alienable construction for pronominal possessors, and has fewer morphemes than the alienable construction for nominal possessors. The Crow examples in (21) illustrate another instance of what Haiman calls shorter 'linguistic distance' of inalienable possession constructions: the person indexes for inalienable possession are phonologically shorter than those for the alienable possession constructions.

Haiman explains this universal of the form of alienable and inalienable possession constructions in terms of iconicity of distance. He argues that the conceptual distance between body parts, inanimate parts, and kin and their possessors is closer than the conceptual distance between other objects in a transitory, transferable relationship, and this is reflected in linguistic distance.

The alienable/inalienable possession distinction has been proposed as being the result of a new possession construction – the alienable construction – replacing an older possession construction – the inalienable construction (Claudi and Heine 1989; Heine 1997:172–83; Dahl and Koptjevskaja-Tamm 1998). The older construction survives in relational nouns in part due to the frequency of the (older) possession construction with such nouns: in language use, the most frequent use of the possession construction is with nouns referring to body parts, other parts, or kin (this is a different type of frequency explanation from that of Haspelmath 2008; see Croft 2008 for a critique of Haspelmath's analysis). This diachronic-cum-frequency analysis accounts for the semantic irregularity of the inalienability category: semantic relationality does not directly determine the range of the inalienable possession construction. It also accounts for why the inalienable construction is tighter, or at least shorter: it is more grammaticalized, and hence eroded, in comparison to the newer alienable construction.

Chappell and McGregor (1989) propose another explanation of the universal difference between alienable and inalienable possession, based on a sample of twenty languages from fifteen language families. They argue that inalienable possession is in between the anchoring function of alienable possession and the classifying or categorizing function of binominal lexeme constructions (section 5.2.1), at least for part–whole relations. For lower accessibility modifiers for body parts, for example, the whole tends to subclassify the type of the part: a bird tail is different from a rabbit tail, for example.

These two explanations are not incompatible. One can interpret Chappell and McGregor's explanation as an argument that the modification–reference

continuum interpolates inalienable modification between alienable anchoring modification and typifying modification, in terms of conceptual distance and linguistic distance. Chappell and McGregor's universal, if confirmed across a broader sample, suggests that the entire modification–reference continuum (see Figure 5.1 in section 5.2.4 below), at least for object modifier constructions, involves a reduction in conceptual distance from the anchoring modification end to the single nominal reference end. Alternatively, it may be argued that the modification–reference continuum is a continuum of diachronic processes, such that more typifying constructions are more grammaticalized than the more anchoring constructions to the left on the continuum.

5.2.4 The Modification–Reference Continuum: Summary

In general, anchoring modifiers – possession constructions, partitive constructions, anchoring quantifier constructions, and set-member constructions – situate the intended referent of the referring expression via reference to another object (or set of objects, in the case of partitives, quantifiers, and set-member modification). In this respect, anchoring modification performs the same situating information packaging function as deictic and definiteness modifiers. However, deictic and definiteness modifiers do not use a second, anchoring, referent to perform this function; they perform the function contextually, as described in Chapter 2, using spatial context (deixis) or epistemic context (definiteness).

Typifying modifiers – property modification, typifying and qualifying object modification, mensural constructions, and typifying quantifier constructions – enrich the referent description by subcategorizing it or selecting the quantity (cardinality, amount, proportion, piece) of the category or type denoted by the head noun.

There is a continuum between typifying modification and a unitary naming function: typifying modification is more productive and less conventionalized in subcategorizing the head noun referent, while complex naming is less productive and more conventionalized in subcategorizing the head noun referent. This continuum is clearest for object modification grading into naming: *glass bottle/bowl/jar/etc.* is more productive and less conventionalized than *tooth-brush*. Once the noun–noun combination develops a unitary conventional meaning, it comes to resemble a unitary referent expression, and through lexicalization becomes a single lexical item: for example, English *halibut* has become a single lexical item derived from Old English *halig* ‘holy’ plus *butte* ‘flat fish’ (Brinton and Traugott 2005:50).

But the modification–reference continuum is present also for property modification, and even numeral modification. A *blackbird* is a species of bird, whereas *black T-shirt* is more productive and less conventionalized (since T-shirts come in all sorts of colors). Yet some property modifiers are so influenced in their meaning by the head referent that they represent an intermediate case between modification and a unitary naming function. For example, *red wine* and *white*

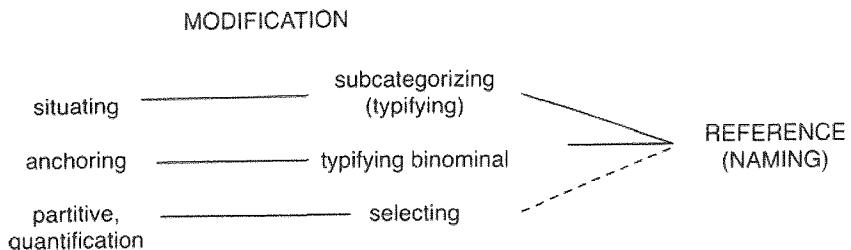


Figure 5.1 *The modification–reference continuum*

wine represent two categories of wine, and the color of the wines does not correspond to anything near the typical colors for which *red* and *white*, as prototypical adjectival modifiers, are used. Property concepts can even be used for highly context-specific semantic relations: I heard a lecture in which the phrase *the red section* was used to describe the section in black ink marked with a red line in the margin (James M., April 25, 1987).

It is quite rare for quantifying expressions including numerals to become pure referring expressions because they generally describe transitory characteristics of referents, and therefore do not usually come to denote unitary concepts. But, even so, numerals may form parts of compounds: a *three-awn* is a genus of grass species characterized by three awns (a part of the grass). Even proper nouns may function as non-anchoring modifiers and as part of naming expressions: compare the anchoring *Mozart's Sonata K. 333* to the non-anchoring *a Mozart sonata* to the unitary naming construction *the Palme murder*, which names a specific event (Koptjevskaja-Tamm 2013).

We can now generalize the modification–reference continuum as in Figure 5.1.

Before turning to other topics, we briefly digress on a question regarding situating and anchoring that has seemed to pose a puzzle. In English, it is unacceptable to combine an article with an (anchoring) possessive form: **the her house*. This is sometimes explained by a semantic redundancy: since the possessor anchors the referent of the referring expression, it is unnecessary to express definiteness which redundantly situates the referent. However, in many other languages, articles do combine with possessive forms, as in Samoan '*o l-o-na fale* [PRT ART-POSS-3SG house] 'her/his house' (Haspelmath 1999a:228, citing Mosel and Hovdhaugen 1992:275). Haspelmath (1999a) argues that this typological variation has a diachronic explanation. If a language has a possessive construction but a new definite article is grammaticalizing, then the definite article will come to avoid combining with the possessive construction for reasons of economy. If, however, the language has a definite article but a new possessive construction is grammaticalizing, then the possessive construction will combine with the definite article construction. Haspelmath suggests that the same explanation may apply to whether or not definite articles combine with demonstrative attributives, e.g. English **this the house* vs. Hungarian *ez a ház* [this the house], and other uniquely identifying constructions such as superlatives and proper nouns (Haspelmath 1999a:239).

5.3

Word Order and the Structure of Referring Expressions

There are a number of asymmetries in the order of modifiers relative to the head noun. Greenberg's Universal 18 states that 'When the descriptive adjective precedes the noun, the demonstrative and the numeral, with overwhelmingly more than chance frequency, do likewise' (Greenberg 1966b:86). This universal has exceptions, as Greenberg's hedged statement implies, but a raw language count of the World Atlas of Language Structures (WALS) indicates that the universal is broadly valid (Table 5.1; abbreviations: N[oun], A[djective], Demonstrative], Num[eral]; cases of no dominant order and of bound demonstratives are excluded; exceptions are italicized).

The asymmetry in word orders in Universal 18 represents a relative asymmetry in the position of demonstratives and numerals with respect to the position of adjectives. Nevertheless, in the great majority of languages, the modifiers tend to occur on the same side – that is, they are either postnominal or prenominal. More generally, there is a close correlation between the orders of demonstrative, numeral, and noun. Dryer (1992) argues that the orders of these three modifiers are independent of the word order correlations associated with the major elements of the clause (subject and object).

On the other hand, Dryer (1992) argues that genitive (object modification) and adposition (case marking) orders are correlated with object–verb order in the clause (Table 5.2; cf. Greenberg's Universals 3 and 4; abbreviations: V[erb], O[bject], N[oun], G[enitive], Prep[osition], Postp[osition]; again, cases of non-dominant order are excluded; exceptions are italicized).

The correlations between adposition order and object–verb order, and between adposition order and genitive–noun order, approach a biconditional universal. This is largely due to the common grammaticalization paths from serial verb + object to adposition, and from relational nouns + genitive modifier to adposition (see section 4.3). The relationship between genitive–noun order and object–verb order is not so widely motivated by a diachronic pathway: although a nominalized verb plus an object in the genitive case may be reanalyzed as a main verb plus object, this process is not nearly as frequent as the grammaticalization of adpositions from serial verb constructions and relational noun constructions. Nevertheless, there is a strong implicational relationship, such that when the genitive phrase follows the noun, with overwhelmingly more than chance frequency the object follows the verb.

Another asymmetry occurs between prenominal and postnominal modifiers, a phenomenon I described as **Prenominal Integration** in unpublished work (Croft 2009):

Prenominal Integration: Typologically, prenominal modifiers are more tightly integrated into the modification construction than postnominal modifiers.

The strongest evidence that prenominal modifiers are more tightly structured than postnominal modifiers is the relative word order of modifiers with respect

Table 5.1 *Distribution of demonstrative, numeral, and adjective orders across languages in WALS*
(accessed July 27, 2017)

	NA	AN		NA	AN
DemN	184	266	NumN	168	251
NDem	476	25	NNum	509	37

Table 5.2 *Distribution of genitive, adposition, and object orders across languages in WALS* (accessed July 27, 2017)

	VO	OV		VO	OV		Prep	Postp
GN	122	494	Postp	41	472	GN	54	442
NG	398	32	Prep	454	14	NG	351	13

to the head noun and with respect to each other. The relative order of demonstrative, numeral, and adjective modifiers and the head noun (defined in semantic terms, as is done here) have been the subject of typological analysis since Greenberg's seminal word order paper (Greenberg 1966b:52, Universal 20; Hawkins 1983:119–20). Dryer (2018) provides the fullest presentation of the crosslinguistic distribution of word orders, using a sample of 576 languages but controlling for genetic and geographical diversity. Dryer also provides 5 typological generalizations – which he calls descriptive principles – that constrain the frequency of occurrence of the different possible orders of the 3 types of modifiers and the head noun. Dryer's 5 principles are given below (Dryer 2018:801):

- Principle 1 (ICONICITY PRINCIPLE 1): The demonstrative tends to occur outside the adjective and numeral (i.e. farther from the noun) when the demonstrative and the adjective or numeral (or both) occur on the same side of the noun.
- Principle 2 (ICONICITY PRINCIPLE 2): The adjective tends to occur inside the numeral (i.e. closer to the noun) when they occur on the same side of the noun.
- Principle 3 (ASYMMETRY PRINCIPLE): The iconicity principles apply more strongly to prenominal modifiers than they do to postnominal modifiers; exceptions to the iconicity principles will occur only with postnominal modifiers.
- Principle 4 (POSTNOMINAL ADJECTIVE PREFERENCE): Noun–adjective order is preferred over adjective–noun order.
- Principle 5 (INTRACATEGORIAL HARMONY): The demonstrative, numeral, and adjective tend all to occur on the same side of the noun.

Table 5.3 gives just the six most frequent orders using a measure of 'adjusted frequency' (that is, adjusted to control for closely related and geographically near languages; see Dryer 2018:801–4 for a discussion of his method for adjusting frequency, and the frequency of all 24 possible orders).

Table 5.3 *The six most common orders of demonstrative, numeral, and adjective modifiers and the head noun, adjusted for genetic and geographical proximity (based on Dryer 2018:804, Table 2)*

Word order	Adjusted frequency
noun-Adj-Num-Dem	44.17
Dem-Num-Adj-noun	35.56
Dem-noun-Adj-Num	29.95
Dem-Num-noun-Adj	22.12
noun-Adj-Dem-Num	14.80
Num-noun-Adj-Dem	14.54

The first order, the most frequent, fits all the principles: the three modifiers occur in the iconic order relative to the noun (adjective closest, numeral next, demonstrative most distant) and also are harmonic in that all three modifiers are on the same side, and the adjective follows the noun. The second order, the next most frequent, violates only the postnominal adjective preference. The remaining orders violate just one principle each: three of the four violate harmony (one modifier occurs on the opposite side of the noun from the other modifiers), and the fifth order violates the first iconicity principle (the demonstrative is closer to the noun than the numeral). Twelve more orders are attested, but at decreasing adjusted frequencies (all below 10.00, and going down to 1.00). The decreasing adjusted frequencies correlate very closely to the increasing number of descriptive principles that are violated.

Dryer tentatively suggests functional explanations for four of the five principles (recall that all of the modifiers are defined in semantic terms, and Dryer argues that the morphosyntactic strategies used for the modifiers largely has no effect on the typological generalizations). The iconicity principles may be explained by the transitory–stable semantic continuum, a previously suggested explanation. The harmony principle is motivated by the fact that all three modifiers perform the same information packaging function (modification), and so are expected to occur in a similar syntactic position (all prenominal or all postnominal). Finally, the postnominal adjective principle is the semantic similarity between adjectives – property modifiers – and relative clauses – action modifiers.

This leaves the asymmetry principle, which Dryer does not offer an explanation for (Dryer 2018:816). Among other things, the asymmetry principle guarantees that the order of modifiers before the noun is almost always Dem-Num-Adj-noun; 113 languages with all 3 modifiers before the noun have this order (adjusted frequency 35.56, the second-highest frequency), and only 5 have different orders (the adjusted frequency for both other orders is 2.00). Dryer's asymmetry principle is basically Prenominal Integration as applied to word order: the relative order of prenominal modifiers is far more fixed than the relative order of postnominal modifiers. This word order pattern is the strongest evidence for Prenominal Integration; but there is some other evidence to support this principle.

Another piece of evidence for Prenominal Integration is that in a small number of languages, when there are multiple modifiers, there are restrictions on how many of them can precede the noun. For example, in Mam, there is one prenominal “slot” for all adjectives except *matij* ‘big,’ *nim* ‘a lot,’ *nii* ‘small,’ *tal* ‘small.’ If a numeral or other adjective occupies the “slot,” then the adjective must be postposed (England 1983:145; examples from page 146; the four exceptions may occur prenominally even if another modifier is present):

- (24) q'ay-na lo7j
 rot-PTCP fruit
 'rotten fruit'

- (25) juun t-wiihx saq
 one 3SG.POSS-cat white
 'a white cat of his'

Finally, when prenominal and postnominal constructions are both possible for a semantic modifier type, the prenominal modification construction displays a shorter linguistic distance compared to the alternative postnominal modification construction in some, though not all, cases. This generalization holds for some strategies but not for others, observed in a sample of 78 languages with prenominal and postnominal constructions that differed in their strategies.

The strongest evidence supporting the Prenominal Integration hypothesis is that prenominal modifiers lack a repeated article or a classifier, while postnominal modifiers require them. In Modern Greek, preposed adjectives lack a repeated article but postposed adjectives require one (Holton et al. 1997:286, transliterated):

- (26) o oraíos ántras
 the handsome man
 'the handsome man'

- (27) o ántras o oraíos
 the man the handsome
 'the handsome man'

In Ainu, numerals use classifiers when following the noun, but not when preceding it (Greenberg 1975:237–38; Refsing 1986:115–16; examples from Tamura 2000:190, 257):

- (28) tu cise
 two house
 'two houses'

- (29) pon saro sine-p
 be_small monkey one-CLF
 'one small monkey'

Other evidence for Prenominal Integration comes from adjectives (property concept modifiers). As noted in section 4.1.5, property modifiers sometimes recruit a relative clause construction from action modification, which usually has additional morphemes such as a relativizer (see section 19.2.1) and inflection of the property word. In a few languages with two property concept constructions that differ in order, the postposed construction is a relative clause and the preposed construction is simpler, as in Kanakuru; there is no significant difference between the two constructions (Newman 1974:98–99; tones not indicated; glosses added):

- (30) manje məna
old house
'old house'

- (31) məna m manje-ni
house REL old-3SGM
'old house'

However, person indexation of the head and nonperson indexation of the modifier, presence/absence of a genitive flag (adposition or case affix), and presence/absence of a linker are not skewed by prenominal vs. postnominal order.

The modifier order constraints provide strong evidence that there are more constraints on the modifiers that precede the head of an argument phrase than on those that follow, as proposed by the Prenominal Integration hypothesis. The empirical evidence based on morphosyntactic strategies is somewhat equivocal: repeated articles, classifiers, and relativizers strongly support Prenominal Integration, but other strategies do not exhibit a difference between prenominal and postnominal modification. It is not clear what explanation there is for the Prenominal Integration hypothesis in whatever form it ultimately takes.

5.4 Anaphoric-Head Constructions, Apposition, and the Origin of Referring Expressions

The last phrase in the sentences in (32) contains a modifier but not a head noun:

- (32) a. I took a large brownie and Carol took a small **one**.
b. My bicycle is older than Greg's Ø.

In (32a), the phrase *a small one* refers to an individual – a brownie – that is identical in type to a previously referred-to individual, namely the large brownie. Likewise, in (32b), the phrase *Greg's* refers to an individual – a bicycle that is identical in type to a previously referred-to individual, namely my bicycle. The phrases *a small one* and *Greg's* thus refer back to an individual, although for the

purpose of introducing a second individual that is of the same type but is not the same individual. This is an example of **type identity (*sem*)**, not **token identity (*sem*)** as with anaphoric pronouns (section 3.3.2). In token identity, the two referents are the same individual. In type identity, the two referents are of the same type, but they are not the same individual. We will use the term **anaphoric-head construction (*cxn*)** to describe this construction: an anaphoric-head construction contains a modifier that refers to an individual of the same type as one previously referred to.

English uses two different encoding strategies for anaphoric-head constructions. Example (32a) illustrates the **overtly headed strategy (*str*)**: the word *one* stands in the position in which a contentful head noun would stand. The overtly headed strategy is not that common, with one exception. Languages with classifiers (numeral, possessive, etc.) use the classifiers in anaphoric-head modification (Aikhenvald 2000:329). Example (33) is from Minangkabau (Aikhenvald 2000:329, from Marnita 1996:93), and (34), repeated from section 4.4.3, is from Kilivila (Senft 1996:21; cf. Aikhenvald 2000:331):

(33)	bara	pisang	sa-sikek	mak
	how_much	banana	one-CLF.BUNCH	2F.HON
'How much does a bunch of bananas cost?'				

...

agiah	duo	sikek
give	two	CLF.BUNCH
'Give (me) two bunches (of bananas)'		

(34)	a-tatai	tataba	tauwau	tabalu	m-to-si-na
	1SG-carve	tataba_board	men	Tabalu_subclan	this-CL.M-PL-this
	ma-ke-na	si	koni		
	this-CL.WOODEN-this	their	sign_of_honor		
'I carve a tataba board.' 'These men belonging to the Tabalu subclan, this [board] is their sign of honor.'					

In (33), the phrase *duo sikek* lacks the noun that the numeral + classifier normally modifies; but it is used in anaphoric-head function, referring to two instances of the type referred to in the first line. The same applies to the use of the classifier with a demonstrative in (34), in the phrase *ma-ke-na*.

Example (32b) illustrates the **null anaphoric head or headless strategy (*str*)**: the modifier *Greg's* simply occurs without any word in the position normally occupied by the head noun. Crosslinguistically, the headless strategy is more common than the overtly headed strategy.

The existence of a headless anaphoric-head construction, combined with two other grammatical constructions, has sometimes led to quite different analyses of modification constructions than the one used in this textbook. An example of such a language is Miraña (Seifart 2005). Miraña uses the headless strategy for the anaphoric-head construction (Seifart 2005:296):

- (35) 1:te-:bé tsi-:?o túhkš-:bε
 see-M.SG other-3DIM.OBLONG take-M.SG
 'he looked, he took another one (oblong, i.e. banana),...'

Miraña also uses the nonperson indexation strategy with the anaphoric-headed modifier, indexing the object referent in number, gender/class and case (Seifart 2005:153):

- (36) ó whkuú-?i ma:kíní-mwá-ke kur?rí-mwá-ke
 1SG take-PRED three-AN.PL-PL-ACC pintadillo-AN.PL-ACC
 'I caught three *pintadillo* (fish sp.).'

Finally, Miraña also allows for a modifying concept, such as the property concept *mái?tsu-kó* 'medium-sized' in (37), to occur separated from the object concept expression, such as *dó?hi-ko* 'carguero' in (37) (Seifart 2005:155; 1D = 1-dimensional object):

- (37) dó?hi-ko dó?hi-ko ne:-me mái?tsu-kó
 carguero-1D.POINTED carguero-1D.POINTED say-AN.PL medium-1D.POINTED
 'Carguero (tree sp.), carguero they call (this), a medium-sized one'

Some linguists, including Seifart, argue that, in languages like Miraña, the structure of argument/noun phrases is very different from that in English. Miraña is said to have no modifiers but instead a series of referring phrases in **apposition (str)**. That is, 'another' in (35), 'three' in (36), and 'medium-sized' in (37) are all referring expressions. They are translated as such in (35) and (37) ('another one,' 'a medium-sized one'). But the conclusion is that the phrase 'three *pintadillo*' in (36) should be analyzed as 'three of them, *pintadillo*.' The structure of (36) would then be like the prototypical appositive strategy exemplified by English *my brother, the geophysicist*, made up of two juxtaposed referring expressions that refer to the same individual (Matthews 1981:224–25).

There is evidence, however, that the appositive strategy and the strategy in constructions like that in (36) are not the same. The construction in (36) requires the same indexation features (number, gender/class, case) on the modifying concept and the object concept. Appositive constructions may differ in the indexation features, e.g. French *mon plat préféré, une truite meunière* 'My favorite dish [M], pan-fried trout [F]' (see also Lehmann 1982:208).

Also, the two parts of an appositive construction almost always occur in two separate intonation units (Matthews 1981:226, Croft 1995:850–56). Wardaman is another language that also uses the null anaphoric-head strategy, nonperson indexation, and "discontinuous" argument phrases, for which a corpus of texts parsed into intonation units has been published (Merlan 1994). In Wardaman, juxtaposed expressions denoting a modifying concept and an object concept occur 89 percent of the time in the same intonation unit (IU) (Croft 2007b:29,

table 21). Appositives occur in the same IU only 13 percent of the time (Croft 2007b:29, table 21).

A broader crosslinguistic perspective suggests a more nuanced approach to the differences between English and Miraña argument phrases. The three strategies found in Miraña – null head for the anaphoric-head construction; nonperson indexation for the ordinary modification construction; and “discontinuous” argument phrases for a distinct function to be described below – do not always coincide. For example, the English phrase *Greg's* in (32b) uses the null anaphoric-head strategy but lacks nonperson indexation.

In the unpublished survey of morphosyntactic strategies in attributive constructions by Mark Donohue and myself referred to in section 4.4.2, data on anaphoric-head constructions and “discontinuous” argument phrases was also collected. The distribution of the three construction types conforms to the universal in (38) with very few exceptions (Croft 2006; flexibility of word order, another strategy used to support an appositional analysis of modification constructions, did not form an implicational relation with the other constructions):

- (38) “discontinuity” of modifier and head \supset indexation on modifier \supset null anaphoric-head construction

The implicational universal in (38) should be read as follows: if a language uses the “discontinuity” strategy (in the special function described below), then it uses indexation on the modifier in ordinary modification constructions – but not vice versa; and if a language uses indexation on the modifier in ordinary modification constructions, then it uses null heads in the anaphoric-head construction – but not vice versa.

We will start by illustrating the latter part of the implicational universal. While indexation on the modifier implies a null anaphoric-head strategy, the null anaphoric-head strategy does not entail the presence of indexation on the modifier. For example, English *Greg's* in (32b) uses a null anaphoric-head strategy, but *Greg's* does not index the head (-'s is a linker; see section 4.5). This pattern is identical to that found with null anaphora in clauses (section 3.3.2): null anaphora does not entail the presence of indexation on the predicate. The parallelism in crosslinguistic patterns here suggests that the null anaphoric-head strategy is simply a headless modification construction, not a referring phrase with the modifier as its head, just as a predicate with null subject and object is a predicate with null arguments, not a referring phrase with the predicate as its head.

The first part of the implicational universal in (38) shows that “discontinuity” requires indexation on the modifier, although indexation does not license “discontinuity.” Indexation on the modifier appears to allow a modifier to occur separately from the “head” noun in some languages. In Warlpiri, indexation is optional if the modifier is contiguous to the head noun as in (39); however, it is obligatory when modifier and noun are in separate phrases, as in (40) (Simpson 1991:257, 130; cf. Austin and Bresnan 1996:218, 217):

- (39) kardiya yurrkunyu-rlu manu yapa-ngku turaka-rlu
whiteman **policeman-ERG** and **Aboriginal-ERG** **tracker-ERG**
- kalaka-ngku-pala muru-pinyi
ADM-2SG.OBJ-3DU.SBJ arrest-NPST
- ‘A white policeman and an Aboriginal tracker [police aide] can arrest you.’
- (40) kurdu-jarra-rlu ka-pala maliki wajili-pinyi wita-jarra-rlu
child-DU-ERG PRS-3DU.SBJ dog(ABS) chase-NPST **small-DU-ERG**
- ‘Two small children are chasing the dog,’ or ‘Two children are chasing the dog and they are small.’

There still remains the question of what the function of “discontinuity” is. I suggested above that it performs a distinct pragmatic function from ordinary modification constructions. The function of “discontinuous” phrases has been investigated in detail in a few languages, including Polish (Siewierska 1984b), Wardaman (Merlan 1994), Gooniyandi (McGregor 1997), and Jaminjung (Schultze-Berndt and Simard 2012). In those languages, when a headless modifier phrase and a coreferential headed referring phrase are not contiguous, there is a difference in discourse function between modifier and head. For example, in Polish, the initial part functions as contrastive focus, and the final part as contrastive topic (Siewierska 1984:60):

- (41) Nie! Piękny mają ogród. Dom mają kiepski.
no beautiful have garden house have crummy.
‘No! They have a beautiful garden. Their house is crummy.’

In Wardaman, the initial part functions as theme and the final part as focus (Merlan 1994:241–42):

- (42) lege walanja nga-ga-ndi go yidinen-bi
one(ABS) goanna(ABS) 1SG-take-PST 3SG.DAT **whole-ART**
‘I took one goanna for him whole (i.e. one whole goanna).’

Other analyses of Australian Aboriginal languages, frequently cited as examples of appositional modifiers, also hint at similar pragmatic distinctions between the two phrases (Louagie and Verstraete 2016:49–54).

In particular, there appears to be a favoring of discontinuous quantifiers and nouns. Louagie and Verstraete note this for Australian Aboriginal languages (2016:51–52). Discontinuous numeral and noun are also noted for Babungo (Schaub 1985:123), where a sentence-final numeral is analyzed as counterassertive, and for Ngiti (Kutsch Lojenga 1994:355), where a sentence-initial numeral is analyzed as having ‘strong emphasis.’ Koptjevskaja-Tamm (2001:533) notes that partitive and pseudo-partitives are easily separated, though without suggesting a distinct function for the discontinuous constructions.

In fact, numerals are sometimes even more resistant to the modification function, occurring instead in a coordinating construction, as in Koasati (Kimball 1991:358; DEDUC = deductive evidential):

- (43) ná:ni-ha-k pokkó:l awáh tóklo-t ca-hí:ca-toho-:li-mpa-:s
 man-PL-SBJ ten and two-CONN 1SG.II-see-RL-DEDUC-REP-I.PST
 'They say that twelve men have just seen me.'
 [lit. 'the men are twelve and they have just seen me (reported event)'.]

The functional differentiation of the two parts of a discontinuous head-modifier construction suggests that they are best analyzed as two distinct referring expressions, one an anaphoric-head construction and the other a nominal head. Also, the functional differentiation of discontinuous modifier–noun constructions from contiguous modifier–head constructions indicates that the discontinuous and contiguous constructions are distinct, and so one cannot infer anything about the structure of the contiguous constructions from the discontinuous ones (cf. Louagie and Verstraete 2016:54). If the modifier and head of contiguous constructions are functionally a unit, and if they are also prosodically a unit, then they have the unified modifier–head information packaging that we have assumed for unitary argument phrases.

This is most likely the case most of the time, but not necessarily all of the time. There is evidence that new modifier constructions arise when the anaphoric-head modifier construction is extended to take a non-anaphoric, common noun head. One possible way for this to happen is that a “discontinuous” pair of phrases with different functions come to share the same, ordinary modification function; then they occur contiguously; then they are necessarily contiguous as with ordinary modification constructions.

In most cases, this hypothesized origin of modification constructions is difficult to observe. It was noted above that the most common anaphoric-head strategy is the null anaphoric head. When the anaphoric-head modifier construction has a null head, it is identical to the ordinary attributive phrase. If a null-headed anaphoric-head construction comes to be used with noun heads, one cannot tell that this happened by simply comparing anaphoric-head constructions to ordinary modification construction. One can observe this hypothesized process for the creation of modifier–head constructions only when the anaphoric-head modifier is overtly headed, as in Supyire and Mambay, and even more clearly when nouns in apposition are also distinguished, as in Mambay.

In Supyire, the typical construction for a definite genitive phrase modifying a head noun is juxtaposition of the modifying noun and the head noun (Carlson 1994:203):

- (44) ḥkùù-ŋi fükàn-yí
 chicken-DEF.CL1.SG wing-DEF.CL2.PL
 'the chicken's wings'

An anaphoric-head modifier requires the Pronominal Root *wu-* (Carlson 1994:205):

- (45) bàmbemé wú-yí
 Babemba POSS-DEF.CL2.PL
 'Babemba's [bones]'

In addition, there is a construction – called the Descriptive Genitive by Carlson – in which the modifier requires the Pronominal Root when combined with a head noun. (This is the normal construction with ordinal numerals.) The Descriptive Genitive construction is often found when the head noun is a personal pronoun (e.g. ‘I a soldier’), but it is also found with common nouns (Carlson 1994:229):

- (46) kàsunnté' nípjyéé' wóóre
 feast.DEF(CL4) this_year POSS.DEF(CL4)
 ‘this year’s feast’

Supyire may represent an intermediate stage, in which an anaphoric-head modifier construction using the Pronominal Root is coming to replace the more typical possessive construction which does not use the Pronominal Root.

Mambay offers further evidence for this process. Mambay nouns have two forms, a Free Form and a Linking Form (glossed LK in the examples). The Free Form is used when there are no modifiers as in example (47), or in the appositive strategy for reference as in example (48) (Anonby 2011:487, 196):

- (47) tí-gérém dádf-zí túrà
 AUG-woman:PL SOW:PFV-PL millet
 ‘The women sowed millet.’

- (48) wáà kádá
 chief Kada
 ‘the chief Kada/Kada, the chief’

The Linking Form is used for all modifiers in the ordinary modification construction, except indefinite numeral modifiers (Anonby 2011:195–96; example (49) is from page 276):

- (49) bék gúrúrú
 water:LK deep
 ‘deep water’

The anaphoric-head construction uses an overt strategy: the modifying word is prefixed with ?ì- (glossed HEAD), possibly derived from ?igà ‘thing’ (Anonby 2011:190, 274):

- (50) ?ì-báhlám
 HEAD-deep
 ‘that which is deep, the deep one’

There is an alternative modification construction in which the noun occurs in the Free Form, as in appositive constructions, and the modifier is prefixed with ?ì- (Anonby 2011:276; the italicization of the modifier in the gloss is not explained, and may represent a slight difference in function):

- (51) byáá ?ì-gúrúrú
 water HEAD-deep
 ‘the *deep* water’

In example (51), the head noun form characteristic of the appositive construction (the Free Form) is combined with the property concept form characteristic of the anaphoric-head construction (prefix *?i-*). This construction appears to be an intermediate stage, in which an anaphoric-head form is placed in apposition to an independent nominal form.

Mambay grammatically distinguishes head nouns in modification and apposition, and distinguishes modifiers with noun heads and anaphoric-head modifiers. These two facts allow us to see the process by which prototypical apposition is used to extend anaphoric-head modifiers to modify nouns.

Greenberg proposes a historical account of word order change in numeral classifier constructions that may be an instance of this process. As noted above, the numeral + classifier often functions as an anaphoric-head construction. Greenberg notes that the numeral + classifier phrase order is ‘almost invariably fixed’ (Greenberg 1975:228), but the order of numeral + classifier and the noun it modifies is often variable. Moreover, there is commonly a shift of the numeral + classifier from postnominal position to prenominal position (Greenberg 1975:229). Variable word order and postnominal position suggest a looser syntactic relationship of the modifier to the noun (see section 5.3). The shift to prenominal position may represent the tightening of the syntactic relationship to a typical modifier–head construction.

The emergence of new modifier–head constructions via apposition of an anaphoric-head construction to a noun appears to occur with other modifiers. The concatenation of property modifiers and other modifier types with their own articles to a noun with its article, seen in the Modern Greek examples in sections 4.4.2 and 5.3, probably represents the juxtaposition of a null anaphoric article + modifier construction with a head noun.

The Kukama-Kukamiria example of a nominalized property concept modifier in section 4.1.5, repeated below as example (52), may also originate in apposition:

- (52) tawa tini-n muritsu mutsana
 clay be_white-NR jar remedy
 ‘The white clay is the jar’s remedy (= can be used to seal jars).’

The meaning of the nominalization of the property concept ‘white’ *tini-n*, is not ‘whiteness’ but ‘one that is white’ (Vallejos 2016:120). This construction may have originated as ‘one that is white’ in apposition to ‘clay.’

Finally, deictic demonstrative pronouns stand alone as referring expressions. They may also combine to form referring expressions with nouns that otherwise can stand alone as referring expressions (section 3.1.3). It may be that contiguous modifier–head constructions are unitary constructions in most cases, but they may have arisen from apposition of formerly independent referring expressions.

Terms Defined in this Chapter

5.1 Introduction

5.2 The Modification–Reference Continuum

5.2.1 Anchoring and Non-Anchoring Nominal Modification Constructions

anchor (*a.k.a.* reference point) (*inf*), anchoring (*inf*), anchoring construction (*cxn*), typifying (*inf*), typifying (*a.k.a.* non-anchoring) construction (*cxn*), binominal lexeme construction (*cxn*)

5.2.2 Mensural and Quantifying Constructions

sortal classifier (*str*), mensural classifier (*str*), mensural construction (*cxn*), pseudo-partitive (*str*), partitive construction (*cxn*)

5.2.3 Inalienability Revisited

5.2.4 The Modification–Reference Continuum: Summary

modification-reference continuum

5.3 Word Order and the Structure of Referring Expressions

Prenominal Integration

5.4 Anaphoric-Head Constructions, Apposition and the Origin of Referring Expressions

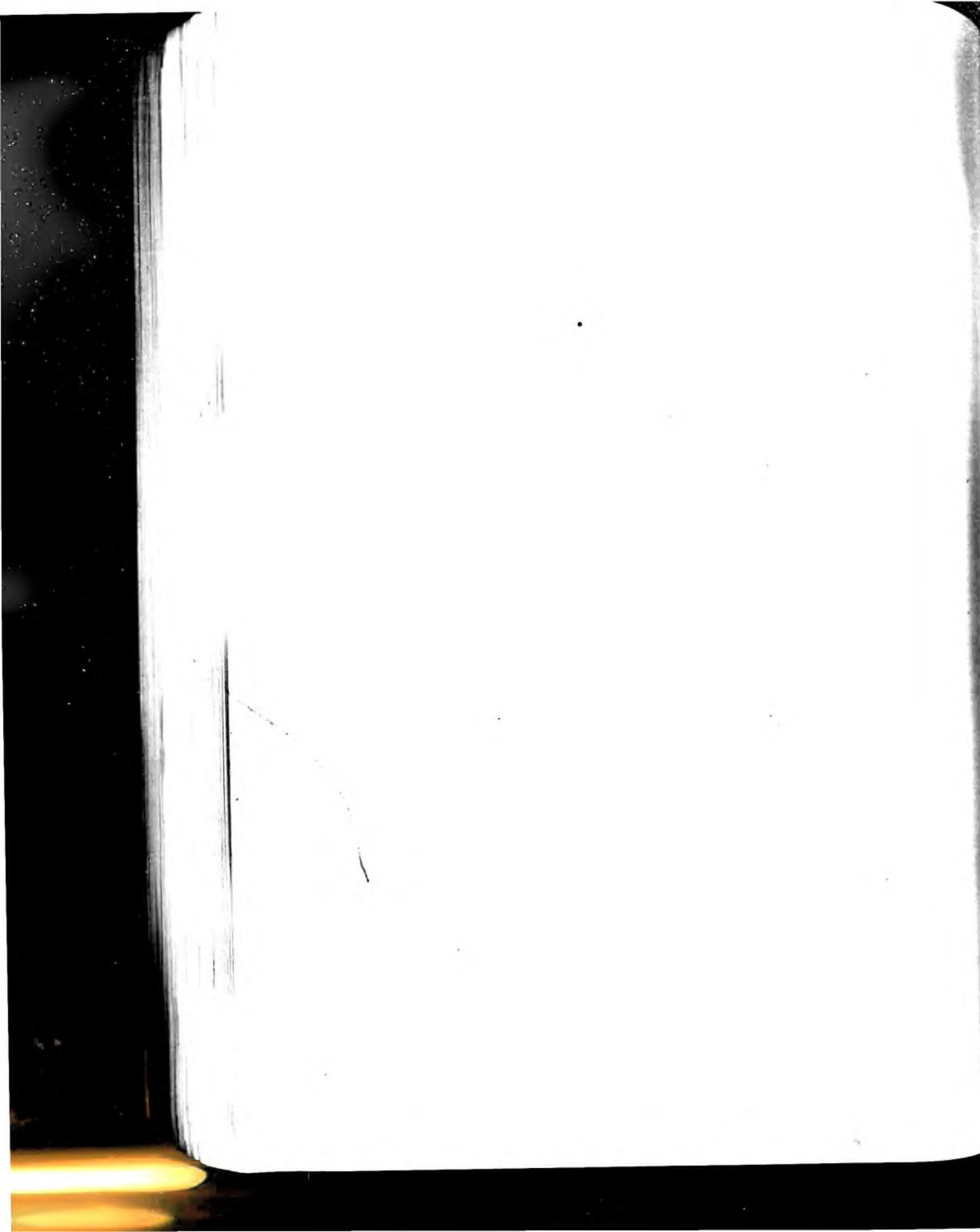
type identity (*sem*), token identity (*sem*), anaphoric-head construction (*cxn*), overtly headed strategy (*str*), headless (*a.k.a.* null anaphoric head) (*str*), apposition (*str*)



PART III

Clause Structure

Predication and Arguments



6 Event Structure and Argument Coding

Semantics, Transitivity, and Alignment

6.1 Semantics and Information Packaging in the Clause

6.1.1 Predication and Arguments, and Events and Participants

Verbal clause constructions (section 2.2.1) express the prototypical combination of the information packaging function of predication and the semantic class of actions. Predication adds information to an open discourse file. There are also nonpredicational clauses, discussed in Chapters 10–12; in this chapter and Chapters 7–9, we will look only at predicational clauses, and primarily just verbal clauses.

Just as we saw that referring phrases consist of two types of elements – the head (the noun, in the prototypical case) and modifiers of different kinds – a clause construction consists of two types of elements: the head and arguments of different kinds. The head in the prototypical case, the verbal clause, is the verb, which denotes an action concept (section 2.2.3). More generally, the head of a clause may be any kind of event – states as well as actions – when it is predicated. The predication of object and property concepts will be discussed in Chapter 10. The predicate may be simple, consisting of one word, or complex, consisting of multiple words, some of which express semantic categories associated with predication, others of which express components of the action that is predicated (see section 2.2.4). Discussion of the structure and typology of complex predicate constructions is deferred to Chapters 13–14. In this chapter, we will assume the existence of a predicate element, simple or complex, and focus on the strategies for expressing the arguments of the predicate.

An action, or more generally event, has **participants (sem)**: entities, usually objects (persons and things), that participate in the event. When the action is packaged as a predication (section 2.1), and the participants are packaged as referents dependent on the predicated action, we describe them as arguments (section 2.1). The construction that expresses an argument is an argument phrase (section 2.2.4). The terminology for different types of participants, arguments, and argument phrases is presented in Table 6.1; the different types will be described below.

An important feature of participants is that there is often more than one participant in an action. Moreover, actions are semantically very diverse. In particular,

Table 6.1 *Prototypical semantic, information packaging (discourse), and grammatical categories at the clause level*

Semantics	Information packaging (discourse)	Grammatical construction
action (more broadly, event)	predication	clause <i>head</i> : verb (actions), predicate (events)
participant (roles) central participant(s)	argument (= referent) more salient argument(s)	argument phrase core argument phrase(s) (subject > object)
peripheral participant(s)	less salient argument(s) • argument(s)	oblique argument phrase(s)

different classes of events have quite different semantic **participant roles (sem)** that their participants play in the event (to draw again on a theater metaphor; see section 3.4.1). For example, compare eating a brownie and writing a letter: in the first action, the brownie disappears, and in the second action, a letter comes into existence. These are two very different effects on the participant role in the eating event and the writing event, even though both are expressed by the Direct Object phrase in English. Or compare touching a table and smashing a table: in the first action, the table does not undergo any change of state, but in the second action, the table undergoes a change in material integrity. In other words, the types of actions that form the prototype for predication are themselves semantically quite heterogeneous. The heterogeneity increases when we include states as well as actions – recall that events include both states and actions. If we compare my liking a picture to my resembling a picture, the participant role of myself as well as the role of the picture differs from liking to resembling, not to mention the roles in eating, writing, touching, or smashing.

The relationship between semantics – actions and their participants – and information packaging – a predication and its arguments – gives rise to two general problems of linguistic expression that speakers must resolve in the grammar of their language. The two problems pertain to semantics and information packaging, respectively: What is the semantic content I want to express? How should I package this semantic content?

For events and their participants, the semantic problem is: how to communicate to the hearer who did what to whom? One cannot have a grammatical form for each participant role – there are too many participant roles. Speakers have to exploit a more general structure of events in order to simplify the task of expressing participant roles. In practice, most linguists analyze participant roles in terms of more general roles that seem to cut across large classes of events. For example, many events involve a person who volitionally initiates the events, and this more general role is typically called the ‘agent’ role. We will call these more general roles **semantic roles (sem)**; they are also called ‘thematic roles.’

The most common semantic roles will be introduced in section 6.1.2. However, in section 6.1.2, we will also show that participant roles and semantic roles are ultimately defined in terms of event structure (see Croft 2012 for a detailed exposition of this position).

The second problem for expressing events and participants is how to package the multiple referents in order to convey differences between the discourse statuses of the referents. This question pertains to the realm of arguments. It appears that the primary factor determining argument status and expression as argument phrases is their degree of **salience** (*inf*) or **topicality** (*inf*) to the interlocutors in the discourse. The salience of a referent pertains to the degree of attention directed to that referent by the interlocutors at a given point in the discourse.

Broadly, participants can be ranked by degree of topicality in accordance with the structure of the discourse. This ranking contributes to grammatical encoding of arguments in argument phrases so that, prototypically, referents higher in topicality are in grammatically “higher” roles. The names usually given to the argument phrases in this ranking are **subject phrase** (*cxn*), **object phrase** (*cxn*), and **oblique phrase** (*cxn*), with the subject phrase encoding the most salient/topical argument, the object phrase encoding the next most salient argument, and oblique(s) encoding the least salient argument(s). Here we will (somewhat controversially) use the same terms for the information packaging functions: the **subject (argument)** (*inf*) is the most salient participant in the event, and **object (argument)** (*inf*) is the next most salient participant (see section 6.3.2). Subject and object are grouped together as **core arguments** (*inf*), and subject and object phrases are **core argument phrases** (*cxn*). These terms will be defined more precisely in section 6.2.1. Less salient arguments are expressed by oblique phrases.

The speaker has to solve both of these problems at once, of course: identify who did what to whom in the event, and choose which participant(s) will be construed as most salient. As with the propositional act functions, the nature of reality (as conceived by humans) helps. One factor that contributes to the salience of arguments is the participant role of the participant referred to. Broadly speaking, some participants are more **central participants** (*sem*) to the event than others; this will be discussed further in section 6.1.2. The most central participants are those that initiate the action, and those that are most completely affected by the action. For example, in an eating event, the eater initiates the action and the food is most completely affected by the action. This is the second major semantic characteristic of events determining argument expression (see section 6.2.1 for further discussion). Other participants that are involved, such as the utensils used in eating, or the plate on which the food sat, are only **peripheral participants** (*sem*) to the event.¹

¹ Some linguists divide peripheral participants into ‘arguments’ (including core arguments) vs. ‘adjuncts.’ The assumption behind this division is that a sharp division can be made between semantically “obligatory” participants and semantically “optional” ones, the latter

Prototypically, the central participants are the most salient participants – that is, the core arguments; and the core arguments are expressed by the core argument phrases. Specifically, the participant referred to by the subject phrase acts on the participant referred to by the object phrase; this is often notated subject → object. And, prototypically, peripheral participants are expressed by oblique argument phrases, if they are expressed in the clause at all.

Of course, the prototypical correlation between semantics, information packaging, and grammatical construction represented by the rows in Table 6.1 doesn't always hold. Speakers will want to highlight peripheral participants and/or downplay central participants, while still successfully conveying to the hearer who did what to whom. As we saw in section 2.3 with regard to categories of entities and propositional acts, just about any semantic participant role can be expressed in any information packaging argument type. Table 6.2 illustrates this fact.

We have already observed that some combinations of semantic categories and information packaging are favored by the nature of reality, including human psychological preferences. This follows the second principle of information packaging described in section 2.3. Prototypically, the more salient argument is a participant that acts on the less salient argument. For example, the agent acts on the patient in a change-of-state event. (Peripheral participants have a more complex relationship to their expression as oblique argument phrases; see sections 6.2 and 8.1.) This is not entirely surprising, because the agent is almost always human and the patient is often an inanimate object, so the transmission of force (see Section 6.1.2) corresponds to the ranking of the participants on the Extended Animacy Hierarchy (section 3.1.2). The prototypical combinations of participant roles and argument salience are represented in the diagonal from upper left to lower right in Table 6.2, as well as by the bottom two rows in Table 6.1. We will offer a definition of the prototypical combinations of participant roles and argument salience in section 6.2.1. This definition will be in terms of the prototypical transitive construction – a prototypical construction like the prototypical constructions for parts of speech explained in section 2.2.3.

The nonprototypical combinations of participant roles and argument salience are found in the cells of Table 6.2 off that diagonal. In most languages, distinct constructions have been conventionalized to express the nonprototypical combinations, just as there are particular constructions that have been conventionalized for nonprototypical combinations of semantic class and propositional act function (see section 2.2.5). The grammatical constructions for prototypical and nonprototypical combinations are generally called **voice constructions (cxn)**.

also being morphosyntactically “optional.” However, there is no sharp semantic division such that some participants are “obligatory” and others are “optional.” Even the time and place of an action are obligatorily evoked, albeit very peripherally. Also, the phrases expressing even central participants that are highly salient may be morphosyntactically “optional,” as is found with zero anaphora (see section 3.3.1). There is no clear comparative concept of ‘adjunct,’ and the term is not used in this textbook.

Table 6.2 *Packaging of semantic roles in events as either subject, object, or oblique*

core			
	subject	object	oblique
agent	<i>The protesters sprayed green paint on the sidewalk.</i>	—	<i>Green paint was sprayed on the sidewalk by the protesters.</i>
	<i>The director presented the watch to Bill.</i>		<i>Bill was presented with the watch by the director.</i>
patient, theme	<i>Green paint was sprayed on the sidewalk by the protesters.</i>	<i>The protesters sprayed green paint on the sidewalk.</i>	<i>The protesters sprayed the sidewalk with green paint.</i>
	<i>The watch was presented to Bill by the director.</i>	<i>The director presented the watch to Bill.</i>	<i>The director presented Bill with the watch.</i>
goal, recipient	<i>The sidewalk was sprayed with green paint.</i>	<i>The protesters sprayed the sidewalk with green paint.</i>	<i>The protesters sprayed green paint on the sidewalk.</i>
	<i>Bill was presented with the watch by the director.</i>	<i>The director presented Bill with the watch.</i>	<i>The director presented the watch to Bill.</i>

Since there is a variety of voice constructions, we will call the prototypical combination a **basic voice construction (cxn)** and the different kinds of nonprototypical combinations **nonbasic voice constructions (cxn)** (see Chapter 8 for more discussion of basic and nonbasic voice constructions).

The combination of argument phrases that are found in a single clause is called an **argument structure construction (cxn)** (Goldberg 1995; Croft 2012). For example, in *The protesters sprayed the sidewalk with green paint*, the argument structure construction is the combination of Subject (*the protesters*), Object (*the sidewalk*), and with-Oblique (*with green paint*) argument phrases that occurs with the Verb *spray*. The form of the argument structure construction, represented as [Subject Object with-Oblique], is paired with its function. The argument phrases are paired with the semantic participant roles that the referents of the argument phrases are playing in the event. The semantics of the argument structure construction is an event where an agent (expressed as Subject) applies a substance (expressed as a with-Oblique) to a surface (expressed as Object). On the information packaging side, the argument structure construction also indicates the salience of the participants, such that the surface, expressed as an Object, is more salient than the substance, expressed as an Oblique; contrast *The protesters sprayed green paint on the sidewalk*, where the substance is expressed as Object and the surface as an Oblique.

This brief introduction should demonstrate to the reader that the packaging of participant roles into arguments and their expression in argument structure constructions is quite complex, both within and across languages. It is also probably the best explored area of grammar crosslinguistically. For this reason, we will devote four chapters to argument structure constructions across languages. This chapter and the following chapter (Chapter 7) will discuss in some detail the semantics of events and their participants, and how they are expressed in argument structure constructions. In these chapters, we will largely restrict ourselves to the basic voice construction of a language – that is, the prototypical combinations of participant roles and argument salience that fall on the diagonal from upper left to lower right in Table 6.2. In Chapters 8–9, we will turn to nonbasic voice constructions in the world's languages, that is, nonprototypical combinations of argument salience (information packaging) and participant roles (semantics).

6.1.2 How Many Participants? How Are They Expressed?

Most discussions of the semantics of events focus solely on the salient participants of an event. A traditional classification of events divides them into **valency classes (sem)** based on the number of central participant roles (also called **valency**): **monovalent (sem)** events have one central participant role, **bivalent (sem)** events have two central participant roles, and **trivalent (sem)** events have three central participant roles. As noted above, in this chapter we restrict ourselves to the basic voice construction – that is, the argument structure constructions where the central participant roles are also the core arguments and expressed by core argument phrases. With respect to the basic voice construction, argument structure constructions are therefore divided into **intransitive constructions (cxn)** (one core argument phrase), as in *Shira slept* (see section 6.3); **transitive constructions (cxn)** (two core argument phrases), as in *Shira drank some water* (see section 6.2); and **ditransitive constructions (cxn)** (three core argument phrases), as in *Shira gave him some food* (see section 7.5). These three constructions and the semantic and information packaging categories associated with them are given in Table 6.3.

The terms in Table 6.3 may appear redundant. However, we will see that the constructions use a variety of morphosyntactic strategies, and so must be distinguished from the predication types (see sections 6.2–6.3 and 7.5). And the central participants of an event do not always match the core arguments of the predication, as will be seen in Chapters 8–9.

In fact, however, events have a much larger number of participant roles. Examples of some of the argument phrases expressing additional participant roles in a writing event, which is classed as bivalent, are given in (1a–i):

- (1)
 - a. She wrote a letter.
 - b. She wrote the letter **with a ballpoint pen**.

Table 6.3 *Transitivity of constructions and their functions*

Semantics	Information packaging	Grammatical construction
<i>Events by number of central participant roles (semantics)</i>	<i>Predications by number of arguments</i>	<i>Constructions by number of core argument phrases</i>
monovalent event	intransitive predication	intransitive construction
bivalent event	transitive predication	transitive construction
trivalent event	ditransitive predication	ditransitive construction

- c. She wrote a letter **to the Sierra Club**.
- d. She wrote the letter **in green ink**.
- e. She wrote the letter **out of righteous indignation**.
- f. She wrote the letter **with her sister**.
- g. She wrote the letter **with some embarrassment**.
- h. She wrote the letter **in her office**.
- i. She wrote the letter **on Tuesday**.

The central participant roles are the writer and the writing or thing written, illustrated in all of (1a–i). Examples (1b–i) illustrate many other participant roles in a writing event.

Participant roles are specific to a particular semantic class of events, such as writing events in example (1) (Goldberg 1995:43; see also Fillmore 1977; Croft 1991a). The participant roles in an eating event are quite different: the eater and the food are the central participants, but there are also the utensils, the plate or other location of the food, the location of the eating event, and so on.

A large-scale systematic survey of all the participant roles in a wide variety of event types can be found in the FrameNet project (<https://framenet.icsi.berkeley.edu/fndrupal>). Frame semantics (Fillmore 1982, 1985; Fillmore and Atkins 1992) assumes that word meanings can only be understood in terms of the entire situation that the word meaning presupposes. In the case of events, the situation includes all of its participants. FrameNet can be thought of as constituting a database of participant roles, called Frame Elements (FEs), for events.

The additional participant roles in (1b–i) beyond the writer and the thing written are usually analyzed as peripheral participant roles, expressed as oblique argument phrases – that is, participants that are packaged as generally less topical or salient than the participants expressed by core arguments. In fact, as we noted in section 6.1.1, the salience of participants may vary partly independently of their role in the event, so we cannot simply ignore oblique argument phrases in the analysis of argument structure constructions.

Peripheral participant roles are often categorized into semantic roles – that is, broad categories of participant roles. Some common peripheral semantic roles are given in Table 6.4.

Table 6.4 *Common peripheral semantic roles*

Peripheral semantic role	Example
instrument	<i>Jack broke the window with a rock.</i>
comitative	<i>I went to the concert with Carol.</i>
cause	<i>The house collapsed from neglect.</i>
recipient	<i>I sent the forms to the accountant.</i>
beneficiary	<i>Terry made lunch for Sandy.</i>
maleficiary	<i>My car broke down on me.</i>

Table 6.5 *Common core semantic roles*

Core semantic role	Example
agent	<i>Jack broke the window.</i>
patient	<i>Jack broke the window.</i>
force	<i>Lightning shattered the old tree.</i>
experiencer	<i>Sally saw the dog.</i> <i>Dogs frighten me.</i>
stimulus	<i>Sally saw the dog.</i> <i>Dogs frighten me.</i>

These semantic role names are often used as labels for oblique flags (case affixes or adpositions) whose functions include these roles.

There are also semantic role categories for participant roles that are generally expressed as core argument phrases. Common core argument phrase semantic roles are given in Table 6.5.

There is not always a consistent realization of semantic participant roles as core arguments, even in the basic voice construction, for certain types of events. This is true, for instance, for the semantic roles for experiential events illustrated in the last two rows of Table 6.5 (see section 7.4). The argument realization of these less prototypical events within and across languages will take up much of this chapter and the next.

The semantic role names are used to categorize participant roles in a wide range of events. While convenient, they are actually somewhat misleading in capturing the semantics of flags across languages, and even within a single language. The main problem is that there are no sharp boundaries among participant roles. For example, the so-called instrument role is somewhat different in the following three events:

- (2) a. He broke the window **with a rock**.
 b. **The rock** broke the window.
- (3) a. She wrote the letter **with a ballpoint pen**.
 b. ***The ballpoint pen** wrote the letter.
- (4) a. I ate the peas **with a spoon**.
 b. ***The spoon** ate the peas.

The so-called instrument can be expressed in a subject phrase in English only with breaking events and similar events (see section 6.2.1); contrast (2b) with (3b) and (4b). This construction reflects a nonprototypical, higher degree of salience for this participant, when this participant has a higher degree of independent “responsibility” for the outcome; in fact, the rock may initiate the event without an agent present. Writing events do not allow this option, because the ballpoint pen cannot independently write the letter, and so the agent-instrument relationship in writing events is different from that in breaking events. Finally, the role of the so-called instrument in eating events is completely different, because the relationship between the spoon’s role and the ultimate fate of the food is completely different from that between the rock and the window, or even the pen and the letter.

Also, the contrast between supposedly distinct roles is not clear. In (5a), it is generally agreed that the referent of the *to*-phrase is a recipient, a participant role which is also expressed as a core argument phrase in English, as in (5b), but not a spatial role, hence the ungrammaticality of (5c):

- (5) a. We gave the books **to the children**.
 b. We gave **the children** the books.
 c. *We gave the books **towards the children**.

In (6), the referent of the *to*-phrase is a spatial goal, namely destination – a role which is usually expressed as an oblique argument phrase in English, but cannot be expressed by an object phrase (compare [6a,c] to [6b]):

- (6) a. She carried the dog **to the pool**.
 b. *She carried **the pool** the dog.
 c. She carried the dog **towards the pool**.

But in (7), the referent of the *to*-phrase appears to be both a recipient and a spatial goal:

- (7) a. I threw the ball **to my sister**.
 b. I threw **my sister** the ball.
 c. I threw the ball **towards my sister**.

Finally, some participant roles are very specific to one type of event and do not fit into the standard semantic role categories very well: what is the role played by the green ink in example (1d)?

In order to capture linguistic patterns, we must often resort to the more fine-grained participant roles rather than the more general semantic roles. Using participant roles instead of semantic roles helps to identify differences between participant roles in the grammatical expression of those roles, such as the difference between a breaking-instrument and an eating-instrument in (2) and (4). But it does not help to identify **similarities** between participant roles – for example, the fact that both breaking-instruments and eating-instruments use the same flag

in (2) and (4) (the preposition *with*). Examples (2)–(7) show that semantic roles do not always provide the correct categorization of participant roles.

There is, however, a fundamental semantic principle that motivates the grouping of participant roles under a single flag, alluded to in section 6.1.1: the **causal structure (sem)** or **force dynamics (sem)** of the event – that is, who is acting upon whom (Talmy 1976, 1988/2000; DeLancey 1981; Langacker 1987; Croft 1991a, 2012). The participant roles described above are actually defined in terms of the role that each participant plays in a particular type of event. The event can be schematically represented in terms of how the participants in the event act on one another, and are acted upon by one another. These interactions go under the name of **transmission of force (sem)** from one participant to another (also called the **causal chain (sem)**; see Croft 1991b:chs. 4–6; 2012:ch. 6, and references cited therein). For example, if I break a window, I have transmitted force to the window; and if I break a window with a hammer, I have transmitted force to the hammer which in turn transmits force to the window. In a causal chain, the participant earlier in the causal chain is the **initiator (sem)** and the subsequent participant is the **endpoint (sem)** (Croft 1991a:166–67).

The prototypical transmission of force pattern is a 1-dimensional causal chain,

- (8) Susan broke a coconut for Greg with a hammer.
 agent → instrument → patient → beneficiary
 (Susan) (hammer) (coconut) (Greg)

The agent is prototypically expressed as subject and the patient as object, in the functional sense of those terms as representing the “primary” and “secondary” salient participants in an event (see section 6.3.2 for further discussion of the use of these terms). The subject participant is antecedent to the object participant in the causal chain – that is, the transmission of force is from subject to object in this causal chain. Example (8) is an example of the prototypical expression: *Susan* is the subject and *a coconut* is the object.

Certain participant roles or semantic roles (instrument, comitative, cause, and even agent if the agent is not subject, as in a passive-inverse voice construction; see section 8.3) are **antecedent roles (sem)** to the patient in the causal chain – or, more generally, the participant chosen as the object. For example, in (8) the hammer is the instrument and plays an antecedent role: it acts on the coconut which is expressed as the object. A flag that is used for multiple antecedent roles is typically labeled ‘Instrumental’ since such a general flag usually includes instrument-like participant roles.

Certain other roles (recipient, beneficiary, maleficiary, purpose) are **subsequent roles (sem)** to the patient in the causal chain – or, more generally, the participant chosen as object. For example, in (8), Greg is the beneficiary and plays a subsequent role: the coconut’s breaking affects Greg in a positive way. A flag that is used for multiple subsequent roles is typically labeled ‘Dative’; a ‘Dative’ flag usually includes recipient-like participant roles.

Language-specific flags always express a range of participant roles across a range of events; but they are generally quite consistent in coding only antecedent roles (the ‘instrumental’ categories) or only subsequent roles (the ‘dative’ categories; Croft 1991b:184–212; 2012:221–33, 274–81). This semantic division is ultimately diachronic in that flags for antecedent roles are normally extended semantically to other antecedent roles – for example, flags for comitative roles, such as English *with*, are extended to instrument roles – and flags for subsequent roles are normally extended semantically to other subsequent roles (Lehmann 2002:99; Croft 2012:279). There is some evidence that language-specific flags may also distinguish roles antecedent to the subject participant (e.g. cause, source, agent when agent is not subject) from roles subsequent to the participant role expressed as subject but antecedent to the role expressed as object (e.g. instrument, manner; see Luraghi 2001; Croft 2012:280). Luraghi calls these roles **concomitant (sem)** roles.

The causal chain in (8) represents the force-dynamic pattern of only a fairly specific semantic class of events: the class of agentive change of state events like (transitive) *break*; see section 6.2 for a more detailed description of this class. But this is only one of many different types of events.

Hartmann et al. (2014) is the first detailed typological analysis of the constructions used to encode a wide variety of semantic types of events, analyzing a set of eighty-seven predicates and their arguments across twenty-five genetically and geographically diverse languages. Hartmann et al. use multidimensional scaling, a statistical technique (see Croft and Poole 2008), to provide a 2-dimensional spatial analysis of the similarity relations among participant roles, which they call **microroles (sem)**, in terms of how they are grouped together under particular flagging and indexation morphemes across languages (Hartmann et al. 2014:470, fig. 3). Hartmann et al. modified their raw data; Figure 6.1 is a reanalysis of microroles / participant roles according to their flagging and indexation, by Meagan Vigus, using the raw crosslinguistic data from the Valency Patterns Leipzig (ValPaL) project (the same source used for Hartmann et al.’s data).²

The analysis reveals two orthogonal dimensions of similarity. The first dimension, from upper right to lower left, is the information packaging dimension of (prototypically) central vs. peripheral participant roles. The second dimension, from lower right to upper left, is the force-dynamic dimension of transmission of force, from antecedent to subsequent participant roles in the causal chain. That is, the second dimension goes from subject to object participants among core roles, and from antecedent to subsequent participants among oblique roles. There is some continuity in the lower right between core and peripheral subsequent participant roles, because recipient and recipient-like roles (addressee, tellee, shoutee etc.) sometimes are encoded in a core role (object), sometimes in a peripheral role (subsequent oblique; see section 7.5).

² <http://valpal.info>, accessed March 17, 2017.

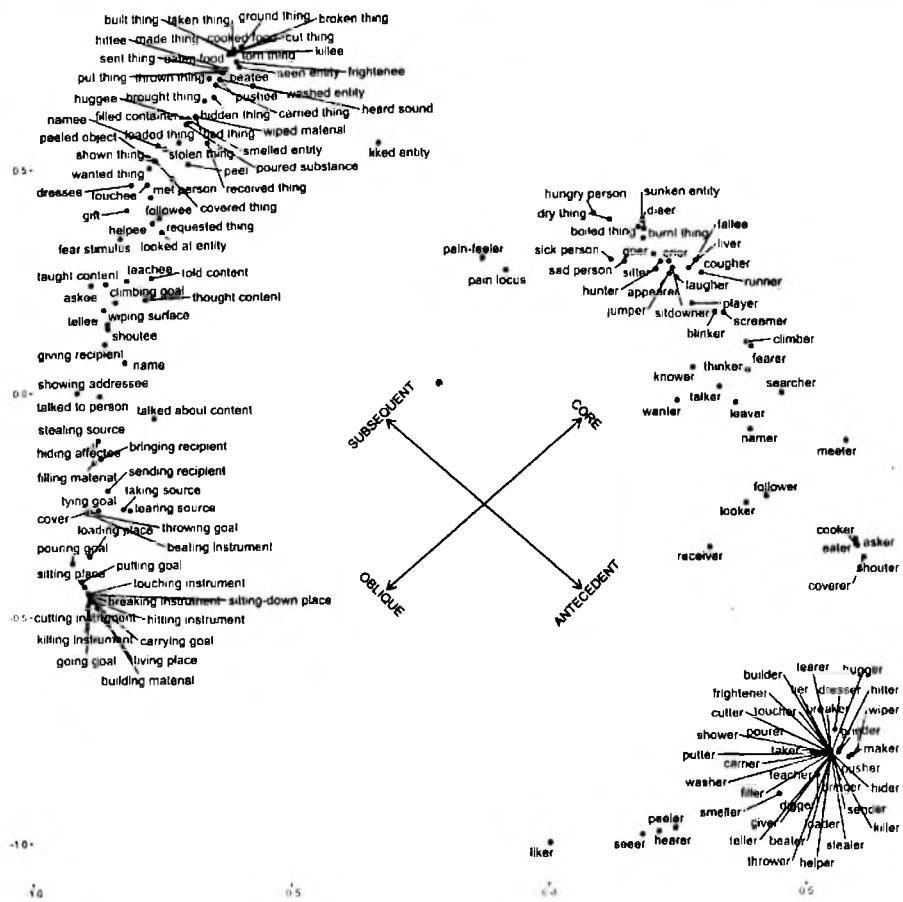


Figure 6.1 *Analysis of semantic similarity of microroles / participant roles using multidimensional scaling (MDS analysis by Meagan Vigus using raw ValPaL data)*

In the remainder of this chapter, we will provide a brief overview of how languages express the prototypical force-dynamic event type illustrated in (8), and some of the other nonprototypical event types for which crosslinguistic comparison has been done. Much of the variation involves which participant role(s) are expressed in core argument phrases, and, if so, whether the role is expressed as a subject or object argument. In Chapter 7, we will survey the major patterns of expression of subject, object, and oblique – that is, argument structure constructions – for a range of nonprototypical event types. There are a large number of different event types, and Chapters 6–7 touch on only the most important ones for morphosyntactic variation. At the end of Chapter 7 (section 7.6), a summary of all of the event types discussed in Chapters 6–7 is presented, to provide an overview of the major event classes discussed here.

6.2**The Transitive Construction and the Prototypical Bivalent Event****6.2.1****The Transitive Construction as a Prototype Construction**

Although events typically are construed (packaged) with one, two, or three central participants, bivalent events – events with two central participants, expressed in subject and object phrases – are generally taken to be the prototypical clausal event type. There is a good reason for this. In section 6.3, we will see that intransitive event types are actually rather varied on the basis of the semantic properties of prototypical transitive events, and their grammatical expression is equally varied. In section 7.5, we will see that event types with three salient participants also vary in the grammatical expression of their participants in ways that suggest that the transitive event type is the prototypical one.

It is generally assumed that the most prototypical transitive semantic class of events is the type called **change of state (COS) events (*sem*)** by Levin (1993).³ Change of state events are those in which a participant, the patient, undergoes a change of state, usually a change of physical state; an example would be dishes becoming dry. More specifically, the prototypical transitive event is a change of state in which an external volitional agent brings about a change in a patient, such that the patient enters a resulting state; an example would be a person drying dishes. We will call change of state events with an external agent **agentive change of state events (*sem*)**.

Change of state verbs (cxn), which predicate change of state events,⁴ include verbs of breaking and verbs describing changes in a physical property of the patient referent:

- (9) a. Sarah broke the cup.
 b. Jim dried the platter.

Events that lack certain semantic properties that change of state events have may encode their participants in different ways than the basic transitive construction of the language (Hopper and Thompson 1980; see also Hopper and Thompson 1982, and Chapter 7 in this book). Hopper and Thompson (and other

³ Levin (1993) provides a detailed and frequently cited classification of verb classes by their event semantics and the argument structure constructions they occur in. A modified version of Levin's semantic classes forms the basis of VerbNet, an online resource; the Levin semantic class numbers (slightly revised) can be found at <http://verbs.colorado.edu/verbnet>.

⁴ This chapter and the following chapter will introduce many different semantic classes of events. The convention that is widely adopted for describing verbs that express events in a semantic class is simply to compound the semantic class name with 'verb' ('change of state verb,' etc.).

scholars) identify a number of semantic properties that make change of state events prototypical transitive events – that is, more likely to be expressed by the prototypical transitive construction of the language, with two core argument phrases encoding two central participants of the event.

The primary semantic properties of events are force-dynamic (causal) and aspectual. Force dynamics was introduced in section 6.1: it describes the causal or transmission-of-force relationships between participants. As noted above, agentive change of state events are prototypical in force-dynamic terms: they involve a volitional agent acting on a patient that is affected by the transmission of force.

Affectedness is more than simply the endpoint of transmission of force; it also describes how a change takes place in a participant – in this case, the patient. These changes are best described in aspectual terms. This will require a brief explication of **aspect (sem)**, which is a rich semantic category that is often expressed by inflectional or derivational affixes.

Aspect characterizes how events unfold over time. Aspect contrasts with **tense (sem)**, which expresses the location of an event in time. Since events happen to participants, aspect also characterizes what happens to participants in an event over time. The basic parameters of aspect are time and qualitative change to participants. In this textbook, we will not analyze the semantics of aspect in any detail (see Croft 2012:chs. 2–4). However, Hopper and Thompson show that some common aspectual distinctions play a role in whether an event is expressed by a transitive construction or not. The most important aspectual distinctions for transitivity are summarized below:⁵

- **dynamic (sem) / stative (sem)**: whether a participant undergoes change over the temporal course of the event (dynamic, e.g. *Sarah walked down the street*) or not (stative, e.g. *Sarah is tall*). This distinction has already played a role in this book, in the analysis of major semantic classes and propositional acts in section 2.1.
- **telic (sem) / atelic (sem)**: whether the relevant participant ends up in a “natural” result state (telic – e.g. in *I crossed the street*, the natural result state is reaching the other side of the street) or not (atelic – e.g. in *I walked in the park*, there is not a natural result state for my walking). All telic events are dynamic.
- **punctual (sem) / durative (sem)**: whether an event is construed as taking place in an “instant” (punctual, e.g. *The balloon popped*) or over a period of time (durative, e.g. *They inflated the balloon*).
- **directed/undirected change (sem)**: whether the change that a participant undergoes in the course of an event is in one “direction” (directed – e.g. in *The storm expanded*, there is a gradual unidirectional increase in size) or not

⁵ We assume here a unidimensional approach in which what is called viewpoint aspect in the bidimensional approach represents a construal of what is called there lexical aspect; for further discussion, see Michaelis 2004; Croft 2012:ch. 2.

(undirected – e.g. in *The ball bounced around the room*, the ball does not change position in one direction). A directed change may be punctual, as with *break* in (9a), or durative, as with *dry* in (9b). A directed change may be telic (end in a “natural” end point), but it need not do so: for example, a fungus can grow and grow in size and this is a directed change. Directed changes will not figure in this chapter, but will be relevant to the analysis of the event classes described in Chapter 7.

Change of state events are dynamic: change happens in breaking and drying, for instance. Some event types are stative, such as *She resembles her mother*. Hopper and Thompson argue that dynamic events are more prototypically transitive than stative events. Change of state events are also telic. That is, the change leads consistently to a result state, such as being broken or being dry in (9a–b). Telic events are also more prototypically transitive. The change of state events in (9a) and (9b) differ in that the former is normally construed as punctual, so the change is construed as going “instantaneously” from whole to broken; but the latter is durative, so the directed change goes through intermediate qualitative states before the result state is achieved. Finally, events that are construed as punctual are more prototypically transitive than events construed as durative.

Another characteristic of prototypical change of state events is the implied presence of a third participant, the instrument (see section 6.1.2). The instrument is a physical object under the control of the agent, though it could be a part of the agent’s body rather than a third discrete participant (*She broke the cup with her hand*). The instrument is part of the causal chain with agent and patient (agent → instrument → patient; see [8] in section 6.1.2). In other words, the prototypical bivalent event actually has three participant roles in the causal chain, but only two central participant roles, the agent and patient. This fact will become relevant when we go on to examine the argument structure constructions for less prototypical bivalent events in sections 7.3–7.4, and trivalent events in section 7.5.

Haspelmath (2011b, 2015) argues for an exemplar-based approach for defining prototypical bivalent events – that is, he proposes that a single event type should be used as the basis for crosslinguistic comparison. The event type that Haspelmath proposes for the prototypical bivalent event is agentive ‘break’ as in (9a) and its translation equivalents. He argues that using just one event type prevents the complications that arise if a class of events is used and different verbs expressing events in the class are encoded by different strategies. Blasi (2015) uses a quantitative similarity measure to identify core events in a cluster defined by similar encoding of core participant roles within and across languages in the ValPal database (<http://valpal.info>), and shows that ‘break’ is indeed the most central member of this cluster.

The prototypical semantic event type of agent/initiator acting on patient/endpoint, with agent controlling the event and patient affected by the outcome of the event – specifically, the ‘break’ event – forms the basis for defining the

transitive construction (cxn), the comparative concept for the construction expressing a bivalent event (see Table 6.3). Breaking is force-dynamically a prototypical transitive: volitional agent acting on a fully affected patient. In addition, breaking is dynamic, telic, and punctual. Both the force dynamics and aspectual structure of breaking are characteristic of the prototypical transitive construction according to Hopper and Thompson.

However, Haspelmath's formulation describes only the semantic structure of the transitive construction, not its information packaging. Haspelmath did not intend the passive *The cup was broken by Sarah* or *the breaking of the cup by Sarah* to be an instance of the transitive construction. We must add the information packaging, such that the agent is more salient than the patient, expressed by the basic (active) voice form in (9a). So our revised definition is:

- (10) **transitive construction (cxn):** the construction used to express the agent of a breaking event and the patient of a predicated breaking event when the agent is more salient than the patient.

A further revision to this definition will be made in section 7.3.3.

The situation described in (10) is, of course, only one of many situation types that speakers express in languages. There are many other situation types: situations with only one salient participant (section 6.3); situations with two salient participants but lacking the force-dynamic and/or aspectual properties in (10) (sections 7.2–7.4); and situations with three salient participants (section 7.5). Many of the bivalent events in the basic voice construction are expressed with the same argument structure construction as breaking events, as observed by Blasi.

The transitive construction is the prototypical construction for defining subject, object, and oblique argument phrases. A **subject phrase (cxn)** is the argument phrase that expresses the agent of a predicated breaking event when the agent is more salient than the patient. An **object phrase (cxn)** is the argument phrase that expresses the patient of a predicated breaking event when the agent is more salient than the patient. These definitions will be revised in section 6.3.2. An **oblique phrase (cxn)** is an argument phrase expressing a peripheral participant in a predicated breaking event that is less salient than either the subject or the object argument (such as the instrument expressed by *with*).

Having defined different types of argument phrases in terms of the prototypical transitive construction, we turn to the morphosyntactic encoding strategies used with these argument phrases.

6.2.2 Basic Argument Structure Encoding Strategies, including Basic Word Order

Three encoding strategies are commonly found for constructions involving argument phrases, all illustrated in (11):

- (11) She is bending the rod with a pair of pliers.

The first strategy is a flag (adposition or case affix), a morpheme that encodes the semantic relationship between the participant and the event; flags were defined in section 4.3. For example, the agent role is encoded by the Subject form of the pronoun *she*, as opposed to the Object form *her*, in example (11). In English, the pronoun forms *she/her*, *I/me*, etc. are historically derived from pronouns with case affixes. Many other languages have a large set of case affixes applied to all types of nouns, although usually one flag is zero coded. An example of a language with a richer set of flags than English is Russian (Comrie 1989:77):

- (12) Tanj-a ubi-la Maš-u
 Tanya-F.NOM kill-PST:FSG Masha-F.ACC
 'Tanya killed Masha.'

The second strategy is indexation, a morpheme that indexes the argument; indexation was defined in section 4.4. In (11) above, the Auxiliary form *is* accompanying the verb indexes the Subject as third person singular. Again, English has very limited indexation, but other languages have a large set of indexation morphemes. Some languages index more than one argument, although usually one or more third person singular indexes are zero coded; the example in (13) is from Tzutujil (Dayley 1989:282):

- (13) x-Ø-uu-choy chee7 tza7n ikaj
 PST-3SG.ABS-3SG.ERG-cut tree with axe
 'He cut trees with an axe.'

Predicates typically use person indexation, as in (11) and (13). However, predicates may also use nonperson indexation: in (12), 'kill' indexes only the gender and number of the subject.

The encoding strategies for core argument phrases have an asymmetrical crosslinguistic distribution across core and oblique argument phrases. If an argument phrase lacks an overt flag (i.e. the flagging strategy is zero coding), then it almost always expresses a core role. The primary exceptions to this generalization are found when the oblique argument's semantic role is predictable – for example, when a place name is used to describe a location (Comrie 1986a; Aristed 1997; Croft 2001:234–35). Conversely, if an argument phrase is indexed, then it almost always expresses a core role. The primary exceptions are recipient roles (see section 7.5); recipient argument phrases may be indexed even if the argument phrase has an oblique ('dative') flag. The asymmetry of distribution of strategies is unidirectional: core argument phrases may have or lack flagging, and may or may not be indexed. Nevertheless, the asymmetry of strategies makes it possible to identify core vs. oblique arguments when the participant roles do not fit the transitive prototype (see sections 7.3–7.5).

Lastly, the strategy of word order (see section 4.2) can be used to determine who does what to whom. In English, the Subject argument phrase normally precedes the Verb, and the Object argument phrase follows it. A language in which neither flagging nor indexation is used to encode core arguments, and word order is used exclusively, is Khmer (Haiman 2011:203):

- (14) ka'se'kaw: samlap ko:n kru:k
 farmer kill child pig
 '(The) farmer(s) kills/killed (the) piglet(s).'

Many languages, including English, allow the word order to differ in different constructions while flagging and indexation remain the same. For example, *The rod she bent with a pair of pliers* encodes the subject phrase and object phrase with the same flagging and indexation as in (11), but the object phrase precedes the subject phrase. Alternations in word order often represent different clause-level information packaging functions of the type described in Chapter 11. In other words, word order is at best playing multiple functions in a sentence like (11), and the same appears to be true in most other languages. For this reason, flagging and indexation are generally treated as the primary encoding strategies by which arguments/participants are coded in clauses.

Nevertheless, there are important typological generalizations about **basic word order (str)** – that is, the dominant word order of subject, verb, and object in a language (for the use of ‘subject’ and ‘object’ as comparative concepts, see section 6.3.2). Basic or dominant word order is defined using several criteria (Croft 2003:42–44). The first criterion is so-called ‘pragmatic neutrality.’ This term is a bit of a misnomer, as there is no pragmatically ‘neutral’ information packaging, just different ways to package information for different communicative purposes (see section 11.1). Instead, the analyst decides that one particular construction type is “basic,” often in terms of token frequency. In the case of clauses, it is assumed that predicational information packaging is the “basic” type of information packaging (see Chapters 10–12 for other types of clausal information packaging constructions).

The second criterion is morphosyntactic structure: more complex structures, such as English *It was the rod that she bent* are likely to represent less basic word orders (in this case, it is pragmatically non-neutral as well). The third criterion is text frequency, which tends to serve as a proxy for “basicness.” For example, most research on basic word order does not categorize clauses by their information packaging functions, but assumes that the most frequent word order for the morphosyntactically simplest construction correlates with predicational information packaging. This operational criterion will not work for every language, though it is probably sufficient for the broad crosslinguistic patterns described in this book. Here, we follow Dryer (1989) in assuming that one order has to outnumber another order by two to one in order to count as a basic word order, other things being equal.

Table 6.6 *Distribution of the six basic orders of subject, object, and verb in WALS*

Dominant word order (subject, object, verb)	Number of languages in WALS	Percentage of languages in WALS
SOV	565	41%
SVO	488	35%
VSO	95	7%
VOS	25	2%
OVS	11	1%
OSV	4	<1%
no dominant order	189	14%
Total	1377	

The traditional analysis of basic clausal word order treats the order of subject, object, and verb as a whole (Greenberg 1966b), leading to a six-way distinction, plus languages with no dominant order. The distribution of languages in the WALS database (Dryer 2013b) is given in Table 6.6 (accessed August 9, 2017).

The WALS database is a very large and diverse, but not particularly balanced, sample of the world's languages. Nevertheless, the distributions in Table 6.6 reflect well-established patterns reported by other crosslinguistic studies. The most common dominant word orders by far are SOV and SVO; all four of the other orders are attested but make up around 10%. Of the latter, VSO is the most common, and the object-initial orders are extremely rare.

There is, however, a significant minority of languages – 14% – with no dominant order. Part of the reason for this is that very few sentences in naturally occurring discourse have a common noun phrase for both subject and object. First, approximately half of sentences in discourse are intransitive, lacking an object. Second, the vast majority of transitive sentences have no more than one common noun phrase, usually the object; this discourse pattern has been called Preferred Argument Structure or PAS (DuBois 1987; see section 8.1). For this reason, among others, Dryer (1997, 2013a) argues that a more fundamental characterization of basic word order is to split the word order types into subject–verb order and object–verb order. This leads to four types with dominant orders, and a set of types with one or both of subject and object lacking a dominant order. The distribution of languages in the WALS database according to this classification of basic word order is given in Table 6.7 (Dryer 2013c,d, accessed August 9, 2017).

The classification in Table 6.7 differs from that in Table 6.6 in two significant respects. First, SOV and OSV are combined into a single type, SV&OV, and so are VSO and VOS, namely VS&VO. It so happens that a significant number of verb-final and verb-initial languages allow either the subject to precede the object or vice versa, as long as the verb position remains the same. Such languages are classified as having no dominant order in Table 6.6, but not in

Table 6.7 *Distribution of the basic orders of subject and verb, and object and verb, in WALS*

Dominant word orders (SV, VO)	Number of languages in WALS	Percentage of languages in WALS
SV&OV (= verb-final)	677	46%
SV&VO (= SVO)	457	31%
VS&VO (= verb-initial)	180	12%
OV&VS (= OVS)	7	<1%
no dominant order & VO	55	4%
SV & no dominant order	51	3%
no dominant order & OV	12	1%
VS & no dominant order	4	<1%
neither has a dominant order	42	3%
Total	1485	

Table 6.7. As a result, the percentage of verb-final (SV&OV) languages, 46%, is greater than the percentage of SOV languages: 41% (OSV languages are extremely rare); and the percentage of verb-initial languages, 12%, is greater than the percentage of VSO and VOS languages: 9%. In other words, it makes sense to treat verb-final languages (SOV and OSV) and verb-initial languages (VSO and VOS) as word order types.

Second, the proportion of languages lacking a dominant order for either subject and verb or object and verb is only 3%, compared to 14% of languages lacking a dominant order in Table 6.6. This is due to the grouping together of verb-final and verb-initial languages, in which the relative order of subject and object may vary. In fact, the relative order of subject and object may vary in the same language: many SOV languages allow OSV as an alternate nonbasic order, and many VSO languages allow VOS as an alternate nonbasic order (Steele 1978). Table 6.7 shows that, for many languages, only one argument phrase may have a dominant order. Such languages can be identified because many sentences in discourse have only a subject or only an object, and may reveal a dominant order.

The other reason for Dryer's classification is that there are stronger and/or more numerous correlations between just subject–verb order and other word orders, and just object–verb order and other word orders. These correlations cannot be elaborated on here, but are discussed in detail in Dryer (2013a).

The degree of variation in word orders across languages is very high: many different combinations of word orders are attested in the world's languages. The factors that account for this variation, and the very correlations themselves, are a subject of debate (for some discussion of alternative theories, see Croft 2003:ch. 3). Some individual word orders are quite skewed in their crosslinguistic distribution: SV order outnumbers VS order by 6 to 1 in WALS (Dryer 2013c), and SO order outnumbers OS order by over 27 to 1 (Dryer 2013b). Other word orders are far more even in their distribution: VO and OV orders are almost equal in number in WALS (Dryer 2013d).

As noted in section 5.3, different quantitative analyses consistently demonstrate a high correlation between object–verb order, adposition – noun phrase order, and genitive–noun order (though there is a significant if small minority of VO&GN languages). Moreover, in verb-final languages, oblique argument phrases (abbreviated as X) are also highly likely to precede the verb – 87% of the time in WALS (Dryer and Gensler 2013). This further reinforces the impression that most verb-final languages differ substantially in their word order – SOXV & GN & Postp – from most SVO languages – SVOX & NG & Prep – even though the order of other elements is less strongly correlated with these “core” correlated word orders.

Word order of subject, object, and oblique also tends to differentiate core arguments from obliques, though to a lesser degree. In VO languages, subject < object < oblique is by far the most common order of argument phrases. In OV languages, subject < object and subject < oblique are also by far the most common orders; but in the minority of OV languages in which object and oblique order is specified, their relative order varies both within and across languages (Dryer and Gensler 2013; Matthew Dryer, pers. comm.). The position of obliques in OV languages might be due to competing motivations for order and grouping of elements in the clause. On the one hand, postverbal elements tend to be avoided in verb-final languages, which pushes obliques before the verb. This is a strong tendency, as noted in the preceding paragraph. On the other hand, the object is a more central participant in the event, which tends to attract the object phrase toward the predicate, and pushes the oblique before the object. This tendency competes with S<O<X order, so both object–oblique and oblique–object orders are common and variable in OV languages.

Finally, one of the most dominant patterns in crosslinguistic frequency is that the subject precedes the object, in 83% of the languages in Table 6.6; and in 76% of the languages in Table 6.6, the subject precedes both verb and object. A number of similar explanations have been offered to account for the strong preference for the subject to precede the object and also the verb in basic word order. Mithun and Chafe describe the subject as a conventionalized (they use the term ‘grammaticalized’) starting point for the presentation of the information in the clause: ‘the referent a speaker uses as a point of departure for whatever is expressed by the rest of the clause’ (Mithun and Chafe 1999:572; cf. Tomlin’s theme first principle; Tomlin 1986:ch. 3); they make an explicit connection between the subject as a starting point and its common position in basic word order (Mithun and Chafe 1999:575). Mithun and Chafe further note that agents serve better as starting points than patients, which follows the force-dynamic relation between the two (subjects act on objects; Mithun and Chafe 1999:573; cf. Tomlin’s animated first principle; Tomlin 1986: ch. 5). This accounts for why, even when subjects are not initial, they precede objects in basic word order in 70% of the languages reported in Table 6.6.

6.3 The Intransitive Construction, Monovalent Events, and Alignment Strategies

6.3.1 The Basic Alignment Strategies

In section 6.2.1, we presented the transitive construction, centered around the exemplar event of breaking. The transitive construction serves as the prototype construction for defining subject, object, and oblique argument phrases as comparative concepts. The transitive construction has two core argument phrases, encoding two central participant roles which are also the two salient arguments of the clausal predication. These two participant roles contrast with each other in the force dynamics of the event: one initiates the transmission of force (the agent), the other is the endpoint of the transmission of force (the patient).

In this section, we discuss monovalent events – that is, events with a single central participant role which is also a salient argument of the predication. Monovalent events form the basis for defining an intransitive argument structure construction. In the great majority of languages, the participant roles found in different monovalent events are categorized in a single argument phrase form; and in those languages, the form of this argument phrase is almost always identical to one of the argument phrases expressing the central participant roles of a bivalent event.

This is the classic example of a system of strategies as defined in section 1.4: the strategy consists in similarities and differences in the morphosyntactic forms of two constructions – here, the intransitive and transitive constructions. Specifically, the system for **alignment (str)** is defined in terms of the co-expression of the element of one construction with an element of another construction – here, the central participant of the monovalent event with one of the central participants of the bivalent event. It turns out that either central participant role of a bivalent event may be co-expressed with the one central participant of the monovalent event.

In order to talk about the different strategies for how the one central participant role of a monovalent event is categorized compared to the two central participants of a bivalent event, typologists have devised letter abbreviations to distinguish the monovalent and bivalent event participant roles.

A role (sem) = agent or agent-like central participant role in the prototypical bivalent event

P role (sem) = the patient or patient-like participant role in the prototypical bivalent event (also notated O)

S role (sem) = the one central participant role in a monovalent event

A, S, and P are commonly thought of as grammatical roles. Following Haspelmath (2011b), we define them as comparative concepts. A and P are

defined as comparative concepts in terms of the central participant roles of the translation equivalent of ‘break.’ In terms of transmission of force, A acts on P ($A \rightarrow P$).

The analysis of S in terms of a specific monovalent event exemplar, in the way that ‘break’ is the exemplar for A and P, is more problematic; we will return to this question in section 6.3.3. The single central participant role in intransitive argument structure constructions actually involves a wide range of semantic roles that are found in different types of monovalent event, and this variation can affect their grammatical expression.

Three alignment systems are common in the world’s languages. The WALS database indicates that the most common alignment strategy for flags is **neutral alignment (str)**, illustrated for Khmer in (14): A, S, and P roles are all expressed the same way – namely, without any flagging at all. Neutral alignment is the most common strategy for flags overall, but it is more frequent across languages for common nouns than pronouns (Comrie 2013a,b).

In **accusative alignment (str)**, the S role is categorized together with the A role. The category co-expressing the A and S roles contrasts with the category expressing the P role. The category co-expressing A and S is called **nominative (str)**, and the category expressing P alone is called **accusative (str)**. The nominative and accusative categories are parts of the system of strategies: the accusative alignment strategy can be thought of as a strategy to divide participant roles into two categories, each with its own distinct morphosyntactic form.

The categories in the alignment strategy may themselves employ different coding strategies for predicate–argument relations, such as flagging or indexation (see Chapter 4). The accusative alignment strategy is illustrated in (15) and (16) for flagging and indexation in Huallaga Quechua. The nominative category is coded by a zero flag and a person index, and the accusative category is coded by the overt flag *-ta* and no indexation (Weber 1989:179, 15):

- (15) yaku-Ø timpu-yka-n
 water.NOM boil-IPFV-3
 ‘The water [S] is boiling.’

- (16) Hwan-Ø Tumas-ta maqa-n
 John.NOM Tom.ACC hit-3
 ‘John [A] hits Tom [P].’

The category of nominative argument phrases (A+S) is more frequent in discourse than the category of accusative argument phrases (P; Croft 2003:151). Hence, based on the structural coding universal (section 2.5), if any core argument phrase in accusative alignment uses a zero flag, it will be the nominative argument phrase (exceptions to this coding universal – so-called “marked nominals” – exist, particularly in east Africa; see König 2008:ch. 4).

The accusative alignment strategy is the second most frequent strategy for flagging, after neutral alignment. It is by far the most frequent strategy with indexation: indexation based on nominative–accusative categorization is found in over half the languages in a sample of 380 languages (Siewierska 2013). English uses the accusative alignment strategy for indexation and for flags in pronouns, and the neutral alignment strategy for common nouns.

In **ergative alignment (str)**, the S role is categorized together with the P role. The category co-expressing S and P is called the **absolutive category (str)**. The A role is expressed as a distinct category, called the **ergative category (str)**. Ergative alignment is illustrated with indexation by K'ichee' in (17)–(18) (Mondloch 1978:27, 46), and with flags by Yuwaalaraay in (19)–(20) (Williams 1980:36):

- (17) chewe'k k-ē-bē lē achijāb pa tinamit
 tomorrow IPFV-3PL.ABS-go the man:PL to town
 'Tomorrow, the men [S] go to town.'
- (18) c-at-in-tzukū-j
 PRS-2SG.ABS-1SG.ERG-look.for-TR
 'I [A] look for you [P].'
- (19) ḫuyu-gu ḫama dayn-Ø yi:-y
 snake.ERG that man.ABS bite-NFUT
 'The snake [A] bit the man [P].'
- (20) wa:l ḫama yinar-Ø banaga-ñi
 NEG that woman-ABS run- NFUT
 'The woman [S] didn't run.'

The ergative category is expressed with the overt suffix *-gu* in (19), and the absolutive category is expressed by zero in (20). The category of absolutive argument phrases (S+P) is more frequent in discourse than the category of ergative argument phrases (A; Croft 2003:151). Hence, based on the structural coding universal, if any core argument phrase in ergative alignment uses a zero flag, it will be the absolutive argument phrase (again, exceptions to this universal – so-called “marked absolutives” – exist, though far less commonly than for marked nominatives; see, e.g., Donohue and Brown 1999).

The accusative and ergative alignment strategies solve the communicative problem of identifying who did what to whom described in section 6.1.1. In both the accusative and ergative alignments, there are different forms for A and P, which occur together since they are the two central participants in a bivalent event. Nevertheless, the problem of identifying who did what to whom is in fact not as great as one might think. For most events, the participants in particular

roles are restricted to specific semantic classes – for example, humans as agents, and physical objects as patients, in the agentive change of state events. Thus, the neutral alignment strategy generally does not pose a major problem in communication, and is indeed the most common strategy with flags.

Co-expressing S with either A or with P is also “efficient”: only two grammatical categories (nominative–accusative or ergative–absolutive) are required to express the participant roles of both monovalent events and bivalent events. A system that differentiates S from both A and P – called a **tripartite alignment (str)** – does not address this “efficiency” issue and in fact is extremely rare, though not nonexistent.

A different sort of motivation for nominative–accusative and ergative–absolutive alignment is suggested by Mithun and Chafe (1999). They suggest that the starting point motivation for the very common basic word orders of initial subject, and subject preceding object, described in section 6.2.2 also motivates the nominative co-expression of A and S, particularly zero-coded nominatives (Mithun and Chafe 1999:575). They propose that ergative–absolutive alignment is motivated by the ‘immediate involvement’ in the event by the S and P participants: the S is the only central participant of a monovalent event, and the P participant in the more prototypical bivalent events is centrally involved in the process while the A participant serves as an external cause of the event (Mithun and Chafe 1999, 579–84).

6.3.2 ‘Subject’ and ‘Object’ as Comparative Concepts?

The existence of ergative alignment as well as accusative alignment casts doubt on the status of ‘subject’ and ‘object’ as comparative concepts. Ergative alignment “breaks up” the subject category (A+S). Some linguists have appealed to other constructions that use an accusative alignment strategy – constructions that sometimes exist even in languages that use the ergative alignment strategy in the transitive construction. For example, certain types of complements and coordination constructions (see Chapters 18 and 16, respectively) use an accusative alignment in English and other languages, in terms of the unexpressed participant, notated as zero (\emptyset) in (21)–(22) (the position of the zero in (21) is rather arbitrary, as these English complement constructions do not allow overt expression of the argument):

- (21)
 - a. I tried to \emptyset_A open the door.
 - b. I tried to \emptyset_S run.
- (22)
 - a. I got up late and \emptyset_A ate breakfast.
 - b. I got up late and \emptyset_S showered.

In example (21), one argument of the complement is left unexpressed and interpreted as coreferential with the subject argument of *try*. In (21a), the unexpressed argument is A (the opener of the door), and in (21b) the unexpressed argument is S (the runner). Hence this construction co-expresses A and S.

Likewise, in the coordination construction in (22), one argument of the second clause is left unexpressed and interpreted as coreferential with the subject argument of the first clause. In (22a), the unexpressed argument is A (the eater) and in (22b) the unexpressed argument is S (the person showering).

However, alignment in (21)–(22) simply indicates that participant role alignment (co-expression) strategies are found in a variety of constructions, and they need not be the same from one construction to the next. In fact, even the alignment strategies in the transitive construction may be different between flagging and indexation in a single language, as in Wardaman (Merlan 1994:110; cf. Croft 2001:153):

- (23) ...wurre-wuya-Ø ngawun-da-wa ngayug-ji
 ...child-DU-ABS 1SG.NOM/3NSG.ACC-see-FUT 1SG-ERG
 ‘...I have to see the two children myself.’

In (23), the indexation follows an accusative alignment strategy, while the flagging follows an ergative alignment strategy.

Most typologists consider A, S, and P as comparative concepts, with A and P defined as the agent and patient participant, respectively, in the transitive construction as defined in (10) in section 6.2.1. A, S, and P are all more salient participants by virtue of being central participant roles, expressed in core argument phrases, in contrast to oblique arguments. In the transitive construction – that is, the prototypical event in the basic voice – A is more salient than P, likely because A is typically human. Hence, A and P are the primary and secondary salient arguments, and we could call the argument phrases expressing A and P roles “core1” and “core2,” respectively. In the intransitive construction, the one central participant is the most salient argument in the clause. Hence, it is the primary salient argument (since it is the only core argument), and could be called “core1.”

However, instead of using the rather opaque terms “core1” and “core2,” we will use the terms **subject (*inf*)** and **object (*inf*)** for the arguments expressing the most salient and next most salient core arguments (see section 6.1.1; this usage is also motivated by the starting point analysis in section 6.2.2). In other words, we are using the terms ‘subject’ and ‘object’ to describe the primary and (where it occurs) secondary core arguments in the transitive and intransitive constructions, independent of the alignment strategy used in the language. These definitions of ‘subject’ and ‘object’ are comparative concepts defined by information packaging status. The definitions of ‘subject’ and ‘object’ therefore differ from the definitions of ‘nominative’ and ‘accusative’: ‘nominative’ and ‘accusative’ describe alignment (co-expression) strategies, not information packaging status. This usage of ‘subject’ and ‘object’ may clash with some intuitions, but it reflects a common typological usage, such as how ‘subject’ and ‘object’ are used in discussions of basic clausal word order (section 6.2.2). To refer to the corresponding argument phrases, the terms **subject (argument) phrase (cxn)** and **object (argument) phrase (cxn)** will be used (section 6.1.1).

The definition of ‘subject argument phrase’ and ‘object argument phrase’ given here is more general than the definition of those constructions given in section 6.2.1, which is based on the central participant roles of the two salient arguments of the breaking event which serves as the exemplar of a bivalent event. The definition given here should be thought of as compatible with that definition. Its main purpose is also to bring into consideration the single salient argument of a monovalent event. But choosing an event with one central participant as the exemplar for a monovalent event is not that simple: the empirical facts do not lead us to a single exemplar in the way that they led to ‘break’ as the exemplar for the transitive construction.

6.3.3 Active/Inactive Alignment, and S as a Comparative Concept

There is a semantic motivation for both the accusative and ergative alignment strategies in different subclasses of monovalent events:

(24) *Accusative motivation*

- a. I ate lunch.
- b. I ate. (S = A)
- c. The children played. (S is agent-like)

(25) *Ergative motivation*

- a. I broke the stick.
- b. The stick broke. (S = P)
- c. The dog died. (S is patient-like)

For certain event types, there is an intransitive counterpart in some languages, sometimes expressed through a derived verb form but in English expressed with the same verb form, in which the S participant role is the same as the A participant role, as in (24a–b). In the intransitive construction in (24b), the second participant role is so nonsalient that it is left unexpressed and the event is construed as an event with a single central participant role, namely the eater. The one central participant role in (24b) semantically resembles the agent-like single central participant role in the monovalent event in (24c).

For other event types, there is an intransitive counterpart in some languages, sometimes expressed through a derived verb form (see section 6.3.4) but in English expressed with the same verb form, in which the S participant is the same as the P participant, as in (25a–b). In the intransitive construction in (25b), the event is construed as something happening to the one central participant role; the role of the external agent is nonsalient, or the change of state could even have been spontaneous. The single central participant role in (25b) semantically resembles the patient-like single central participant role in the monovalent event in (25c).

Some languages go further and divide up the encoding of S, so that more agent-like S roles – Ss that have more control or volition – are encoded like

A, and more patient-like S roles – Ss that are more affected by the action – are encoded like P. In other words, some languages employ a system of strategies in which some S roles are co-expressed with the A role, and other S roles are co-expressed with the P role. This alignment is usually called the **active alignment strategy (str)**. The category co-expressing some S roles with the A role in the transitive construction is called the **active** (sometimes called agentive or actor) **category (str)**. The category co-expressing some S roles with the P role in the transitive construction is called the **inactive** (sometimes called stative, patientive, or undergoer) **category (str)**.

The active alignment strategy is illustrated with indexation in (26)–(28) for Lakhota (Pustet 2021:25, Rood and Taylor 1976:7–5, and Pustet 2021:24, respectively):

- (26) na<ma>yah^{7u}
LOC-1.UNDR-2.ACT-hear
'You hear me.'
- (27) ya-^{7u}
2.ACT-come
'You (sg.) are coming.'
- (28) ma-kakiče
1.UNDR-suffer
'I suffer.'

Lakhota indexes both A and P in the transitive construction, as in (26): A is expressed by Actor (ACT) prefixes and P is expressed by Undergoer (UND) prefixes. Some intransitive constructions categorize the S participant with the A participant, as in (27), both using the Actor index *ya-* 'you (sg.)'; this is the active index. Other intransitive constructions categorize the S participant with the P participant, as in (28), both using the Undergoer index *ma-* 'I/me'; this is the inactive index.

Table 6.8 summarizes the grammatical comparative concepts for the categories occurring in the alignment strategies described in section 6.3.

The languages that use the active alignment strategy do not divide the monovalent event types – the event types with an S role – in the same way in every language (Mithun 1991; Croft 1998). Nevertheless, there is a partial ordering of monovalent event classes that is inferred from a multidimensional scaling analysis in one dimension of active/inactive systems in six languages (Guaraní, Lakhota, Central Pomo, Caddo, Mohawk, and Tsova-Tush; Croft 1998:54, data from Gregores and Suárez 1967, Mithun 1991, and Holisky 1987; the multidimensional scaling analysis is adapted from Croft 2012:258). The partial ranking is given below, ranked from most A-like to most P-like.⁶ Note that the two most

⁶ To each of these semantic event classes corresponds a like-named predicate ('controlled activity verb,' 'body position verb,' etc.), which is a constructional comparative concept; see the Glossary.

Table 6.8 Grammatical comparative concepts for groupings of A, S, and P as core argument phrases (alignment strategies)

Semantic role	A-like participant roles	S participant roles (more A-like)	S participant roles (more P-like)	P-like participant roles
Grammatical argument phrase categories	nominative		accusative	
	active		inactive	
	ergative	absolutive		

common alignments, accusative and ergative, represent the two extremes of the ranking, in which the one central participant in all (or almost all) monovalent events is A-like (accusative) or P-like (ergative).⁷

MOST A-LIKE ROLE IN A MONOVALENT EVENT

1. **Controlled activities (sem):** agentive processes, e.g. motion events (see section 7.3.1) such as ‘run,’ ‘dance,’ ‘go out,’ etc.
2. **(Body) position (sem) events (sem):** such as ‘sit,’ ‘stand,’ ‘lie,’ ‘hang’ (these are also called ‘maintain position’ events by Levin 1993, and ‘posture’ events by other linguists). Also verbs such as ‘live’ and ‘stay’ are included in this category, although they are more general position or location events than ‘sit,’ etc. (Holisky 1987 calls this category ‘locative statives,’ and Croft 1998, 2012, includes these events in the category of ‘inactive actions.’)
3. **Properties (sem):** construed as stable (see section 4.1.2), e.g. *red, tall, round*, etc. Also included here are human propensity concepts (also called ‘dispositions’) – that is, properties of actions that are also attributed to inherent traits of individuals: ‘proud,’ ‘wise,’ ‘evil,’ ‘courageous,’ ‘jealous,’ etc.
4. **Bodily actions (sem):** normally uncontrolled, e.g. ‘cough,’ ‘sneeze,’ ‘shiver,’ ‘sweat’; some are more controllable, e.g. ‘laugh,’ ‘spit,’ ‘urinate’
5. **Change of state (sem):** ‘become sick, old, tired,’ etc.
6. (tie) **Transitory states (sem):** stative properties that are temporary and thus have come about through some process, e.g. ‘sick,’ ‘tired,’ ‘old,’ ‘cold’
7. (tie) **Uncontrolled activities (sem):** (apart from bodily actions and change of state events): e.g. ‘die,’ ‘slip,’ ‘grow,’ ‘trip,’ ‘get lost,’ etc. Uncontrolled activities are change of state events, but not all change of state events are uncontrolled.

MOST P-LIKE ROLE IN A MONOVALENT EVENT

The categories above are defined mostly in terms of force dynamics – control over the action – or aspect – state vs. process, and transitory vs. stable (Mithun

⁷ See Haspelmath (2011) and section 7.4 for monovalent experiential predicates, which are excluded from the event classes and alignments discussed in this section.

1991). However, the primary factor appears to be control over the action (cf. Mithun and Chafe 1999:578). The more A-like a monovalent event is, the greater control or volition the participant has over the event. The more P-like a monovalent event is, the less control the participant has over the outcome of the event, and the greater the affectedness of the participant by the event. In fact, all monovalent events involve some degree of affectedness of the one salient participant: something always happens or applies to the one central participant, whether or not the participant has any control over the event. Hence, all monovalent events involve an “affected subject” (Croft 2012:237–38). The main difference among monovalent events is the degree of control of the participant over the event.

Haspelmath (2011b) argues that if we want to have a coherently defined comparative concept for S, then we should select a single event type as the basis for the intransitive construction, and the one salient participant of that event is S – just as he does for the transitive construction (see section 6.2.1) and the ditransitive construction (see section 7.5.1). As we saw in section 6.2.1, Haspelmath proposes that the transitive construction be defined in terms of ‘break’ and its two salient participants, and we adopted his proposal.

Haspelmath proposes that the single monovalent event type to serve as the basis for the intransitive construction should be ‘die.’ This is a consistent choice in that ‘die’ is an uncontrolled activity, and it is at the most P-like end (uncontrolled activities are tied for most P-like with transitory states). The effect of this choice would be to classify languages that vary in the expression of S as having ergative alignment.⁸

One could just as easily propose that the event defining S is the most A-like rather than the most P-like – namely, the controlled activities class. The most likely candidate for the most A-like event would be a common manner-of-motion verb such as ‘walk.’ The effect of this choice would be to classify languages that vary in the expression of S as having accusative alignment. An argument in favor of making this choice for S is that the A-like participant is more salient, being a human agent; and also that controlled monovalent events are construed as more autonomous, since they are under the control of the S participant.

We remain neutral as to whether the “best” exemplar event for the S role, and hence for the intransitive construction, is ‘die’ or ‘walk.’ It is worth noting that the WALS database indicates that active alignment is in fact far less common than accusative, or even ergative, alignment: for flagging, in around 2 percent of languages sampled (Comrie 2013a,b); and for indexation, in around 7 percent of languages sampled (Siewierska 2013). In other words, the problem in defining the intransitive construction, and the S role, arises in a rather small proportion of languages. We will avoid the problem for now, and define the **intransitive**

⁸ In fact, Haspelmath suggests that active/inactive alignment should be treated as a different dimension of alignment than the accusative/ergative alignments, which pertain only to the co-expression of the participant roles across transitive and intransitive constructions.

construction (cxn) simply as the construction – or possibly set of constructions – used to express monovalent events with their single salient argument.

In either case, however, the most useful comparative concepts for defining the active alignment strategy across languages are controlled activities ('walk') vs. uncontrolled activities ('die'). These two participant roles are the most likely to be expressed by different flags and/or indexes in languages with active alignment. The most reliable way for defining the S role in determining accusative vs. ergative alignment is to see whether the single central participant roles for both of the monovalent events 'walk' and 'die' – and, we hope, for all other monovalent events listed above – are co-expressed.

6.3.4 Causativity

In addition to the encoding of the participant of a monovalent event, the form of the predicate in a monovalent event also varies within and across languages. Many monovalent events can be either spontaneous or brought about by an external causer, who would therefore act as a second salient participant – indeed, the most salient participant. Hence, there is frequently a bivalent event that describes the same qualitative type of event as the monovalent one, but with an external cause. Following Haspelmath et al. (2014), we will call the monovalent events **noncausal events (sem)** and the corresponding bivalent events **causal events (sem)**.⁹

The morphological relationship between transitive and intransitive verbs for causal events and the corresponding noncausal events forms a system of strategies. The strategies are defined in terms of the similarities and differences in the form of the verbs encoding the causal and noncausal events.

The first strategy is a neutral strategy, the **labile strategy (str)** (here we follow Haspelmath et al.'s use of the terms, which largely follows common practice; they note that this strategy is also called ambitransitive). In the labile strategy, the same predicate form is used in either the transitive or intransitive argument structure construction expressing the causal event and the noncausal event, respectively. English uses the labile strategy with many verbs, often called lexical causatives in English lexical semantics:

- (29) a. I broke the vase.
 b. The vase broke.

The second strategy is the **causative strategy (str)**: there is overt coding of the causal event predicate in the transitive construction, in contrast to the

⁹ Causal events include agentive change of state events, but events other than change of state events may also have external causes. Noncausal events are not always (monovalent) change of state events. The noncausal event may be a state; in fact, in English, many non-causal event forms such as *dry* may be either a change of state verb or an adjective (i.e. stative property concept word).

noncausal predicate used in the intransitive construction, as in (30)–(31) from Turkish (Comrie 1989:175–76):

- (30) Hasan öl-dü
 Hasan die-PST
 'Hasan died.'
- (31) Ali Hasan-i öl-dür-dü
 Ali Hasan-ACC die-CAUS-PST
 'Ali killed Hasan.'

The third strategy is the **anticausative strategy (str)**: there is overt coding of the noncausal event in the intransitive construction, in contrast to the predicate used in the transitive construction, as in (32)–(33) from Yagua (Payne and Payne 1989:278):

- (32) samutamaa Hiláriorà roorijyú
 sa-muta-maa Hilário-rà rooriy-jú
 3SG-open-PRF Hilário-INAN house-opening
 'Hilário has opened the door.'
- (33) ramutamyaa roorijyú
 rá-muta-y-maa rooriy-jú
 INAN-open-ANTC-PRF house-opening
 'The door has/was opened.'

The fourth strategy identified by Haspelmath et al. is the **equipollent strategy (str)**. In the equipollent strategy, there is no coding asymmetry between the expression of the causal event and the noncausal event, as with the labile strategy; but the predicate forms are different. An example is German *aufwachen* 'wake up (intr.)' vs. *aufwecken* 'wake up (tr.)', which are morphologically related, but differ by a base modification (the vowel change; Haspelmath et al. 2014:591). Haspelmath et al. include suppletion as instances of the equipollent strategy. In suppletion, two unrelated roots are used for the corresponding causal and noncausal events, e.g. English *kill* vs. *die*.

Different causal/noncausal predicate strategies may be used for different events in the same language. The distribution of strategies is not random. Croft (1990) argues that events that are more likely to happen spontaneously are more likely to use the causative strategy; events that are more likely to happen through an external cause are more likely to use the anticausative strategy. That is, the more likely event is expressed by a zero-coded predicate. Haspelmath et al. (2014) use frequency in discourse, rather than frequency of occurrence in the real world; the latter is, of course, difficult to measure. They argue that there is a correlation between relative text frequency and the strategy used for causal–noncausal event pairs, such that certain predictions were confirmed in their corpus.

data from seven languages (English, Japanese, Maltese, Romanian, Russian, Swahili, and Turkish). One of the correlations they tested and confirmed is given in (34) (their Prediction 2; Haspelmath et al. 2014:601–2):

- (34) In verb meanings which are often expressed as causative pairs (verb meanings with high causative prominence), the causal member will be rarer than the noncausal member in each language, while in verb meanings which are often expressed as anticausative pairs, the causal member will be more frequent.

[That is: in verb meanings more frequently expressed using the causative strategy across languages, the token frequency of the verb expressing the causal member will be lower than that of the verb expressing the noncausal member; while in verb meanings expressed more frequently using the anticausative strategy across languages, the token frequency of the verb expressing the causal member will be higher.]

The anticausative strategy for noncausal events is usually distinguished semantically from the so-called passive voice construction. The passive voice construction is a type of nonbasic voice construction in which the agent is not the most salient participant (see section 8.3); but the agent is still present as a participant in the event, as illustrated by the English Passive Construction in (35a). Anticausatives, however, can be used for **spontaneous events (sem)**, illustrated with the English Labile Intransitive Construction in (35b).

- (35) a. The door was opened. [someone opened it]
 b. The door opened. [it could have opened by itself]

That is, a passive construction is used for an event with only one salient participant, the patient, but semantically has another central but nonsalient participant, namely the external causer; this nonsalient participant is often left unexpressed in the passive construction. The passive construction is usually overtly coded: the passive verb form is overtly derived from the corresponding transitive verb. This makes the overtly coded passive voice strategies resemble the overtly coded anticausative strategy for noncausal verbs.

However, in many languages, the anticausative and passive constructions are the same, or if there is a constructional distinction, the distinction does not correspond to the semantic distinction between (possibly) spontaneous events and (necessarily) externally caused events. Examples of the identity of the forms expressing spontaneous (“anticausative”) and externally caused (“passive”) meanings are given in Table 6.9 (Croft 2012:253).

In other words, from a functional perspective, passives can be analyzed as expressing another type of monovalent event, but one that happens to have another participant lurking in the background which is normally salient, but is not salient in this construction (Croft 1990c; Haspelmath 1993a).

Table 6.9 *Overlap between anticausative and passive*

Construction (strategy)	Possibly spontaneous	Necessarily externally caused	Source
Japanese transitive/ intransitive verb pairs (equipollent)	oru 'break (tr.)' or eru 'break (intr.)'	kudaku 'smash' kudakeru 'be smashed'	Jacobsen 1982:197
Bambara zero-coded intransitives (labile)	ŋɔ̃mi sisira [fritter burn] 'the fritter burned'	ó má fɔ̃ [that not say] 'that wasn't said'	Dumestre 2003:180–81
Amharic derived intransitives (anticausative)	səbbərə 'break (tr.)' tə-səbbərə 'break (intr.)'	gənəbba 'build' tə-gənəbba 'be built'	Amberber 2000:314–15

Terms Defined in this Chapter

6.1 Semantics and Information Packaging in the Clause

6.1.1 Predication and Arguments, Events and Participants

participant (*sem*), participant role (*sem*), semantic role (*sem*), salience (*a.k.a.* topicality) of a referent (*inf*), subject phrase (*cxn*), object phrase (*cxn*), oblique phrase (*cxn*), subject argument (*inf*), object argument (*inf*), core argument (*inf*), core argument phrase (*cxn*), central participant (*sem*), peripheral participant (*sem*), voice constructions (*cxn*), basic voice construction (*cxn*), nonbasic voice construction (*cxn*), argument structure construction (*cxn*)

6.1.2 How Many Participants? How Are They Expressed?

valency class / valency (*sem*), monovalent event (*sem*), bivalent event (*sem*), trivalent event (*sem*), intransitive constructions (*cxn*), transitive constructions (*cxn*), ditransitive constructions (*cxn*), causal structure (*a.k.a.* force dynamics, transmission of force) (*sem*), causal chain (*a.k.a.* transmission of force) (*sem*), initiator (*sem*), endpoint (*sem*), antecedent role (*sem*), subsequent role (*sem*), concomitant role (*sem*), instrument (*sem*), comitative (*sem*), cause (*sem*), recipient (*sem*), beneficiary (*sem*), maleficiary (*sem*), agent (*sem*), patient (*sem*), force (*sem*), agentive change of state (*a.k.a.* COS) event (*sem*) / verb (*cxn*)

6.2 The Transitive Construction and the Prototypical Bivalent Event

6.2.1. The Transitive Construction as a Prototype Construction

change of state event (*sem*)/verb (*cxn*), agentive change of state event (*sem*), aspect (*a.k.a.* aspectual structure) (*sem*), tense (*sem*), dynamic (*sem*) / stative (*sem*), telic (*sem*), atelic (*sem*), punctual (*sem*), durative (*sem*), directed change (*sem*), undirected change (*sem*), transitive construction (*cxn*)

6.2.2 Basic Argument Structure Encoding Strategies, including Basic Word Order

basic word order (*str*)

6.3 The Intransitive Construction, Monovalent Events and Alignment Strategies

6.3.1 The Basic Alignment Strategies

alignment strategy, A role (*sem*), P role (*sem*), S role (*sem*), neutral alignment (*str*), accusative alignment (*str*), nominative category (*str*), accusative category (*str*), ergative alignment (*str*), absolutive category (*str*), ergative category (*str*), tripartite alignment (*str*)

6.3.2 'Subject' and 'Object' as Comparative Concepts?

subject (*inf*), object (*inf*), subject (argument) phrase (*cxn*), object (argument) phrase (*cxn*)

6.3.3 Active/Inactive Alignment, and S as a Comparative Concept

active alignment (*str*), active category (*str*), inactive category (*str*), controlled activity (*sem*) / predicate (*cxn*), body position event (*sem*) / predicate (*cxn*), properties (*sem*), bodily action (*sem*) / predicate (*cxn*), change of state event (*sem*) / verb (*cxn*), transitory state (*sem*) / predicate (*cxn*), uncontrolled activities (*sem*) / predicate (*cxn*), intransitive construction (*cxn*)

6.3.4 Causativity

noncausal event (*sem*), causal event (*sem*), labile strategy (*str*), causative strategy (*str*), anticausative strategy (*str*), equipollent strategy (*str*), spontaneous event (*sem*) / verb (*cxn*)

7 Event Structure and Nonprototypical Argument Coding

7.1 Introduction

In Chapter 6, an overview of event structure and the coding of arguments was presented, and the basic transitive and intransitive constructions were introduced, along with the relationship between transitive and intransitive constructions, in terms of the common alignment strategies used. In that chapter, the focus was on defining the prototypical transitive and intransitive constructions, and the basic encoding and alignment strategies used to express those constructions across languages. The transitive construction and, to a lesser extent, the intransitive construction serve as the prototypical argument structure constructions. That is, they define the subject, object, and oblique argument phrases in a language.

In this chapter, we turn to event types that differ semantically from the prototypical bivalent and monovalent event types described in Chapter 6. These events are semantically nonprototypical in comparison to the events that are expressed in the prototypical transitive and intransitive constructions. Events differ semantically from the prototype in different ways, leading to a wide range of strategies, depending in part on the type of event being expressed.

We first begin with events that are, in some ways, between monovalent and bivalent events – that is, they may be construed as one or the other. These include reflexive, reciprocal, and “middle” events. We then turn to a variety of event types that have two or even three participants that are relatively central, and lead to variation as to which are coded like the core arguments of the transitive event. Then we turn to a class of event types, experiential events, that have two central participants but whose semantics differs dramatically from the prototypical bivalent event. Finally, we turn to trivalent events, define the prototypical ditransitive construction, and describe its alignment strategies.

7.2 Reflexives/Reciprocals/Middles: Between Monovalent and Bivalent Events

A common class of event types falls between monovalent and bivalent events. Event types described as reflexives, reciprocals, and related

constructions (Lichtenberk 1985) all involve one participant in two roles, or two participants in one role:

<i>Reflexive:</i>	<i>Direct</i>	I saw myself .
	<i>Indirect</i>	Sally baked a cake for herself .
<i>Reciprocal:</i>		Mary and Sue praised each other .
<i>Chaining:</i>		The guests followed one another into the room.
<i>Collective:</i>		Mary and Sue left together .

In **reflexive events (sem)**, there is one participant in two roles. In the direct subtype, the two roles are A and P. In the indirect type, the first role is A, but the second role is not P; usually the second role is a beneficiary role (see section 6.1.2) or a recipient role (see sections 6.1.2, 7.5). **Reciprocal events (sem)** and **chaining events (sem)** are even more complex: pairs of participants are in some type of symmetric relationship to each other. In the prototypical reciprocal event, the first participant acts on the second participant, and the second participant acts on the first participant in the same way: for example, Mary praised Sue, and Sue praised Mary. In chaining events, a participant acts upon another participant, and the other participant acts in the same way on yet another participant: for example, the first guest followed the second guest, who followed the third guest, and so on. These examples do not exhaust the variety of symmetrical or partially symmetrical relations among participants; Dalrymple et al. (1998) found a great variety of partly symmetrical relations among participants in a corpus of English Reciprocal constructions. Finally, the **collective event (sem)** represents the event of multiple participants playing a single role in a single event: for example, Mary and Sue were involved in a single leaving event, as opposed to Mary and Sue leaving separately.

None of these event types is an instance of a prototypical bivalent event. All of these situation types involve a participant encoded as subject that is affected in the event – a characteristic of monovalent events (section 6.3.3). The one seeming exception to this generalization is the collective situation type. However, typologically, collectives are expressed in similar ways to reflexives, reciprocals, and chaining constructions – that is, collectives recruit the strategy used for reflexives, reciprocals, and/or chaining constructions. I will argue in section 9.2 that the collective relationship involves mutual interaction between the two participants, so that they influence each other as well.

It should, therefore, not be surprising to observe considerable diversity in the strategies for reflexive and reciprocal constructions. The strategies fall into two broad categories. In one category are strategies which construe the affected subject participant as having a single role in the event. In the other category are strategies which construe the affected subject participant as having dual roles in the event: as initiator and as endpoint (affected). We begin by describing strategies for reflexive constructions.

The **single role strategy (str)** expresses the affected subject participant as a single argument. For direct reflexives, this means simply recruiting the

intransitive construction to express the reflexive event, as in (1); and for indirect reflexives, simply recruiting an intransitive or transitive construction without the oblique phrase, as in (2):

- (1) *Direct reflexive event*
 - a. Sam shaved.
 - b. Sam dressed.

- (2) *Indirect reflexive event*
 - a. Mary prayed.
 - b. Mary got a laptop.
 - c. Mary begged for mercy.

The single role strategy is most likely to be found with inherently reflexive events – that is, events that are normally done to oneself. In (1a–b), Sam is acting on his own body. In (2a–c), Mary is acting for her own benefit.

The **dual role strategy (str)** expresses the affected subject participant in two distinct argument phrases. For direct reflexes, this means simply recruiting the transitive construction, and for indirect reflexives, the relevant three-argument construction. The dual role strategy involves using the normal object pronoun forms for reflexive events as well as nonreflexive events. For example, Old English lacks a special Reflexive Pronoun form, and uses the same form for noncoreferential objects as well as coreferential objects (Comrie 2003a:203; the indexes *i* and *j* indicate coreference/noncoreference with the Subject):

- (3) he_i sloh hine_{ij}
 'He_i hit himself/him_j'

A third strategy is to recruit a more specialized transitive construction, for example using a specific body part term such as 'head' in the object form, as in Abkhaz (Hewitt 1979:78):

- (4) a-sark'a-q'ə s-xə Ø-z-be-yt'
 DET-mirror-LOC 1.POSS-head 3.ABS-1.ERG-SEE-ASP
 'I saw myself in the mirror.'

Such forms often originate with an emphatic function (Kemmer 1993:47). We will call this the **specialized dual role strategy (str)**.

The specialized dual role strategy may become progressively more grammaticalized, and, after a certain point, it is better analyzed as a distinct encoding strategy for reflexive events. The first stage is typically semantic specialization. In Abkhaz, 'head' is idiomatized for reflexive meaning, although the syntax is typical for the Abkhaz Transitive construction. Later stages include some degree of fusion of the elements of the object phrase, as in English *I saw myself*. These have sometimes been analyzed as representing a particularly "tight" form of anaphoric pronoun: the reflexive pronoun may refer only to the entity referred to by the subject of the same clause.

Ultimately, there may be fusion of the independent reflexive element with the predicate, as in another reflexive construction in Abkhaz (Hewitt 1979:78):

- (5) 1-çə-l-k°abe-yt'
 3SG.F-REFL-3SG.F.ERG-wash-ASP
 'She washed (herself).'

The effect of fusion of the reflexive element with the predicate is that we are back to the intransitive argument structure construction, albeit with an overtly coded verb form. That is, although a specialized reflexive construction typically begins with a dual role strategy, it grammaticalizes to an (***overtly coded***) ***single role strategy (str)***. To put it differently: the reflexive event is first construed as having a participant playing two distinct roles in the event, but the participant comes to be construed as having just a single role in the event. In between, however, may be constructions with strategies that differ from both the transitive construction and the intransitive construction (in the direct reflexive case).

The reciprocal event is semantically more complex than the reflexive event, and there is a correspondingly greater variety of strategies found in the world's languages. The reciprocal event involves pairs of participants in two roles, but also two or more events (albeit of the same type): if Wendy and Sarah help each other, Wendy helps Sarah, and Sarah helps Wendy. Not only is there ambivalence about how the participants' roles are construed, there is also ambivalence about how the event(s) is/are conceptualized. The following classification of reciprocal construction strategies is based on Maslova (2008; for a survey of different classifications of reciprocal construction strategies, see König and Gast 2008).

One strategy is **biclausal (str)**: the two directions of the symmetric event are expressed as separate clauses with the two participants reversed in their roles. An example of the biclausal strategy is found in Colloquial Cantonese (Matthews and Yip 1994:87; cited in König and Kokutani 2006:299, n. 8, and Maslova 2008:230):

- (6) léih hóyíh bōng ngóh ngóh hóyíh bōng léih
 you can help me I can help you
 'We (you and I) can help each other.'

The remaining strategies are monoclausal. One strategy is the single role strategy, as with the reflexive event. Examples (7a–b) illustrate the single role strategy for direct reciprocal events, and (7c) illustrates the single role strategy for indirect reciprocal events:

- (7) a. Mary and Sam met.
 b. Mary and Sam kissed.
 c. Mary and Sam exchanged gifts.

Also as with reflexives, the single role strategy is generally restricted to inherently reciprocal events such as meeting someone (if Mary meets Sam, then Sam

meets Mary), or at least typically reciprocal events such as kissing. In the single role construal, the pair of participants acting reciprocally are construed as a single collective participant and expressed in a single argument phrase, conjoined as in (7), or plural as in *The lovers kissed*.

Another strategy is the dual role strategy, also like reflexives. The basic transitive strategy uses an ordinary personal pronoun. In the case of Sa in example (8), both the reflexive event and the reciprocal event recruit the transitive construction. The interpretation of (8) as either reciprocal, reflexive, or as distinct referents is dependent on context (Evans, Gaby, and Nordlinger 2007:548, n. 10):

- (8) ir-ben-ir
 3DU-shoot-3DU *
 'They shoot each other/they shoot themselves/they shoot them.'

Again like the reflexive construction, there is also a specialized dual role strategy, where there is a fixed expression for reciprocity as an object-like phrase. The expression may be quantificational in origin, as in (9) from Russian, and also its English translation (König and Kokutani 2006:280), reflecting the two-events-in-one character of reciprocal events:

- (9) oni často vidjat drug drug-a
 they often see one another-GEN
 'They often see each other.'

Or it may be pronominal in origin, as in (10) from Somali (Saeed 1999:78; cf. König and Kokutani 2006:279):

- (10) wày (waa+ay) is arkeen
 DECL-they REFL saw
 'They saw each other/they saw themselves.'

And, yet again like reflexive events, the specialized dual role strategy grammaticalizes so that the independent element is fused to the predicate, as in (11) from Swahili (König and Kokutani 2006:276, from Ashton 1947):

- (11) Ali na Fatuma wa-na-pend-an-a
 Ali and Fatuma 3PL-PRS-love-RECP-(final vowel)
 'Ali and Fatuma love each other.'

It is likely that the expression of reciprocal events follows the same diachronic path as reflexive events (here using the direct reciprocal as the example): it starts in a transitive argument structure construction; the construction becomes specialized; and then the structure of the event may be construed as a single collective participant engaged in a monovalent event, expressed in an intransitive argument structure construction, albeit often with overt coding of the verb in the intransitive construction to indicate the reciprocal event type.

Even so, there is a rare **monoclausal transitive strategy (str)** for reciprocal events with the distinct participants expressed as subject and object, as in

(12) from Tonga (Bantu; Collins 1962:75; cf. Maslova 2008:230; gloss from Maslova):

- (12) Joni ba-la-yand-ana amukaintu wakwe
 John 3PL-PRS-love-RECP wife his
 'John and his wife love each other.' [lit.: 'John mutually-loves his wife.']}

It is possible that this is some sort of reduced version of an originally biclausal construction, or perhaps it has a transitive origin.

Many reflexive and reciprocal constructions are similar in their historical origin and eventual grammaticalization. They are also similar semantically, involving participants that are both instigating the event and being affected by it. And they are often identical in form – that is, the same special form is used for reflexive, reciprocal, and chaining functions (for example, (8) above; see, e.g., Lichtenberk 1985).

Lichtenberk (1985) analyzes the semantic similarity among the event types discussed in this section so far. The reciprocal event type has all of the properties that Lichtenberk identifies. Each participant plays multiple roles, and those roles are identical. For example, in *Mary and Sue praised each other*, both Mary and Sue play both roles of "praiser" and "praisee." In reflexive events such as *I saw myself*, the participant plays multiple roles, but there may be only one participant. In chaining events such as *The guests followed one another into the room*, all participants play multiple roles, and the same roles, except the first and last in the chain. The subevents of the reciprocal event may be non-sequential: Mary and Sue can praise each other at the same time.

The identity of roles and the simultaneity, or at least quick succession, of the identical subevents allows both the multiple participants and the multiple subevents to be "lumped together" into a single monovalent event with a single plural participant (apart from singular reflexive events). This "lumping together" of participants is described as 'low degree of individuation of participants' by Lichtenberk, and the "lumping together" of subevents is described as 'low degree of elaboration of events' by Kemmer (1993). The monovalent conceptualization of the reflexive, reciprocal, and chaining events is close to that of collective events, where there are multiple identical subevents "lumped together" and participants playing the same role, albeit playing only one role, not multiple roles. For this reason, the collective event construction may recruit a reflexive/reciprocal construction as well.

A specialized reflexive construction is often extended to other intransitive event types that are not considered to be reflexive or reciprocal events (Croft, Shydkrot, and Kemmer 1987; Kemmer 1993). A reflexive or reciprocal event has two distinct participant roles that are filled by the same individual (reflexive) or set of individuals (reciprocal, chaining). Intransitive event types construe the single central participant as playing a single role in the event; this is why they are called monovalent events. But, semantically, there is no sharp line between "inherently reflexive" event types and "other monovalent" event types, since all monovalent events involve a change affecting the participant in the S role.

The grammaticalization process for reflexive and reciprocal event constructions going from transitive recruitment to a more intransitive-like construction leads to the recruitment of reflexive or reciprocal constructions for event types that are usually analyzed as simple monovalent events. The extension of the reflexive or reciprocal construction follows the scale in (13) (Kemmer 1993:224, based on documented diachronic changes; examples are from Ancient Greek – Kemmer 1993:54–57, 143; her data is from Smyth 1920 and Wright 1912).

- (13) Bodily Motion < Body Care, Change in Body Position < Motion
< other monovalent events

Ancient Greek

- **bodily motion event (sem) / verb (cxn)**: *orége-sthai* ‘stretch out [onself]’ (called ‘nontranslational motion’ by Kemmer)
- **body care (grooming) event (sem) / verb (cxn)**: *keíre-sthai* ‘cut off one’s hair’
- **change in (body) position event (sem) / verb (cxn)**: *klíne-sthai* ‘lie down, lean, recline’ (also called ‘assume position’ events in Levin 1993)
- **motion event (sem) / verb (cxn)**: *péte-sthai* ‘fly’ (called ‘translational motion’ by Kemmer; see section 7.3.1 for further analysis of motion events)
- other monovalent events, in particular **spontaneous events (sem) / verbs (cxn)** (which are usually change of state events; see also section 6.3.4): *ólly-sthai* ‘perish, die,’ *téke-sthai* ‘thaw, melt’

When a specialized reflexive/reciprocal strategy is recruited for “purely” monovalent event classes, the strategy is typically renamed the **middle voice (str)**. It appears that the middle voice usually originates in a reflexive construction; but in some languages, the middle voice form may originate with the reciprocal (Lichtenberk 1985).

Kemmer also notes that the middle voice is extended to indirect reflexives (e.g. Ancient Greek *lísse-sthai* ‘pray,’ *ktâ-sthai* ‘acquire for oneself’; Kemmer 1993:78), verbs of cognition and emotion (see section 7.4), not to mention reciprocal and chaining events.

The middle voice form is even extended to events with an external cause, and even with the external cause overtly expressed as an oblique argument phrase. Example (14) is an example of the middle voice strategy used for a passive voice construction with an overtly expressed oblique agent argument phrase (this example is judged unacceptable by many Spanish speakers but was overheard from a Peninsular Spanish speaker in 2000):

- (14) Se ama por la gente
REFL love:3SG.PRS by the people
‘[King Juan Carlos] is loved by the people.’

In some languages, there is a split between two coexisting constructions that both originated as reflexive event constructions. The split occurs between two

semantic types of verbs. Verbs that describe events typically performed on or by oneself, or on each other (shaving, lying down, etc.), but could be performed on someone else (e.g. shaving someone else, laying someone else down, etc.) are called **introverted verbs** (*cxn*) by Haiman (1983a:803). Verbs that describe events not normally performed on oneself or on each other are called **extroverted verbs** (*cxn*) (Haiman 1983a:803). Introverted verbs describe events including bodily motion, body care, change in body posture, and translational motion. In languages with split constructions, the introverted verbs use the more grammaticalized construction and the extroverted verbs use the less grammaticalized construction, both recruited from the transitive construction type. This split is illustrated with the reflexive examples in (15)–(16) from Russian (Haiman 1983a:804), and the reciprocal examples in (17)–(18) from Hungarian (Haiman 1983a:804):

- (15) Ja každyj den' moju.s'
I every day wash-REFL
'I wash every day.'
- (16) Viktor nenavidit sebja
Victor hates **himself**
'Victor hates himself.'
- (17) Vesze-ked-nek
quarrel-RECP-3SG.PRES
'They quarreled.'
- (18) Szeretik egymás-t
love:3SG.PRES **each_other**-ACC
'They love each other.'

That is, the historically older reflexive and reciprocal forms, now attached to the verb and generalized to some monovalent event types, has been replaced by a more transitive strategy for reflexive and reciprocal meaning with extroverted verbs. The extroverted verbs make a sharper distinction between the two roles performed by the individual(s), and unsurprisingly favor a transitive strategy. The monovalent verbs favor the more intransitive strategy when both strategies occur in a single language.

7.3 Lower Transitivity: Less Prototypical Bivalent Events

In this section, we will survey the strategies used for the argument structure constructions associated with less prototypical bivalent event types. In all cases, there are two or three central participants, but they are not all as central, or perhaps not all as salient – as arguments – as the two central participants / salient arguments of the exemplar breaking event for the transitive construction.

We will begin with the least “transitive” event type, motion events. Motion events are not often considered to be transitive at all, but we will focus on motion events with both a (moving) figure and a ground – that is, an object that serves as a reference point for the path of motion of the figure. The remaining sections will examine other less prototypical bivalent events which recruit either the transitive construction or a less transitive strategy.

7.3.1 Motion Events and the Talmy Typology

Motion events (*sem*) are events in which an entity, animate or inanimate, moves along a spatial path. Many – though not all – motion events also have an explicitly expressed second participant, called the **ground (*sem*)**, which functions as a reference point for describing the path of the first participant, the **figure (*sem*)**.

English has two different types of **motion verbs (*cxn*)** which express both the figure and ground participants, and they use two different argument structure constructions:

- (19) a. She ran **into the cave**.
 b. She entered **the cave**.

In (19a), the spatial figure is expressed as the Subject and the ground is expressed as an Oblique Phrase with a spatial flag. In (19b), the spatial figure is also expressed as the Subject but the ground is expressed as the Direct Object, without a spatial flag.

The English predicate in (19b) is an example of a **path of motion verb (*cxn*)**, or **path verb (*cxn*)** for short, expressing a **path of motion event (*sem*)**. The path verb in (19b) recruits the transitive construction to express figure and ground: the figure is the subject and the ground is the object.

In contrast, the English predicate in (19a) is an example of a **manner of motion verb (*cxn*)** expressing a **manner of motion event (*sem*)**. The manner of motion verb in (19a) uses a different argument structure construction, in which the figure is expressed as subject, as in the transitive construction, but the ground is expressed in an oblique phrase, with a spatial flag, the preposition *into*. This latter strategy will be called a **subject–oblique strategy (*str*)** (a similar strategy is called an ‘extended intransitive’ in Dixon 2010a:99).

Talmy (1974, 1985) calls the verbs occurring in the construction in (19a) ‘manner incorporating’ motion verbs, and those occurring in the construction in (19b) ‘path incorporating’ motion verbs. In the latter, the path is the manifestation of result in the domain of motion events – that is, path of motion events are presumed to be telic.

More recently, Talmy has revised his classification (Talmy 1991/2000); this version of Talmy’s classification is widely used. Description as path incorporating vs. manner incorporating verbs has been replaced by an analysis of two different strategies for the motion event constructions, based on how the telic

semantic component is expressed. Part of the change in Talmy's analysis is a generalization from path – or, more precisely, a path reaching a destination – to 'framing,' which refers to the expression of a path reaching a spatial destination, or a process reaching a result state – that is, telic events. Path incorporating verbs have been replaced by the **verb-framing strategy (str)**. The verb-framing strategy describes the construction in (19b) where the path is expressed by the verb. Manner incorporating verbs have been replaced by the **satellite-framing strategy (str)**. The satellite-framing strategy describes the construction in (19a) where the path is expressed by a nonverbal element, the **satellite (str)**. In (19a), the path is expressed by an Oblique Phrase with the Preposition *into*.

An enormous amount has been written about the Talmy typology. This literature is primarily focused on the lexicalization of motion events – that is, in which morphosyntactic elements the manner, path, or other semantic components of the motion event are expressed: the main predicate or elsewhere. The lexicalization of motion events in complex predicates is described further in section 14.5. Our focus in this section is on two issues. First, what is the expression of event participants as subject, object, or oblique with manner of motion verbs and path verbs? Second, could one argue that a type of motion event constitutes a semantic prototype for the subject–oblique construction, analogous to the breaking event for the transitive construction?

In Talmy's verb-framing/satellite-framing classification, he excludes oblique phrases with an oblique referent – the spatial ground – from the category of satellites. However, Beavers, Levin, and Tamm (2010) and Croft et al. (2010) both argue that oblique phrases with a ground should be included as a type of satellite, since the flag of the ground element expresses path.

How are figure and ground expressed in the two lexicalization strategies for motion events described above? The English example in (19a) uses a subject–oblique strategy for manner of motion verbs, with the path expressed in the flag of the oblique phrase denoting the ground. However, path of motion verbs, where the path is expressed in the predicate, recruit the transitive construction, and so the ground is expressed in an object argument phrase. This pattern suggests a correlation between motion lexicalization and argument structure construction: manner of motion uses the subject–oblique strategy, and path of motion recruits the transitive construction. One might therefore suggest that the exemplar event type for the subject–oblique construction is manner of motion plus path.

Expression of the ground with path verbs is not so consistent. Although path verbs in English recruit the transitive construction, Spanish uses the subject–oblique strategy even though the path is expressed in the verb (Butt and Benjamin 2004:487):

- (20) Se acercó al buzón
 REFL approach:3SG.PST to:the letter_box
 'S/he approached the letter box.'

However, manner of motion is not entirely unproblematic with respect to the argument structure construction strategy it uses. Manner of motion verbs also occur in constructions where there is no expressed directed path of motion at all, such as *He runs in the park every Sunday*, where *in the park* simply indicates the spatial region where the running is taking place. The prototypical motion event for the subject–oblique construction would have to include path as well as manner. But Talmy (1974) argues that, in verb-framing (path incorporating) languages such as Spanish, manner of motion verbs do not occur with oblique phrases expressing certain types of path with respect to a ground object. If one wants to express manner of motion with path, the manner of motion verb must be expressed as a subordinate verb form (Talmy 1985:111):

- (21) Entró corriendo a la cueva.
 enter.3SG.PST **running** to the cave
 ‘He ran into the cave.’

In other words, languages vary as to what argument structure constructions are possible with manner of motion verbs.

In fact, it is only certain types of paths of motion that are disallowed with manner of motion verbs in Spanish. Paths of motion that do not involve “crossing a boundary” to arrive at a destination may be expressed with manner of motion verbs in Spanish (Aske 1989:3; for a more general discussion of manner + path combinations in Spanish and other similar languages, see Beavers et al. 2010):

- (22) El libro deslizó hasta el suelo
 the book **slide**:3SG.PST **towards** the floor
 ‘The book slid down to the floor.’

7.3.2 Contact and Material Verbs: Manner vs. Result Verbs

The event type denoted by the verb class in (23) is also commonly invoked as a prototypical bivalent event.

- (23) *Contact by Impact*: The boy hit the fence (with a stick).

However, **contact by impact events (sem)** differ from change of state events in a number of ways (Fillmore 1970; Levin 1993:6–11; 2015, and references cited therein). Events such as *hit* appear to involve an instrument, e.g. *with a stick* in (23). The “patient”-like participant, which Levin calls the ‘surface’ (Levin 2015), is the recipient of transmission of force and may even undergo some change. But there is no necessarily entailed change of state on the part of the surface, nor is there a well-defined result state.

These semantic differences have an effect on the encoding of participants of contact events within and across languages. In some languages such as Ulwa,

the surface participant role is expressed as an oblique phrase rather than as a core object-like argument phrase (Levin 2015:1648, from Andrew Koontz-Garboden field notes; TA is not defined):

- (24) Andrew raudi Ulwa uuka kau bau-t-i tung ka
 A. SBJ Ulwa house at hit-TA-PROG walk EVID
 ‘Andrew is walking around hitting the Ulwa house.’

In other words, **contact by impact verbs (cxn)** may recruit the transitive construction, as in English, or use the subject–oblique strategy, as in Ulwa.

In other languages, including Chechen-Ingush, the instrument-like participant in contact by impact events is expressed as the object (a core argument phrase), while the surface is expressed as an oblique (Nichols 1984:188; like Ulwa, Chechen-Ingush expresses the surface as an oblique even if the instrument-like participant is unexpressed):

- (25) da:s wofa: γam j-iett
 father.ERG son.DAT stick(ABS) beats
 ‘(The) father beats (his) son with a stick.’

English allows a similar argument structure construction for some contact by impact verbs:

- (26) She hit the stick **against** the fence.

However, English does not often express the surface as an oblique if the instrument-like participant is not expressed, though there are some examples such as *I kicked against the table many times* (Levin 2015:1654).

In other words, contact by impact events are not really prototypical bivalent events in the way that change of state events are. (Another way in which such events may be less prototypical predicates is that they are commonly expressed by complex predicates; see Levin 2015:1650–54.) Contact by impact events, like change of state events (the transitive prototype), have a third participant, often called the “instrument.” But the instrument in agentive change of state events is so much lower in salience than the A and P participants that it is never (to my knowledge) expressed as an object argument phrase in simple predicates (see section 13.3.1 for the expression of instruments in complex predicate constructions). In contact events, either the “instrument” or the surface may be expressed in an object phrase.

The semantic role of the so-called “instrument” is not the same as the instrument participant roles in change of state events. Although there is transmission of force in the contact by impact event – the impact – there is also a spatial figure–ground relation between the “instrument” and the surface – the spatial relation of contact – that is brought about by the agent’s action. We can represent the spatial relation with a simple line (not an arrow) in the causal chain of a contact by impact event: agent → “instrument” – surface.

Either the figure (“instrument”) or the ground (surface) of the spatial relation may be expressed as the object, sometimes in different constructions in a single language. Another way of saying this is that, for contact by impact events where all three participants are expressed, a language may recruit the transitive construction with an instrument, as in (23), or recruit a subject–object–oblique construction that may have been recruited from caused motion events (*I took the wood to the back yard*).

Also, in a number of languages, many contact by impact verbs allow a construction in which the surface is realized as an oblique phrase, but the event does not necessarily entail that contact is achieved. For example, compare the transitive construction used in the Chamorro example in (27) to the subject–oblique construction used in (28) (Cooreman 1994:59), and their English translations (see Levin 2015:1640):

- (27) un-patek i ga'lago
ERG.2SG-kick the dog
'You kicked the dog.'

- (28) mamatek hao gi ga'lago
ANTP:kick 2SG.ABS LOC dog
'You kicked **at** the dog.'

In example (28), the surface participant in the contact event is not necessarily affected because the event involves only an attempt on the part of the agent to carry out the action. In (28), the Chamorro Verb is also in an overtly coded Antipassive form (see section 8.4 for discussion of the antipassive). The semantic contrast between (27) and (28) and their English translations corresponds to what would be expected in the contrast between a transitive construction with an object vs. a subject–oblique strategy using an oblique. The referent of the oblique argument phrase does not undergo a change of state, and so is less salient; the referent of the object phrase sustains contact and may also change, and so is more salient in the event (see section 7.3.2).

The English examples in (23) and (26) represent two alternative argument structure constructions for the participants in the contact by impact event. In (23), the figure/instrument is expressed like an instrument in the prototypical agentive change of state event. In (26), the surface is expressed like the ground in a spatial relation, namely a spatial oblique phrase. The possibility of alternative argument structure constructions is often described as an ‘argument structure alternation’ (e.g., Levin 1993).

Many verbal semantic classes exhibit the same alternation as verbs expressing contact by impact events:

- (29) **Damage (sem)**
 a. He scratched the key across the car door.
 b. He scratched the car door with the key.

(30) **Application (putting) (*sem*) – 2-dimensional**

- a. She smeared jam on the toast.
- b. She smeared the toast with jam.

(31) **Application (putting) (*sem*) – 3-dimensional**

- a. They loaded the recyclables on the truck.
- b. They loaded the truck with the recyclables.

(32) **Removal (*sem*)**

- a. We scrubbed the mud off the windows.
- b. We scrubbed the windows of mud.

(33) **Combining (*sem*)**

- a. I blended the guava juice into the smoothie.
- b. I blended the smoothie with guava juice.

(34) **Killing/Injuring (*sem*)**

- a. He stabbed the knife into the monster.
- b. He stabbed the monster with the knife.

All of these verbal semantic classes involve physical participants that come into contact or some sort of spatial configuration involving contact, and involve some degree of transmission of force.

English is rich in these alternations; see Levin (1993) for a detailed survey. Alternations such as those in (29)–(34) occur in other languages as well, such as Hungarian (Moravcsik 1978:248; glosses added):

- (35)
- a. János fák-at ültetett a kert-be
John trees-ACC planted the garden-**into**
'John planted trees in the garden.'
 - b. János be-ültette a kerte-t fák-kal
John APPL-planted the garden-ACC trees-**with**
'John planted the garden with trees.'

Hungarian, like many languages – but not English – uses an applicative derivational affix on the predicate for the argument structure construction with the ground participant as object (see section 9.3 for discussion of applicative constructions).

The oblique flags in (29)–(35) conform to a construal of the event participants in a causal chain. For example, in (35a–b) – both the Hungarian and English sentences – the construed causal chain is *John → trees – garden*. The relationship between the last two participants in the “causal” chain is largely spatial, as was noted above. The argument phrase for ‘trees’ uses an antecedent flag in (35b) (the Instrumental suffix), because ‘garden’ is expressed as an object. In (35a), on the other hand, ‘garden’ uses a subsequent flag (the spatial suffix *-be* ‘into’) because ‘trees’ is expressed as object (see section 6.1.2 above, and Croft 1991a:ch. 5, and 2012:ch. 6).

English also has verbs for all of these semantic classes of events that recruit the transitive construction including an oblique phrase for the “instrument.” These verbs construe the event as change of state.

Table 7.1 *Alternative directed change and undirected change event construals in various experiential domains (adapted from Levin 2015:1637, table 3)*

Experiential domain	Manner verb (undirected change)	Result verb (directed change)
damage	<i>hit</i>	<i>break</i>
application (2-dimensional)	<i>smear</i>	<i>cover</i>
application (3-dimensional)	<i>pour</i>	<i>fill</i>
removal	<i>scrub</i>	<i>clean</i>
combining	<i>shake</i>	<i>combine</i>
killing	<i>stab</i>	<i>kill</i>

- (36) *Damage*: They broke the window with a hammer.
- (37) *Application (2-dimensional)*: We covered the grave with fresh flowers.
- (38) *Application (3-dimensional)*: I filled the glass with the Pouilly-Fumé.
- (39) *Removal*: I cleaned the monitor with a soft cloth.
- (40) *Combining*: I combined the flour with the raisins.
- (41) *Killing*: He killed the monster with the magic sword.

Levin treats the contrast between change of state events and the contact-like events as an instance of a broad contrast between dynamic predicates that she calls **result verbs** (*cxn*) and **manner verbs** (*cxn*), respectively (Levin 2015:1637). Result verbs describe the event as achieving a result state, or at least a scalar (directed) change that may lead to a result state. Manner verbs describe the manner in which the event proceeds, or is performed by an external agent, but do not inherently conceptualize the event as incrementally progressing toward or attaining a result state. It has been argued that, where there is an alternation, the construction with the ground-like object realized as an object, i.e. the (b) sentences in (29)–(34), expresses a change of state of the ground object, similar to the result verb sentences in (36)–(41) (though [41] is different: killing is clearly a different result state than successful stabbing); for discussion, see Croft (2012:307–13) and references cited therein. Many manner verbs in the categories described above allow both constructions in some languages (but see below).

Levin observes that, in English at least, there are both manner and result verbs describing events in many experiential domains, illustrated in Table 7.1.

There are also experiential domains where it appears that only manner events or only result events are lexicalized (Levin 2015:1638). Levin also points out that determining whether a predicate lexicalizes a directed change is not always easy to determine (Levin 2015:1639); caution must be taken in interpreting the meaning of predicates in another language or based on translations in descriptive materials.

Levin acknowledges that her proposals for differences in argument realization of manner and result verbs need to be explored further across languages.

Some examples from Malchukov and Comrie (2015), and the VALPAL database based on that research, suggest that the patterns may be more complex. For many of the domains listed above, English manner verbs express their participants in two different argument structure constructions (29a–b through 34a–b). In other languages, only one argument structure construction is found. We already noted above that Ulwa and Chechen-Ingush do not express the surface as a direct object, the constructional equivalent of (23). VALPAL includes the verb ‘load,’ which has both argument structure constructions in English (29a–b). Yaqui uses only the (a) construction, with the ground as a spatial oblique phrase (Estrada-Fernández, Blanco, and Quiñonez 2013, ex. 124):

- (42) karo-po maleta-m ne pu'akta
 car-LOC case-PL 1SG load.TR
 'I am loading cases onto the car.'

Xârâcùù uses only the (b) construction, with the ground as the direct object (Moyse-Faurie 2013, ex. 6):

- (43) kamûrû nñi na karèësi ngê nyüükwéré
 man load PST cart with hay
 'The man loaded the cart with hay.'

English *fill* is described as a result verb, allowing only the agentive change of state construction with the spatial figure expressed as an antecedent oblique:

- (44) a. She filled the bucket with water.
 b. *She filled water into the bucket.

Japanese allows the (a) type argument structure, as expected, but also the (b) type argument structure, with the spatial figure expressed as object (Taoka 2000:214):

- (45) a. John wa koppu o mizu de mitashi-ta
 John TOP cup ACC water INST fill-PST
 'John filled the cup with water.'
 b. John wa koppu ni mizu o mitashi-ta
 John TOP cup ALL water ACC fill-PST
 'John poured water into the cup [to the full].'

Although the argument structure is unexpected, the construction entails that the cup was filled (Taoka 2000:214), conforming to the result verb meaning of ‘fill.’

These remarks can only be suggestive. Few reference grammars describe the argument structure constructions found with particular semantic classes of verbs.

7.3.3 Other Less Prototypical Bivalent Events, and the Transitivity Hierarchy

Several hierarchies of events with respect to “transitivity” – that is, the likelihood that the argument structure construction for the event will recruit the transitive construction – have been proposed (Tsunoda 1981, 1985;

Malchukov 2005; Beavers 2011). Tsunoda's and Malchukov's hierarchies are based on crosslinguistic patterns of argument structure constructions – in particular, whether the canonical transitive construction is used for the event class. Malchukov distinguishes two hierarchies, one with physical events and one with experiential events (perception, cognition, emotion, sensation). Tsunoda has a single hierarchy, but Malchukov argues that two separate hierarchies provide more accurate crosslinguistic generalizations in terms of which event types are more likely to be expressed with the transitive construction of the language (Malchukov 2005). Also, physical events that are “lower” in the **Transitivity Hierarchy** tend to be expressed by a subject–oblique strategy, whereas experiential events use a variety of different non-transitive strategies (experiential events will be discussed in section 7.4). Malchukov's hierarchy of physical events is given in (46) (Malchukov 2005:81; Beavers's hierarchy is essentially the same but for one additional position, described below).

- (46) Transitivity Hierarchy: effective action < contact < pursuit < motion

The hierarchy in (46), similar to other typological hierarchies, is interpreted as: if (at least some of) the verbs in the event class at one position in the hierarchy express their core participants with the transitive construction, then (at least some of) the verbs in the event classes to the left in the hierarchy also express their core participants with the transitive construction. Conversely, if (at least some of) the verbs in the event class in the hierarchy express their core participants with the subject–oblique strategy, then (at least some of) the verbs in the event classes to the right in the hierarchy also express their core participants with the subject–oblique strategy.

Malchukov's category of effective action events corresponds to agentive change of state events, the prototypical event for defining the transitive construction. For this reason, it is at the leftmost end of the hierarchy. Motion events were discussed in section 7.3.1, where it was observed that motion events combining manner and some types of paths often use the subject–oblique strategy, but path of motion events often recruit the transitive construction. Contact events were discussed in section 7.3.2, where it was observed that, in some languages, contact events with only two salient participants (the agent and the surface) are expressed using the subject–oblique strategy instead of recruiting the transitive construction.

The category of **pursuit events (sem)** includes events such as ‘chase’ and ‘follow,’ and also events such as ‘search (for)’ and ‘wait (for).’ In pursuit events, not only does the second salient participant (the person/thing being chased or followed) not undergo an (internal) change of state, but also it acts independently to some degree from the action of the first salient participant (the chaser/follower), if it acts at all. That is, any change in the second participant is not brought about solely by force transmission from the first participant, but instead occurs at least partly independently.

Blume (1998) describes the more general category of events where the change to the second participant is at least partly independent of the force

transmitted by the first participant as **interaction events (sem)**. Blume argues that interaction events are frequently expressed with a subject-oblique strategy – specifically, a dative-like strategy – based on such verbs in German, Polish, Romanian, Hungarian, Tongan, and Samoan. Blume does not propose a hierarchy of interaction events, although she includes pursuit events in her analysis. Here, we will illustrate some classes of interaction events using Russian, which not only expresses the events using the subject-oblique strategy, but uses different oblique flags: the Dative, the Genitive, and the Instrumental (data from Janda and Clancy 2002).

By far the largest category of **interaction verbs (cxn)** involves two agents, where the second agent acts in some degree autonomously even if s/he is acquiescing to the first agent (compare obeying a command to go in a car, which is an interaction event, to being physically pushed or thrown into a car, which is not). Nevertheless, many such events involve a second participant that is not an agent and yet has some independence from the initiator of the event. For example, Russian expresses events of governance and leadership with the second participant in the Instrumental case, events of communication and submission with the Dative case, and avoidance events (in some sense the opposite of pursuit) with the Genitive case (Janda and Clancy 2002:30, 88, 118, all corpus examples; transliterated, and IMTs simplified):

- (47) Vaše finansovoe položenie upročitsja, esli naučites'
 your financial position become_strong:3SG, if learn:2PL
 lučše upravljat' vaš-im bjudžet-om
 better manage **your-INST budget-INST**
 'Your financial position will become stronger if you learn how to manage your budget.'
- (48) Ja pozvonil zavedujušč-emy sportiv-noj kafedr-oj
 I call:PST **head-DAT** athletic-INST department-INST
 'I called the head of the athletics department.'
- (49) Ona predavalas' udovol'stviy-am, razumno izbegaja
 she yield:PST **pleasures-DAT**, judiciously avoiding
 neprijatnost-ej
unpleasant_things-GEN
 'She abandoned herself to pleasure, judiciously avoiding unpleasant things.'

In some cases, the subject-oblique strategy is used when there is no independent action on the part of the second participant (Janda and Clancy 2002:102):

- (50) sistema bezopasnosti na avialinijax ètix stran ne otvečaet
 system security on airlines those countries not correspond
 meždunarodn-ym standart-am
international-DAT standards-DAT
 'The security system used by the airlines of those countries does not correspond to international standards.'

Blume argues in such cases that one of the actions performed by one of the participants may be presupposed (Blume 1998:254): in (50), the presupposed action would be the establishment of the international standards. It is possible that it is better to treat such stative relations between two participants simply as being even lower in transitivity. There is clearly a wide range of event types of human interaction – including interactions involving events, states, emotions, social rules, and so on – that are lower on the Transitivity Hierarchy and therefore vary in the expression of their second participant across languages. However, little systematic crosslinguistic research has been done on these event types (but see Croft and Vigus 2020 for patterns of encoding states and actions in interaction events in English).

In section 6.2.1, it was argued that agentive change of state events are the event type for the prototypical transitive verb construction. In this section, we have briefly surveyed events in which the second participant does not undergo a change of state as a direct effect of the agentive participant's action, or is independently agentive itself. Such events may be expressed with the subject-oblique strategy, and the Transitivity Hierarchy indicates there are constraints as to which events are more likely to be expressed with the subject-oblique strategy in a language. But even bivalent events that are agentive change of state events may be expressed in a non-transitive construction if they are not sufficiently agentive or do not describe a complete change of state.

A change of state event may be expressed by a strategy other than recruiting the transitive construction, depending on the nature of the external cause. The definition of the prototypical event for the transitive construction indicates that the external cause is an agent. If the external cause is not an agent but a natural force, a less transitive construction may be used. For example, in Russian, the preferred construction for events brought about by a natural force is (51) (Maria Sotnikova, pers. comm.):

- (51) Ego ubil-o molni-ej
 3SG.M.ACC killed-3SG.N lightning-INST
 'Lightning killed him/He was killed by lightning.'

Example (51) describes an instance of direct causation, but the initiator is a natural force and therefore lacks volition, which is a characteristic of humans (and higher animals), and taken to be the prototype for control over the outcome of an event. As a consequence, the natural force participant is preferably encoded by an oblique (Instrumental) argument phrase, rather than a Subject argument phrase; and since there is no Subject argument phrase in (51), the verb is in an Impersonal (3rd Singular Neuter) form.

Even when the external cause is agentive, the agent's involvement in and control over the event must be direct in the prototypical transitive event. In Newari – and in the English translations – different degrees of control over the outcome of the event lead to a choice of a different argument structure construction (DeLancey 1984:195):

- (52) harsa-n̩ wo misa-yato siat-ɔ
 Harsha-ERG the woman-DAT kill-PFV
 'Harsha killed the woman.'

- (53) harsa-n̩yana wo misa-yato sit-ɔ
 Harsha-“CAUSE” the woman-DAT die-PFV
 'Because of Harsha, the woman died.'

Example (53) indicates a lower degree of control – or, more precisely, responsibility – on the part of the human agent for the outcome of the event (see DeLancey 1984 for further discussion). For this reason, the event is encoded with only one core argument (and so the verb is in a form translated as ‘die,’ from which the form in [52] meaning ‘kill’ is derived), and the A participant is encoded as an (antecedent) oblique argument phrase.

With respect to the patient participant, another significant semantic parameter is relevant to the definition of the transitive construction – namely, the aspectual semantic structure of the event. If the participant in a directed change event does not attain the final result state, a language may encode the patient in an oblique argument phrase; compare the Supyire examples in (54)–(55) (Carlson 1994:411):

- (54) u à lwohē bya
 3sg PRF water.DEF drink
 'She drank the water.'

- (55) u à bya lwohē e
 3SG PRF drink water.DEF in
 'She drank some of the water/She drank from the water.'

In example (55), the event is not complete – that is, it is atelic (section 6.2.1), because not all of the water is drunk. This semantic difference is manifested in what is sometimes called the partitive construction, in which the incompletely affected P participant is encoded with an oblique flag – another example of the subject-oblique strategy. Beavers (2011) creates a separate point on his hierarchy of affectedness for the partitive construction – in fact, more generally, for atelic directed changes (Beavers describes the patient-like participant as a participant undergoing a non-quantized change).

Another way in which an event may be rendered atelic is by repetition of the event, since there is no natural end to the repetition, as in (56) from West Greenlandic (Fortescue 1984:86, cited in Cooreman 1994:57) and (57) from Chamorro (Cooreman 1994:57):

- (56) inun-nik tuqut-si-vuq
 people-INST kill-ANTP-INTR.IND.3SG.ABS
 'He killed people.'

- (57) mang-galuti gue' ni ga'lago
 ANTP-hit ABS.3SG OBL dog
 'He repeatedly hit the dog.' [or: habitually hit the dog]

These examples also show that the verb is in a morphologically derived form, the antipassive (see section 8.4), and that the second salient participant is encoded by an oblique argument phrase.

Another example of an alternation in argument structure due to an aspectual contrast is so-called aspect-based split ergativity. In some languages, an ergative alignment strategy is used in the perfective aspect or past tense, associated with a completed event; but a nominative alignment strategy is used in the imperfective aspect or present tense, associated with an uncompleted event. In the Gujarati examples below, the contrast is found in indexation; the flagging alignment strategy is neutral (DeLancey 1981:628–29, from Mistry 1976):

- (58) ramesh pen khərid-t-o hə-t-o
 Ramesh(M) pen(F) buy-IMPF-M. AUX-IMPF-M
 'Ramesh was buying the pen.' [verb indexes the A participant]
- (59) ramesh-e pen khərid-y-i
 Ramesh(M)-ERG pen(F) buy-PRF-F
 'Ramesh bought the pen.' [verb indexes the P participant]

DeLancey (1982) argues that orientation of completed events is toward the P participant (since the P undergoes a change), whereas the orientation of incomplete events is toward the A participant (since the A participant is still in the process of carrying out the event):

Participant role: A → P
Aspect: imperfective → perfective

In all of these cases, a strategy other than recruiting the transitive construction is used when the event is not fully carried out, is repeated, or is imperfective in aspect (Hopper and Thompson 1980). In order to incorporate the semantic value of aspect, we revise the definition of the prototypical transitive construction from section 6.2.1 as follows:

- (60) **transitive construction (final version):** the argument structure construction used to express the agent of a predicated breaking event and the patient of a breaking event when the agent is more salient than the patient and the breaking event is a single, completed event.

7.4 Experiential Events: Perception, Cognition, Emotion, Sensation – and also Ingestion

Human internal mental and bodily experiences make up a rich and complex domain for expression, both of the participants and of the experience itself. The experiential situation is commonly expressed – people like to talk about people, especially themselves – yet the relationships among the participants are different than is the case for the sorts of external physical or volitional events that

appear to be the prototypical event types in grammatical terms for the definition of transitive and intransitive constructions (Chapter 6). Most generalizations about the expression of participants as argument phrases, including the generalizations presented above, exclude **experiential events (sem)** from their purview.

Experiential events include three broadly defined types of psychological (mental) experience, plus a fourth type, physiological (bodily) experience:

- (i) **Perception events (sem):** *see, look at, hear, listen to, taste, touch, feel, etc.*
- (ii) **Cognition events (sem):** *know, think about, remember, forget, wonder about, etc.*
- (iii) **Emotion events (sem):** *fear, frighten, love, like, want, surprise, annoy, etc.*
- (iv) **Bodily sensation events (sem):** *itch, ache, feel hot/cold, be hungry, be sick, etc.*

Cognition events and some emotion events may describe the relationship between a person and a state of affairs, usually expressed as a subordinate clause: *I know that she is coming; I want her to come.* We will not consider those event types here; they will be discussed in Chapters 13 and 17.

The central participant in an experiential event is the **experiencer (sem)**, the person who experiences the internal mental or bodily situation. The experiencer is almost always human. The experience is typically stimulated by some other participant, which is called the **stimulus (sem)**. The experience itself may be expressed by a complex predicate. Complex predicates are described in detail in Chapter 13, but in this section we will briefly introduce certain types of complex predicates found with experiential events. The reason for this is that the experience itself is sometimes expressed in a form that recruits the argument phrase construction – that is, it is conceptualized as a participant in the event in its own right. The experience itself as “participant” is called the **expertum (sem)** by Verhoeven (2007:ch. 3), whose analysis is largely followed here.

The most striking grammatical fact about **experiential constructions (exn)** is that seemingly the same events can be expressed with the experiencer and stimulus participants encoded in the reverse grammatical roles, even in the same language:

- (61) a. I like cats. [Subject = experiencer, Object = stimulus]
 b. Cats please me. [Subject = stimulus, Object = experiencer]

Example (61a) is called an **experiencer-subject** (Croft 1993) or **experiencer-oriented strategy (str)** (Verhoeven 2007), and example (61b) is called an **experiencer-object** (Croft 1993) or **stimulus-oriented strategy (str)** (Verhoeven 2007). We will use Verhoeven’s terms here.

Examples (61a–b) represent the strategy of recruiting a transitive argument structure for the experiential construction: there are two core arguments, a subject and an object (or with the ergative alignment strategy, ergative and absolute). Example (61a) represents an experiencer-oriented transitive strategy and example (61b) represents a stimulus-oriented transitive strategy.

Very often, however, the nonsubject participant is expressed as an oblique. Example (62) from Samoan (Mosel and Hovdhaugen 1992:106; cf. Verhoeven 2007:77), and its English translation, illustrates an experiencer-oriented intransitive strategy, with an experiencer subject and an oblique stimulus:

- (62) sā 'ou ita 'i l=o='u uso
 PST 1SG angry PREP ART=POSS=1SG brother
 'I was angry with my brother.'

Example (63) from Ancient Greek (Verhoeven 2007:77) illustrates a stimulus-oriented intransitive strategy, with a stimulus subject and an oblique (Dative) experiencer:

- (63) moi enok^bleis
 1SG.DAT bother.2SG
 'You bother me' (*Heliodorus, Aethiopica* 10.9.5, 3AD)

Croft (1993, 2012) argues that the apparent reversal of grammatical roles reflects a subtle semantic difference of force-dynamic construal between participants in experiential events. Experiential events, or at least mental events, involve two different causal relations: the experiencer directs her/his attention to the stimulus, and the stimulus alters the mental state of the experiencer. Some verbs lexicalize events that highlight the experiencer directing her/his attention: *look at, listen to, think about, grieve over*. We will call these **attending events (sem)** (Viberg 1983 calls them ‘activity verbs’ in his typological survey of perception verbs). Verbs expressing attending events appear to always encode the experiencer as subject – that is, they always use the experiencer-oriented strategy. The stimulus may be encoded as a direct object, or as an oblique (as in the English examples above). The fact that the stimulus does not undergo a change of state in an attending event presumably motivates the use of the subject-oblique strategy.

Other verbs lexicalize events that highlight the stimulus altering the mental state of the experiencer: *frighten, surprise, please, amuse, bore, excite*. We will call these **affecting events (sem)** (they are not discussed by Viberg). Verbs expressing affecting events appear to always encode the stimulus as subject – that is, they always use the stimulus-oriented strategy. The experiencer may be encoded as an object or as an oblique. Oblique encoding of the experiencer in affecting events may be motivated by the fact that the experiencer is human (see section 8.3) and/or by the fact that the change in the experiencer is psychological, not physical.

These generalizations only apply to experiential situations construed as dynamic (i.e. processes), such as mental cogitation (*think about*). In these cases, languages appear to be very consistent in the coding of the experiencer and the stimulus. However, a third set of verbs lexicalize states – namely, the experiential relationship that holds between the experiencer and the stimulus (*see, remember, fear*); they may also encode the process of entering the state, e.g. *I suddenly remembered the answer* (Viberg 1983:123; Croft 2012:38). We will call these events **experience events (sem)** (following Viberg 1983; not to be confused with experiential

events, which is the superordinate category including attending, affecting, and experience events). The mental state is a “two-way” relationship in an experiential event: it highlights both the experiencer attending to the stimulus and the stimulus bringing about the mental state of the experiencer simultaneously. Another consequence of the “two-way” relationship is that the experience is not always controlled by the experiencer: hearing a noise, for example, may be involuntary. In contrast, attending events are controlled by the experiencer (Viberg 1983:123).

The symmetry of the “two-way” relationship of experience events is manifested in the fact that either experiencer or stimulus are encoded as subject, as in (61)–(63). The “two-way” nature of experience events also means that more symmetric encoding strategies are sometimes employed with these events.

Both experiencer and stimulus may be expressed in an object phrase, as in the Eastern Pomo examples in (64)–(65) (McLendon 1978:3; these are the patientive [inactive, glossed PAT] forms in an active alignment system):

- (64) bé:kal wí p^bi:lé:mka
 3PL.PAT 1SG.PAT miss
 ‘I miss them.’

- (65) mí:ral wí ma:rá:
 3SG.PAT 1SG.PAT love
 ‘I love her.’

Or both experiencer and stimulus may be expressed in subject phrases, as in the Japanese example in (66) (Kuno 1973:80; normally, one participant is expressed as a topic with the postposition *wa*, except in certain constructions such as questions):

- (66) dare ga eiga ga suki desu ka
 who NOM movie NOM fond_of is Q
 ‘Who likes movies?’

These two **double-coding strategies (str)** lack orientation in Verhoeven’s sense: both experiencer and stimulus are expressed by the same type of argument phrase.

Very rarely, one finds a fifth strategy in which neither central participant is expressed by a core argument phrase, and both experiencer and stimulus are oblique. Verhoeven cites examples from Old English and Ancient Greek in which the experiencer is dative and the stimulus is genitive; example (67) is from Ancient Greek (Verhoeven 2007:78, with a headless referring expression for the stimulus; see section 19.4):

- (67) mélei moi toútōn hôñ erōtâis
 care:3SG 1SG.DAT that:GEN.PL.N that:GEN.PL.N ask:SBJ:2SG
 ‘I care about what you ask.’ (Xenophon, *Oeconomicus* 11.9.4, 4 BC)

In this **double-oblique strategy (str)**, experiencer and stimulus are expressed by different oblique flags. It is therefore somewhat less symmetric than the double-coding strategies with core argument phrases.

Some languages allow either experiencer or stimulus to be encoded as subject with experiential verbs, such as emotion verbs in (68)–(69) from Yorùbà (Rowlands 1969:127):

- (68) èrù' bá mí
fear fall_on me
'I felt afraid.'
- (69) má bérù
NEG.IMP fall_on:fear
'Don't [you] be afraid.'

The semantic difference is as expected – namely, the stimulus-oriented expression focuses on the impact of the emotion on the experiencer, while the experiencer-oriented expression focuses on the control that the experiencer has over the emotion. Example (68) indicates an uncontrolled reaction by the experiencer to the (unmentioned) stimulus. In contrast, example (69) indicates some degree of control by the experiencer over the emotion. Examples (68)–(69) also illustrate a complex predicate for the experiential event, described below.

In some cases, there is no (external) stimulus, particularly for bodily sensations, and so only the experiencer is expressed. Nevertheless, the experiencer, though human and hence topical, typically has little control over the feeling and is affected by it. As a consequence, one finds the experiencer encoded not only as subject, as in (70) from English, but also as object (accusative), as in (71) from Amharic (Amberber 2001:62; cf. Verhoeven 2007:76); or as an oblique, as in (72) from Chickasaw (Munro and Gordon 1982:84; cf. Verhoeven 2007:76) and (73) from German (Verhoeven 2007:76):

- (70) I am cold/hungry/sad.
- (71) aster(-in) čənnək'-at
Aster-ACC worry.PF.3M.SBJ-**3F.OBJ**
'Aster is worried.'
- (72) an-hokma
3SG.DAT-good
'I feel good.'
- (73) Mir ist schlecht
1SG.DAT is bad
'I feel sick.'

The existence of argument structure constructions with a single oblique-like dative argument phrase, common with experiential situations, has led some linguists to argue that so-called split intransitivity (section 6.3.3) should be thought of as a three-way split (subject, object, oblique; Martin Haspelmath, pers. comm.). In the Chickasaw and German examples, the oblique dative argument phrase encodes the experiencer. Likewise, in the examples from Ancient Greek

in (63) and (67), the oblique dative argument phrase also encodes the experiencer, although the stimulus is expressed as well, indexed as a core argument in (63) and expressed by another oblique phrase in (67).

There are some other empirical generalizations that appear to hold for different types of experiential predicates across languages. Attending verbs are more likely than experience verbs to express the stimulus as an oblique argument, since the stimulus in attending verbs does not undergo a change of state. For example, in Swedish the verb *se* 'see' uses the transitive construction for the experience, but it may also be used with a subject–oblique construction for the attending 'look at' meaning, in addition to the verb *titta* which specifically means 'look at' and also uses the subject–oblique construction (Viberg 1983:134):

- (74) Peter såg David
 Peter saw David
 'Peter saw David.'

- (75) Peter såg/tittade på David
 Peter see/look at David
 'Peter looked at David.'

It also appears that verbs expressing emotional experiences and sensations are more likely to express the experiencer as an object or an oblique, since humans have less control over emotions and sensations than perception, where humans can direct their attention toward or away from the stimulus (cognition is in between perception and emotion in this respect).

Finally, there is a diachronic path by which the coding of the experiencer may change from nonsubject to subject expression (Cole et al. 1980). For example, earlier stages of English expressed the experiencer by a dative argument phrase, but English now expresses the experiencer as the core subject argument for many experiential predicates: compare the accusative *him* in (76) with the translation *he* in the gloss (Cole et al. 1980:729):

- (76) Of þat him drempte in prisum
 of that **him(ACC)** dreamed in prison
 'He dreamed of that in prison.' (Genesis and Exodus, 2110, AD 1250)

Bodily sensations do not have an external stimulus, but they often have a body part of the experiencer as a stimulus. Since the body part is a part of the experiencer, the experiencer may be encoded as the possessor of the body part:

- (77) My hands are cold.

Body parts, and the person/possessor whose part they are, are encoded in a wide variety of strategies across languages, only some of which we can describe here. In (77), the body part is encoded as a core argument phrase. However, in some cases, both experiencer and body part are expressed as arguments of the predicate, as in the Ngaliwurru variety of Jaminjung (Schultze-Berndt 2000:463; cf. Verhoeven 2007:75; both participants are expressed as absolutive arguments):

- (78) warlad nga-yu durlu
sore 1SG-be.PRS **heart**
'I have a sick heart.'

Thus, one should not assume that a possessive modifier in a clause, especially a possessor of a body part, is not a participant in the event denoted by the predicate (see also section 13.6). That is, there are some situations in which the semantic possessor of a participant is itself sufficiently salient, often in part because of its humanness, for it to be construed as a participant in the event expressed by the predicate, despite its indirect relationship to the event per se.

And in other constructions, the part is not a body part but an immaterial part, as in (79) from Wolof (Becher 2003:48; cf. Verhoeven 2007:84); or a body part used metaphorically for an immaterial entity, as in (80), also from Wolof (Becher 2003:57; cf. Verhoeven 2007:92); or a possessed phrase directly encoding the expertum, as in (81) from Samoan (Mosel and Hovdhaugen 1992:771; cf. Verhoeven 2007:74):

- (79) nen a nekk ci sama xel
egg FOC be_located LOC POSS.1SG **mind**
'I think of eggs.' [lit. 'Eggs are on my mind.']}
- (80) sama xol dafa tàng
POSS.1SG **heart** SBJ.3SG be_hot
'I am angry.' [lit. 'My heart is hot']
- (81) ua faanoanoa o=’u lagona
PRF sad POSS=1SG **feeling**
'I am sad.' [lit. 'My feelings are sad']

In these cases, it is progressively less plausible to analyze the expression that looks like an argument phrase as a participant in the event; rather, it expresses the mental event itself. Instead, we may analyze these as complex predicates consisting of the verblike element and the argument-like element that denotes the experiential state (see section 13.4). The experiencer is then expressed by a possessor phrase modifying the nounlike part of the complex predicate.

We also find cases in which the expertum is expressed as an argument-like expression which combines with a verblike part to form a complex predicate; the experiencer is encoded as an argument of the predicate, as in Bété (Verhoeven 2007:81, from Reh 1998), as well as the Yorùbà examples in (68)–(69) above:

- (82) wōtròkō/jòló/zú/ŋjānō/ŋwání wù-᳚ lìfá-lé
coldness/boredom/shame/fear/happiness PROG-1SG hit-PTCP
'I am cold/bored/ashamed/afraid/happy.'

Examples (79)–(82), which contain complex predicates with a body part or expertum noun, also lack a stimulus.

Finally, one finds compounding or incorporation (section 8.4) of the body part or expertum noun, as in (83):

- (83) I have a **headache**.

The complexity of the expression of participants in experiential situations is thus partly a consequence of the atypical causal relations among the participants (experiencer and stimulus), and partly a consequence of the atypical event type, leading to frequent expression as a complex predicate. The complex predicate is the argument type (see section 13.4), and so the nounlike part of the complex predicate is usually encoded as if it were a subject or other argument role in the clause.

One final peculiarity of the expression of the participants in experiential events will be described here, as it provides a transition to the next section. In a number of languages, certain verbs are formed as the causative of certain experiential and ingestion predicates, where other languages, including English, instead have a completely different verb. A table of such causatives in Hindi formed with the suffix *-aa* is given in (84) (Masica 1976:46):

	<i>Base verb</i>		<i>Causative verb</i>	
(84)	deekh-	'see'	dikhaa-	'show'
	sun-	'hear'	sunaa-	'relate, tell'
	samajh-	'understand'	samjhaa-	'explain'
	siikh-	'learn'	sikhaa-	'teach'
	parh-	'read'	parhaa-	'teach'
	khaa-	'eat'	khilaa-	'feed'
	pii-	'drink'	pilaa-	'give drink to'

Causatives add an external agent or **causer (sem)** to an event, and will be discussed in more detail in section 9.2. However, there are two peculiarities about these causatives in Hindi which merit their discussion here. First, the causative suffix *-aa* is different from the usual causative suffix for transitive agentive verbs, which is *-waa* (Masica 1976:45). In languages where causatives can be formed only from intransitive verbs, the base verbs in (84) may exceptionally be causativized (Dixon 2000:64, citing Nedjalkov and Silnitsky 1973:16; see also Naess 2009). That is, the base verbs in (84) are far from prototypical transitive verbs; see also section 8.4.

Second, the argument structure construction strategy for the causative verbs in (84) is different from the strategy for the causatives of transitive verbs. In the causatives construction of transitive verbs, such as *banwaa-* 'have [someone] build [something],' the causer is expressed as subject, the original agent is expressed in an oblique phrase with *see* 'by,' and the patient remains as an object phrase (Masica 1976:45). In the causative construction of the causative verbs in (84), the causer is subject, the patient remains as an object phrase, but the experiencer is expressed in a dative oblique phrase with *koo* 'to' (Masica 1976:46).

In other words, the causative construction for the causative verbs in (84) is identical in form to the ditransitive construction used for 'give' and other transfer of possession verbs – the topic of the next section. This is true in English as well, where all of the causative verbs in (84) allow the two constructions typically found with transfer of possession verbs:

- (85) a. Sue showed me the flower / Sue showed the flower to me.
 b. Sue gave me the flower / Sue gave the flower to me.

In fact, this convergence in argument structure constructions is sufficiently common for ‘show’ and ‘tell’ to often be included as prototypical transfer verbs, albeit of “mental” transfer (see section 7.5.1). All of the other causative verbs in (84) are also construable as a type of transfer.

The verbs in (84) include the **ingestion verbs** (*cxn*) ‘eat’ and ‘drink.’ Ingestion events are generally not analyzed as instances of experiential events. They involve what appears to be a canonical change of state verb with an agent (the ingestor) and a patient that undergoes a change of state (the food or drink). On the other hand, ingestion of food and drink involves not only a change of state of the food/drink, but also a physiological change in the ingestor – namely, satiating hunger or thirst. Hunger and thirst are typical sensations. Verhoeven includes sensation events in the class of experiential events because the typology of the expression of sensation events and their participants overlaps almost completely with the typology of the expression of mental experiences and their participants. Thus, it is not entirely surprising that ingestion verbs behave similarly to other experiential verbs with respect to the expression of their participants.

The typological similarity of ingestion events to other experiential events is found largely with respect to causative formation (see also Saksena 1980; Amberber 2009; Naess 2009). As bivalent events, the physical change of state of the food or drink strongly motivates recruitment of the transitive construction. However, simple bivalent ingestion events may exhibit subject–oblique argument structure in some instances. In Movima, the verb *kay* ‘eat’ exhibits a middle voice (see section 7.2 above) reduplicative form, and the food is expressed as an oblique phrase (Haude 2006:282; see also Naess 2009:31; DSC = Discontinuative, a = Absential):

- (86) Jayna *kay~kay* ni-kis cho~cho¹-a=kis ney 4o'im
 DSC MID~eat OBL-ART.PL.a nut-BUFF =ART.PL.a here [tree sp.]
 'They [the macaws] eat the nuts of those 4o'im [trees].'

7.5 The Ditransitive Construction: Trivalent Events, and Possession

7.5.1 Defining Ditransitive Argument Structure Constructions and Trivalent Events

As we observed in section 1.3, the term ‘ditransitive,’ like ‘transitive’ and ‘intransitive,’ is used for both an argument structure construction and a semantic class of events. Used for an argument structure construction, ‘ditransitive,’ ‘transitive,’ and ‘intransitive’ refer to events that are packaged

with three, two, or one core argument phrases, respectively, in terms of the flagging or indexation in the construction (section 6.1.2). On the other hand, certain semantic classes of events are more likely to be encoded by a ‘ditransitive’ construction – namely, those that we called trivalent events in section 6.1.2.

This terminological ambiguity leads to complications in the typological description of “ditransitives.” A ditransitive construction supposedly has three core argument phrases. If so, then the only “true” ditransitive construction has two object-like core argument phrases, as in *Sue gave me the flower*. Such a morphosyntactic structure is often called a double object “construction.” In fact, not all languages have a double object “construction” – that shows that it is a double object strategy, not a construction (see section 7.5.2, where this strategy is renamed the neutral strategy). Instead, most scholars (e.g. Malchukov et al. 2010) treat strategies in which one of the three participants is encoded by an oblique argument phrase, as in *Sue gave the flower to me*, as ‘ditransitive’ if they are used for the semantic classes most likely to be encoded using a double object strategy in languages that use that strategy.

Thus, the classification of strategies for ditransitive constructions in section 7.5.2 will include strategies in which the three central participants are expressed by two core argument phrases (subject and object) and an oblique argument phrase. But constructions with two core argument phrases and an oblique argument phrase occur with most, if not all, bivalent events, as we saw in section 7.3. Bivalent change of state events usually have a third, instrument-like participant that may be expressed by an oblique argument phrase. Bivalent manner events usually have three participants in total: the agent, and two participants in a spatial relationship – one of which is normally expressed by an object argument phrase and the other of which is usually expressed by an oblique argument phrase.

How do we distinguish trivalent events – the events that are generally assumed to have three central participants – from other events that have three participants, only two of which are generally considered to be central participants?

The prototypical trivalent events – those most likely to be found with the double object strategy if the language uses this strategy – are the event classes listed below (Malchukov et al. 2010:2):

- *physical transfer*: ‘give,’ ‘send,’ ‘sell,’ ‘lend,’ ‘hand,’ ‘return’
- “*mental transfer*”: ‘show,’ ‘tell’

These events are the only ones that we will call **trivalent events (sem)**, or, more narrowly, **transfer events (sem)**. As we noted at the end of section 7.4, trivalent events include “mental transfer” events, i.e. the causatives of at least the first two causative verbs listed in (84). Transfer events form the prototype for the **ditransitive construction (cxn)**, just as agentive change of state events form the prototype for the transitive construction.

'Give' is taken to be the predicate that will most likely be expressed in a distinctive ditransitive construction. But 'give' is so distinctive that it often has unique or near-unique morphosyntax (see section 7.5.2, Borg and Comrie 1985, and Kittilä 2006), so scholars also look at the other transfer events, including 'send,' 'show,' 'tell,' and 'sell,' in order to identify the ditransitive argument structure construction(s) of a language.

Even so, still other classes of events recruit the ditransitive argument structure construction of the language. These events include 'feed,' as noted in (84); 'throw,' 'carry/take,' and even the event types discussed in section 7.3, which all have a third participant, albeit not as salient.

7.5.2 Major Alignment Strategies for Ditransitive Constructions

In order to discuss the encoding of argument phrases in the ditransitive construction, typologists use similar mnemonic letters to those used for bivalent and monovalent events (Croft 2003; Malchukov et al. 2010):

- (87) I [A] ate the chocolate [P].

- (88) I [A] sent/showed/read the stories [T] to my mother [G/R].

The label **T (sem)** represents the theme-like participant role – that is, the thing that is transferred. The label **R (sem)** (Malchukov et al. 2010) or **G** (Croft 1990a, 2003) represents the goal-like or recipient-like participant. Since we are narrowly defining trivalent events as transfer events, which always have recipients, we will use 'R' for the third participant.

In section 6.3.1, we illustrated different strategies for the co-expression of either the A or P participant of a bivalent event with the S participant of a monovalent event. There are analogous alignment strategies for the co-expression of either the T or R participant of a trivalent event with the P participant of a bivalent event. (Co-expression of the A participant of bivalent and trivalent events appears to be universal, and for this reason typologists use the label 'A' for both.) The terms for the co-expression (alignment) strategies presented below are from Malchukov et al. (2010).

The first alignment system is **neutral alignment (str)**: P, T, and R are all co-expressed. The neutral alignment strategy is also called the **double object strategy (str)** in construction grammar. The neutral strategy is illustrated for English in (89):

- (89) I showed/sent/read my mother [R] the stories [T].

In the neutral alignment system, the order of T and R are usually fixed – often but not always with R preceding T. Neutral alignment is typically found with the flagging of common nouns. If object indexation is found, and if a predicate indexes both objects, distinct indexation forms are usually used for T and R, and the distinct indexation forms follow one of the other two alignments.

The second alignment system is **indirective alignment (str)**. In indirective alignment, P and T are co-expressed. The grammatical category co-expressing P and T is called the **direct object category (str)**. The category expressing only R is called the **indirect object category (str)**. Indirective alignment is illustrated in (87)–(88) above. The direct object category of (P+T) is more frequent in discourse than the indirect object category (R only; Croft 2003:154). Hence, based on the structural coding universal (section 2.5), if any object category is zero coded, it will be the direct object category.

The three central participants in transfer events are construed in a causal chain as follows (Croft 1991a, 2012):

$$A \rightarrow T \rightarrow R$$

In indirective alignment, T is encoded as an object argument phrase (accusative or absolute) and R is coded by a subsequent oblique argument phrase, usually labeled Dative – in fact, this is the defining prototypical role for the dative oblique argument phrase.

This is another example of an oblique flag for a salient non-agent human participant role in an event – the R participant role – like the dative flag used for the experiencer participant role described in section 7.4. As with the experiencer role, the recipient role is considered central enough, and the human participant in that role is salient enough, for R to be considered the third central participant in a trivalent event, despite the oblique argument phrase form in indirective alignment.

The third alignment system is **secundative alignment (str)**. In secundative alignment, P and R are co-expressed. The grammatical category co-expressing P and R is called the **primary object category (str)** (Dryer 1986). The category expressing only T is called the **secondary object category (str)** (Dryer 1986).

Secundative alignment is rarely expressed via flagging. In Yokuts, the secondary object category is marked by locative preposition *ni* (Newman 1944:198, 201):

- (90) ka:y'u' te:w-a 'amin xatta
 Coyote rabbit-PO 3SG.POSS ate
 'Coyote ate his cottontail rabbit.'

- (91) 'ama' tan kay'iw wana:-'an he:xa:-ni 'amin
 and DEM.PO Coyote give-DUR.PRS fat-so 3SG.POSS
 'And Coyote gives him his fat.'

The primary object category (P + R) is more frequent in discourse than the secondary object category (T only; Croft 2003:154). Hence, based on the structural coding universal, if any object category is zero coded, it will be the primary object category.

Since the causal chain for transfer events is construed as A → T → R, in the secundative alignment the R participant is coded as object and the T participant is coded by an antecedent oblique flag, usually identical in form to the

Table 7.2 *Grammatical comparative concepts for groupings of P, T, and G as core argument phrases (alignment strategies)*

Semantic role	T participant roles	P participant roles	R participant roles
Grammatical argument phrase categories	direct object		indirect object
	secondary object	primary object	

instrumental – or sometimes locative – oblique argument phrase. In other words, in the secundative alignment, the ditransitive construction is coded with the same argument structure construction as a prototypical bivalent event, namely a transitive argument structure construction with R coded like the “patient” and T coded like the “instrument.” That is to say, the secundative alignment strategy appears to be recruited from the basic transitive construction with an instrument.

Secundative alignment is far more frequently expressed via indexation of the primary object only, as in Huichol (Comrie 1982a:99, 108)

- (92) uukaraawiciizi tiiri me-wa-zeiya
 women children 3PL.SBJ-3PL.OBJ-see
 ‘The women see the children [P].’

- (93) nee uuki uukari ne-wa-puuzeiyastia
 I man girls 1SG.SBJ-3PL.OBJ-show
 ‘I showed the man [T] to the girls [R].’

The R participant is always animate and usually human, while the T participant is rarely either animate or human. So indexation, generally associated with highly salient participants, is highly likely to index a primary object, as in Huichol.

Both T and R in transfer events undergo a change of state: the T participant changes its possessor, and the R participant gains a possession (with possession treated metaphorically in mental transfer events: see Croft 2012:312–15). The fact that both T and R participants undergo a change of state also motivates the use of the double object strategy, with both T and R participants clearly coded as core arguments.

Table 7.2 summarizes the alignment strategies of object argument phrases in ditransitive constructions.

Many languages use more than one alignment strategy for transfer verbs. In particular, the neutral (double object) alignment strategy is often available only with a subset of transfer verbs, which typically includes ‘give.’ In English, the neutral alignment strategy is used with many, but not all, transfer verbs:

- (94) a. I gave/sent/showed/read the book to Sue.
 b. I gave/sent/showed/read Sue the book.

- (95) a. The Iranians are supplying arms to the Shiites.
 b. *The Iranians are supplying the Shiites arms.
 c. The Iranians are supplying the Shiites with arms.

In Erromangan (Sye), there are only four verbs that use the neutral alignment strategy: ‘give,’ ‘tell,’ ‘call [something a name]’ and ‘name [someone a name]’ (Crowley 1998:202; cf. Kittilä 2006:576–77; *BR* = basic root):

- (96) y-ovog-i Nompwat nvag
 3SG.REM_PST-BR:**give**-CONST Nompwat food
 ‘S/he gave the food to Nompwat.’

Other transfer verbs such as ‘send’ use an indirective strategy (Crowley 1998:203):

- (97) yi-tamul-i nvat pog-kam
 3SG.REM_PST-BR:**send**-CONST money DAT-1PL.EX
 ‘S/he sent us money.’

Borg and Comrie (1984), discussing similar facts for Maltese, suggest that the exceptional behavior of ‘give’ is due to its higher frequency than other transfer verbs. Kittilä (2006), surveying a broad range of data, proposes that the exceptional behavior of ‘give’ is due to its having three core participants, making it a ‘more transitive’ verb than other transfer verbs.

7.5.3 The Indirect Object – Possessive Continuum

Transfer events are generally thought of as having three participants, all of which are expressed as arguments of the predicate. This is true of all three alignment strategies illustrated in section 7.5.2. However, there is another strategy that is occasionally found, in which R is expressed like the possessor of T in a possessive modification construction – compare the K'ichee' example in (98) to its English translation (Mondloch 1978:200):

- (98) qu-Ø-i-yā jun nu-quēx
 IMPF-3SG.ABS-(2PL.ERG-)give one 1SG.POSS-deer
 ‘Give me a deer.’ [lit. ‘Give my deer’]

This strategy was described as ‘indirect object “lowering”’ in Croft (1985); here we will give it a more neutral name, the **internal recipient strategy (str)**. The internal recipient strategy is also found with verbs of creation, as in (99) from Mokilese (Harrison 1976:133; gloss from Croft 1985:42), and – less surprisingly – with verbs of obtaining, as in (100) (Croft 1985:43, attested example):

- (99) ngoah insigeh-di kijinlikkoau-oaw nih-mw
 1SG write-ASP letter-one CLF-2SG.POSS
 ‘I wrote a letter to/for you.’ [lit. ‘I wrote your letter’]

- (100) Let's go get your beret. [speaker is referring to a nonspecific beret she will buy]

The seeming mirror image of the internal recipient strategy is the expression of the semantic owner, etc., of a participant (usually the P or S participant) as an argument of the predicate: compare the Maasai example in (101) to its English translation (Payne 1997:196):

- (101) áa-buak-itá ɔldia
 3>1-bark-PROG dog:NOM
 'My dog is barking.' [lit. 'The dog is barking me.']}

This strategy is called an 'external possession' strategy (Payne and Barshi 1999), since the possessor of the referent is not expressed internally as a modifier in the referring expression, but as a separate argument of the verb in its own right.

The explanation offered in Croft (1985), updated to the framework in this book, is that there are two strategies for expressing events which involve one individual in a possession relation with respect to another individual: an **external possessor strategy (str)** in which the possessing individual is expressed as an argument of the predicate, and an **internal possessor strategy (str)** in which the possessing individual is expressed as a modifier of the phrase denoting the possessum. The internal recipient strategy is hence a subtype of the internal possessor strategy.

It turns out that either the external possessor strategy or the internal possessor strategy may be used for events ranging from those in which the possession relation is an integral part of the predicated event to those in which the possession relation seems incidental to the predicated event. Nevertheless, the distribution of the external and internal possessor strategies across events is not random. There are two factors that appear to constrain the occurrence of these two strategies. The first factor, relevant to the use of the internal recipient strategy, is the relation of the fact of possession to the predicated event (Croft 1985):

$$\begin{array}{ccc} \textit{Argument of predicate} & \leftrightarrow & \textit{Modifier of possessum} \\ \text{Predication of possession} < \text{transfer of possession} < \text{creation} < \text{obtaining} \end{array}$$

In predication of possession, the sole component of the predication is the possession relation. In transfer of possession, the fact of possession changes, but it is still the primary component of the predication. In creation and obtaining, the end result is an entity that is transferred to the possession of the possessor, but the process itself involves more than just transfer of possession.

The second factor, relevant to the external possessor strategy, is the animacy of the possessor and the alienability of the possession relation (section 4.1.4) (Haspelmath 1999b:113):

$$\begin{array}{ccc} \textit{Argument of predicate} & \leftrightarrow & \textit{Modifier of possessum} \\ \text{patient-affected} < \text{dynamic non-affecting} < \text{stative} \end{array}$$

A possessor is more likely to be encoded as an argument phrase if the possessor is higher in animacy, and the possessum is more inalienable (body part < garment < other salient item; Haspelmath 1999b:113).

Finally, there are also combinations of strategies: the internal possessor strategy, the external possessor strategy, and also overt coding of a possessive relation on the verb with an applicative affix, used to signal the presence of an additional core argument (see section 9.3). For recipients and other possessors, Tzotzil uses all three strategies – external possessor, internal possessor, and applicative affix. In (102), the body part relation is expressed both as an argument (here with just the person index *i*- on *k'as* ‘break’), and as a modifier in a possession construction (here with just the person index *j*- on *k'ob* ‘hand’; Aissen 1980:95):

- (102) 1-i-k'as-b-at j-k'ob
 PF-1SG.ABS-break-APPL-PASS 1SG.POSS-hand
 ‘My hand was broken.’ [lit. ‘I was broken my hand’]

But the verb *k'as* also has overt coding, the applicative suffix *-b*, which signals that the Absolutive argument index indexes a possessor.

Example (103) is a Passive version of (102) with a transfer verb, in which the possessor is the intransitive subject, also expressed by the Absolutive index (Laughlin 1977:66; orthography and gloss from Aissen 1983:283):

- (103) č-i-?ak'-b-at hun զeb
 ASP-1SG.ABS-give-APPL-PASS one girl
 ‘I am being given a girl.’

Sahaptin uses an external possessor strategy for possessors, with the possessed item lacking either flagging or verb indexation, and an applicative affix (Rude 1999:419):

- (104) patá-naksklik-ay-ša paanáy wáwnkʷšaš
 3PL/3-twirl-APPL-IMPF 3SG.ACC body
 ‘They are twirling his body.’

In (104), the portmanteau indexation prefix *patá* and the pronoun *paandy* ‘him’ express the possessor as an argument of the predicate, and the predicate has the overt Applicative suffix *-ay*. But there is no possessive construction involving *wáwnkʷšaš* ‘body’.

English has a construction used for body-part possession in contact by impact events. It uses the external possessor strategy, with the possessum in a locative oblique phrase, but no overtly coded applicative verb form:

- (105) The bullet grazed **me** on **the shoulder**.

Chukchi uses the external possessor strategy optionally with recipients and obligatorily with other possessors. The noun denoting the possessum – *lelu* ‘moustache’ in (106), *qaa-* ‘reindeer’ in (107) – is incorporated into the verb (see section 8.4) (Haspelmath 1999:120, from Nedjalkov 1976:158, 199):

- (106) etləg-e ekək lelu-nimen-nin
 father-ERG son:ABS moustache-shave-3SG:PST
 ‘The father shaved the son’s moustache.’
- (107) etləg-e ekək qaa-nm-Enen
 father-ERG son:ABS reindeer-slaughter-3SG:PST
 ‘The father slaughtered a reindeer for the son.’

Examples (102)–(107) indicate that the expression of the possessum when an external possessor strategy is employed varies considerably (possession construction, simple referring phrase, noun incorporation). Further empirical research is required to understand better the range of strategies used for possession in combination with predication of an event, and the generalizations governing their distribution.

7.6 Appendix: Summary of Event Semantic Classes

This section summarizes the event classes that have been discussed in Chapters 6 and 7. These classes have been shown to be relevant for the encoding of the participants of the events – that is, the argument structure constructions used for these events. The event classes are listed very roughly from “most monovalent” to “most trivalent”; the term for the event class used in this textbook is followed by English examples, and the sections where their grammatical relevance is discussed. The classes in boldface are the two candidates for the prototypical monovalent event, the prototypical bivalent event, and the prototypical trivalent event:

Transitory states: *be sick, be tired* (section 6.3.3)

Change of state (inactive monovalent event prototype): *die, dry, get sick, melt* (section 6.3.3, section 7.2)

Bodily actions: *cough, sneeze, laugh* (section 6.3.3)

Properties: *be tall, be red, be wise* (section 6.3.3)

(Body) position: *sit, stand, lie* (section 6.3.3)

Motion events (active monovalent event prototype) (section 6.3.3, section 7.2, section 7.3.1)

Manner of motion events: *walk, run, fly, swim* (section 7.3.1)

Path of motion events: *enter, leave, fall* (section 7.3.1)

Change in (body) position: *sit (down), stand (up), lie (down)* (section 7.2)

Body care (grooming): *wash, shave, dress* (section 7.2)

Bodily motion: *wave, stretch* (section 7.2)

Agentive change of state (bivalent event prototype): *break* (section 6.2.1)

Application (putting): *put, spray, smear* (section 7.3.2)

Removal: *scrub, strip* (section 7.3.2)

Combining: *blend, mix* (section 7.3.2)

Killing/Injuring: *stab, kill* (section 7.3.2)

- Damage: *scratch, scrape* (section 7.3.2)
 Contact: *touch, tap*
 Contact by impact: *hit, kick* (section 7.3.2)
 Pursuit: *chase, follow* (section 7.3.3)
 Interaction: *manage, avoid* (section 7.3.3)
 Sensation: *ache, hurt* (section 7.4)
 Emotion: *frighten, amuse* (section 7.4)
 Cognition: *think, know* (section 7.4)
 Perception: *see, look at, taste* (section 7.4)
 Ingestion: *eat, drink* (section 7.4)
 Agentive Experience: *show, tell, explain, teach* (section 7.4)
 Agentive Ingestion: *feed, give (drink) to* (section 7.4)
Transfer (trivalent event prototype): *give, send, sell, lend* (section 7.5.1)

The second list represents semantic types of events that are distinguished by their force dynamic (causal) structure, rather than by their semantic domain. English examples are given along with the semantic classes that are most relevant to the distinction, and the section where they are discussed.

- Controlled (*walk*) vs. uncontrolled (*sneeze*): change of state, bodily actions, position, change of position, motion events (section 6.3.3)
- Causal (*melt* [something]) vs. noncausal (including spontaneous) (*melt*): change of state, change of position, motion events (section 6.3.4)
- Introverted (*wash*) vs. extroverted (*love*): bodily care, posture, motion, etc., events (section 7.2)
- Attending (*look at*) vs. affecting (*frighten*) vs. experience (*see*): experiential events (section 7.4)
- Manner (*hit*) vs. result (*break*): agentive change of state, contact by impact, application, removal, combining, killing/injuring (section 7.3.2)

Terms Defined in this Chapter

7.1 Introduction

7.2 Reflexives/Reciprocals/Middles: Between Monovalent and Bivalent Events

reflexive event (*sem*) / construction (*cxn*), reciprocal event (*sem*) / construction (*cxn*), chaining event (*sem*) / construction (*cxn*), collective event (*sem*) / construction (*cxn*), single role strategy (*str*), dual role strategy (*str*), specialized dual role strategy (*str*), biclausal reciprocal (*str*), monoclausal transitive reciprocal strategy (*str*), bodily motion event (*sem*) / verb (*cxn*), body care (*a.k.a. grooming*) event (*sem*) / verb (*cxn*), change in (body) position event (*sem*) / verb (*cxn*), motion event (*sem*) / verb (*cxn*), spontaneous event (*sem*) / verb (*cxn*), middle voice (*str*), introverted event (*sem*) / verb (*cxn*), extroverted event (*sem*) / verb (*cxn*)

7.3 Lower Transitivity: Less Prototypical Bivalent Events

7.3.1 Motion Events and the Talmy typology

motion event (*sem*), ground (*sem*), figure (*sem*), motion verb (*cxn*), path (of motion) event (*sem*) / verb (*cxn*), manner (of motion) event (*sem*) / verb (*cxn*), subject–oblique strategy (*str*), verb-framing strategy (*str*), satellite-framing strategy (*str*), satellite (*str*)

7.3.2 Contact and Material Verbs: Manner vs. Result Verbs

contact by impact event (*sem*) / verb (*cxn*), damage event (*sem*) / verb (*cxn*), application event (*sem*) / verb (*cxn*), removal event (*sem*) / verb (*cxn*), combining event (*sem*) / verb (*cxn*), killing/injuring event (*sem*) / verb (*cxn*), result event (*sem*) / verb (*cxn*), manner event (*sem*) / verb (*cxn*)

7.3.3 Other Less Prototypical Bivalent Events, and the Transitivity Hierarchy

Transitivity Hierarchy, pursuit event (*sem*) / verb (*cxn*), interaction event (*sem*) / verb (*cxn*)

7.4 Experiential Events: Perception, Cognition, Emotion, Sensation – and also Ingestion

experiential event (*sem*) / verb (*cxn*), perception event (*sem*) / verb (*cxn*), cognition event (*sem*) / verb (*cxn*), emotion event (*sem*) / verb (*cxn*), (bodily) sensation event (*sem*) / verb (*cxn*), experiencer (*sem*), stimulus (*sem*), expertum (*sem*), experiential construction (*cxn*), experiencer-oriented strategy (*str*), stimulus-oriented strategy (*str*), attending event (*sem*) / verb (*cxn*), affecting event (*sem*) / verb (*cxn*), experience event (*sem*) / verb (*cxn*), double-coding strategy (*str*), double-oblique strategy (*str*), causer (*sem*), ingestion event (*sem*) / verb (*cxn*)

7.5 The Ditransitive Construction: Trivalent Events, and Possession

7.5.1 Defining Ditransitive Argument Structure Constructions and Trivalent Events

transfer event (*sem*) / verb (*cxn*), ditransitive construction (*cxn*)

7.5.2 Major Alignment Strategies for Ditransitive Constructions

T role (*sem*), R role (*sem*), neutral (a.k.a. double object) (ditransitive) alignment (*str*), indirective alignment strategy (*str*), direct object category (*str*), indirect object category (*str*), secundative (ditransitive) alignment (*str*), primary object category (*str*), secondary object category (*str*)

7.5.3 The Indirect Object – Possessive Continuum

internal recipient strategy (*str*), external possessor strategy (*str*), internal possessor strategy (*str*)

7.6 Appendix: Summary of Event Semantic Classes

8 Argument Coding and Voice

Discourse Factors

8.1 Discourse and Frequency Factors in Voice Choice

8.1.1 The Basic Voice Construction and Nonbasic Voice Constructions

In Chapters 6–7, we described argument coding when the prototypical correlation of semantics and information packaging for participants in events is found. That is to say, we assumed that central participants in an event are more salient than peripheral participants, and, when there is more than one central participant, that the participant initiating the event is more salient than the endpoint of the action (the participant that undergoes a change of state). This is the motivation for the transitive construction, which serves as the prototypical construction for the expression of participants in subject, object, and oblique argument phrases, and the choice of the breaking event as the exemplar for the transitive construction.

We made this assumption in order to explore the diversity of event types in terms of how their participants are encoded, while holding constant the relative salience of the participants to each other. In particular, we examined what happens grammatically when it is not entirely obvious semantically which participants are central participants, or it is not entirely obvious semantically what the transmission of force relationships among the participants are. A significant amount of the diversity of argument structure constructions is due to different types of event structures and the different roles in the event that participants have.

We describe an argument structure construction that conforms to the prototypical parallel ranking of participant role and argument salience as a **basic voice construction (cxn)**. All of the presentation of different event types and their expression in argument structure constructions in Chapters 6–7 pertained to the basic voice constructions.

In this chapter, we turn to nonprototypical combinations of participant role and argument salience. We will call these **nonbasic voice constructions (cxn)**. In part, this requires us to take into consideration discourse factors – that is, factors other than the role of the participant in the event that influence the salience of referents (participants) in discourse.

In order to understand nonbasic voice constructions, we return to Table 6.2 from Chapter 6, repeated in slightly abridged form as Table 8.1.

Table 8.1 *Packaging of semantic roles in events as either subject, object, or oblique*

	core		
	subject	object	oblique
agent	<i>The protesters sprayed green paint on the sidewalk.</i>	—	<i>Green paint was sprayed on the sidewalk by the protesters.</i>
theme/ figure	<i>Green paint was sprayed on the sidewalk by the protesters.</i>	<i>The protesters sprayed green paint on the sidewalk.</i>	<i>The protesters sprayed the sidewalk with green paint.</i>
ground	<i>The sidewalk was sprayed with green paint by the protesters.</i>	<i>The protesters sprayed the sidewalk with green paint.</i>	<i>The protesters sprayed green paint on the sidewalk.</i>

Table 8.1 shows a number of clause constructions with different assignments of subject, object, and oblique arguments to the semantic roles of the event (agent, patient/theme, goal). The event illustrated is an example of an application event, in which an agent causes a theme or figure participant to move to a ground participant (see section 7.3.2). In section 6.1.1, we stated that the argument phrases along the diagonal from top left to bottom right represented the prototypical combinations of salience or topicality (information packaging) and participant role, defined by the causal chain – in this case, agent → figure → ground. That is, the agent is the most topical participant, the figure is the next most topical participant, and the ground is the least topical participant.

The basic voice construction is represented by the sentence repeated on this diagonal: *The protesters sprayed green paint on the sidewalk*. The three cells on the diagonal describe the expression of the three participant roles, from agent on the upper left to figure in the center and ground at the lower right, in descending order of topicality.

The first nonbasic voice is represented by the sentence *Green paint was sprayed on the sidewalk by the protesters*, found in the middle row of the first column and the top row of the last column. This sentence is characterized by the nonprototypical combination of high salience of the P argument, the figure (highlighted in the middle row of the first column), and the low salience of the A argument, the agent (highlighted in the top row of the last column). Although the expression of A as an object argument phrase (the top row of the middle column) is not found in English, it is found in some languages (see section 8.3). In both of these cells, the A argument remains lower in topicality than the P argument. This reversal of topicality of A and P is characteristic of the **passive-inverse construction (cxn)**, discussed in section 8.3. ‘Passive’ and ‘inverse’ voice constructions have been posited as distinct types. In section 8.3, we will show that there is no sharp division between passive and inverse voice constructions in either form or function; hence the term ‘passive-inverse voice’ for this construction.

Another nonbasic voice is represented by the sentence *The protesters sprayed the sidewalk with green paint*, found in the bottom row of the middle column and the middle row of the last column. This sentence is characterized by the nonprototypical combination of higher salience of a peripheral participant, the ground in this case (highlighted in the bottom row of the middle column) and the correspondingly lower salience of the P argument, the figure (highlighted in the middle row of the last column). This reversal of salience of P and a peripheral argument (abbreviated X below; cf. section 6.2.2) is characteristic of the **applicative construction (cxn)**, discussed in section 9.3.

The situation described in the middle row of the last column, where P has lower than its prototypical topicality, also occurs without the presence of a peripheral participant. An example of this is the contrast between *I shot the sheriff* and *I shot at the sheriff*, or *The dog chewed the bone* and *The dog chewed on the bone*. This shift in P salience, without a peripheral participant that increases its own topicality, is characteristic of the **antipassive construction (cxn)**, discussed in section 8.4.

Finally, the sentence *The sidewalk was sprayed with green paint by the protesters* in the bottom row of the first column, represents a combination of a passive-inverse voice and an applicative, leading to the peripheral participant having the highest topicality in the clause.

Table 8.2 generalizes from the English examples in Table 8.1 to the voice construction types illustrated by those examples. Note that any particular voice construction will have argument phrases from different rows; this is why the voice constructions occur in multiple rows. Also, for the applicative and antipassive voice, the central initiator role is most topical – that is, the subject argument.

Tables 8.1–8.2 illustrate how each participant is encoded according to its topicality in a clause. Table 8.3 shows for each voice construction how the participants, if they are present in the event, are expressed.

The passive-inverse and antipassive voice constructions are discussed together in this chapter because they involve changes in the topicality of P. In the passive-inverse voice, P is more topical than expected in the prototype constructions – in fact, more topical than A. In the antipassive voice, P is less topical than expected. The applicative construction is discussed in Chapter 9, because it involves the higher-than-expected topicality of a peripheral participant to the event. Chapter 9 also includes the discussion of another type of construction in which a peripheral participant has high topicality. This is the somewhat special case of events in which an external causer, generally an agent, is added to an event; the “base event” may or may not have an agent which is then acted on by the causer. This situation, expressed by a **causative construction (cxn)**, is similar to the applicative construction in that the applicative also sometimes introduces a peripheral participant, such as a beneficiary, that is not part of the base event.¹

¹ A recent article (Haspelmath 2021) proposes essentially the same analysis of these crosslinguistic patterns as found in Croft (2001, 2003) and Chapters 8–9 of this book.

Table 8.2 *Basic voice and nonbasic voices in terms of the relationship between salience/topicality and semantic role*

	core		
	subject – more topical	object – less topical	oblique – not topical
central-initiator (A)	BASIC VOICE <i>(also ANTIPASSIVE, APPLICATIVE)</i>	PASSIVE– INVERSE VOICE	PASSIVE–INVERSE VOICE
central-endpoint (P)	PASSIVE–INVERSE VOICE	BASIC VOICE	ANTIPASSIVE VOICE (also APPLICATIVE)
peripheral (X)	PASSIVE–INVERSE + APPLICATIVE APPLICATIVE		BASIC VOICE

Table 8.3 *Basic voice and nonbasic voices, in terms of expression of each participant in the event. X = oblique; () = possibly absent or unexpressed participant*

	core		
	subject – more topical	object – less topical	oblique – not topical
BASIC VOICE	A	(P)	(X)
PASSIVE–INVERSE VOICE	P	A	<i>or</i> A, (X)
ANTIPASSIVE VOICE	A	—	P, (X)
APPLICATIVE	A	X	(P)
PASSIVE–INVERSE + APPLICATIVE	X	—	(P), (A)

8.1.2 Discourse Motivation for Ergative and Accusative Alignment, and Preferred Argument Structure

Before turning to a more detailed description of nonbasic voice constructions and the strategies used by them, we briefly describe the discourse motivation for the ergative and accusative alignment strategies introduced in section 6.3.3.

In section 6.3.3, we saw that there was a semantic motivation for the ergative and accusative alignment strategies. The semantic motivation is due to the fact that the S participant roles are very diverse, ranging from roles in which the participant has a high degree of control over the event (the A-like roles) to roles in which the participant has a low degree of control, or no control, over the event (the P-like roles). In addition to the semantic motivation for the ergative and accusative alignment strategies, there are also discourse motivations for the alternative alignment strategies.

Accusative alignment is discourse motivated in that A and S participants are more topical: A and S are more likely to be actors, and more likely to be persistent – that is, referred to repeatedly across clauses. This motivation can be made a bit more precise using the theater metaphor for referents (see section 3.4.1): actors are more likely to be in A or S roles, while props are more likely to be in the P role.

Ergative alignment is discourse motivated in that S and P participants are more likely to be expressed with common noun phrases, while A is predominantly expressed by personal pronouns. More precisely, A is more likely to be higher in accessibility, expressed by unstressed pronouns, indexation, or zero anaphora (see section 3.3.2), than either P or S. This correlation of higher accessibility with A is called **Preferred Argument Structure** (DuBois 1987). Counts of the expression of A, S, and P as more vs. less accessible reveal regular patterns across languages. The Preferred Argument Structure pattern is illustrated in Table 8.4 for a text count in Huallaga Quechua.

The raw figures are given in the upper part of Table 8.4; expression of S, A, or P as an argument phrase is expression as a common noun phrase, since this language uses the indexation strategy for higher accessibility referents (see section 3.3.2). As is typical across languages, monovalent events expressed by intransitive verbs are more frequent in texts than bivalent events expressed by transitive verbs. In a sample of 446 clauses in English conversation, Thompson and Hopper (2001:32) found a stronger skewing toward monovalent events (73% vs. 27%). Also as is typical across languages, clauses rarely express more than one argument phrase – that is, an argument phrase referring to a lower-accessibility participant. There is a much lower percentage of A argument phrases (31% of transitive clauses) than S and P argument phrases (50% of intransitive clauses and 59% of transitive clauses, respectively). In other words, the A participant is generally higher in accessibility than either the S or P participants. An ergative alignment strategy singles out the higher-accessibility A role (the ergative argument phrase). Higher accessibility also correlates with higher on the Extended Animacy Hierarchy: pronominal reference outranks proper noun and common noun phrase reference on that hierarchy (section 3.1.2).

Both ergative and accusative alignment strategies recognize that one participant is generally higher in topicality/salience than the other, measured by accessibility as well as by the Extended Animacy Hierarchy. (The fact that more languages of the world are accusative with flagging and indexation suggests that the accusative discourse and semantic motivations are stronger than the ergative discourse and semantic motivations, however; cf. section 6.3.1.) Following the proposal in section 6.3.2, we will use ‘subject’ for the higher salience argument and ‘object’ for the less high salience argument; we also use ‘oblique’ for the less salient arguments expressed in noncore argument phrases.

Table 8.4 *Text counts of overtly expressed argument phrases in Huallaga Quechua (Weber 1989:16)*

Clause type	N	Percent	
Intransitive verb, no S phrase	280	27%	
Intransitive verb, S phrase	280	27%	
Transitive verb, no A or P phrases	137	13%	
Transitive verb, no A phrase, P phrase	203	19%	
Transitive verb, A phrase, no P phrase	66	6%	
Transitive verb, both A and P phrases	84	8%	
Total intransitive clauses	560	53%	
Total transitive clauses	490	47%	
Total clauses with no argument phrases	417	40%	
Total clauses with 1 argument phrase	686	65%	
Total clauses with 2 argument phrases	84	8%	
Total clauses with an S argument phrase	280	27%	50% of intransitive clauses
Total clauses with an A argument phrase	150	14%	31% of transitive clauses
Total clauses with a P argument phrase	287	27%	59% of transitive clauses
Total number of clauses in the text	1050	100%	

8.2 Information Packaging Strategies for Nonbasic Voice Constructions

In section 8.1.1, we defined nonbasic voice constructions as constructions that are used to express a nonprototypical combination of the discourse salience of referents and the participant roles those referents play in the event denoted by the predicate. However, the term ‘voice’ in traditional (Western) grammar is used to describe not just a construction but a particular strategy for that construction. In particular, ‘voice’ traditionally describes a strategy using verb forms different from those found in the basic voice, usually called the ‘active’ voice, and whatever nonbasic voice constructions the language has. For example, in the English Passive Construction, as in *It was eaten by wolves*, the verb form *eat-en* differs from the Active Construction Verb *eat* in *Wolves ate it*. In some non-‘active’ voices, the flagging and/or indexation of the argument phrases also differs from those in the ‘active’ voice. But these strategies – different verb forms, different encoding of arguments – do not cover the entire range of strategies for nonbasic voice constructions found across languages (cf. Givón 1981b). Since we are taking a broader crosslinguistic perspective, where quite different strategies are employed to express the function of a construction, we use the term ‘nonbasic voice construction’ to describe the function, and then describe the full range of strategies used to express that function. More precisely, there is a system of contrasting strategies for basic vs. nonbasic voice.

In section 2.4, we described a number of strategies used for nonprototypical combinations of propositional act functions (reference, predication,

modification) and semantic classes (object, property, and action concepts). The same general strategies that we found for the expression of nonprototypical combinations of semantic class and propositional act function also apply to the expression of nonbasic voice constructions. Some of these strategies would not be called ‘voice’ in traditional Western grammar.

In section 2.4, we described the semantic information packaging (IP) strategy, in which the structures found in the prototypical construction for the semantic class are simply recruited for the nonprototypical construction. In the case of basic vs. nonbasic voice constructions, the semantic IP strategy consists of recruiting the basic voice construction – specifically its verb form and the flagging and indexation of argument phrases – for the nonbasic construction. That is, the encoding of the A and P participant roles are the same as for their prototypical degree of topicality, and the verb is encoded in the same way as well.

For example, in Russian, the semantic IP strategy is used for the passive-inverse nonbasic voice construction – that is, the construction used when the participant in the P role has higher topicality than the participant in the A role (examples from Comrie 1989:78):

- (1) Tanja ubila Mašu.
Tanya:NOM killed Masha:ACC
'Tanya killed Masha.'
 - (2) [Valja ubila Natašu. A Mašu?]
[Valya killed Natasha. What about Masha?]
- Mašu ubila Tanja.
Masha:ACC killed Tanya:NOM
'Masha was killed by Tanya.'

In (2), the discourse context provided and the translation into an English Passive Construction indicate that Masha, the P participant, is more salient than Tanya, the A participant – contrary to the prototypical correlation of A and P roles to discourse salience. Yet reference to Masha is still encoded with the object (Accusative) flag, and Tanya with the subject (Nominative) flag, as would be expected from their P and A participant roles respectively in the (basic voice) transitive construction. However, the word order of the two argument phrases changes, giving an indication of the greater topicality of Masha. Finally, there is no difference in verb form between (1) and (2); both are *ubila*.

A semantic IP strategy is not usually described as a nonbasic voice construction, because the verb form does not change and nor does the encoding of the arguments. The only difference is in word order. In the Russian example (normal for colloquial Russian), word order is used to express salience of arguments, while flagging and indexation signal participant roles (who did what to whom), following the basic voice construction in (1).

At the other extreme, we find an overtly coded, actual information packaging strategy in Shona. In (3), the form of the argument phrases code relative argument

salience, while extra morphemes indicate the “mismatch” between argument salience and expected participant role (Hawkinson and Hyman 1974:153):

- (3) mwàná á-kà-nyór-ér-w~á tsámbà né mürümé kù mùkâdzí
 child he-PST-write-APPL-PASS letter by man to woman
 ‘(for) the child was written a letter, by the man, to the woman’

In (3), the child, who is the beneficiary of the writing action, is encoded as a subject – i.e., how one would expect the agent to be coded – based on the discourse salience of this referent. The structure of the rest of the clause has to adjust, so to speak: the verb is suffixed with Passive and Applicative morphemes, which signal that the subject is not the agent but the beneficiary; and the agent is expressed in an oblique argument phrase.

In this chapter, we will focus on actual rather than semantic IP strategies for voice constructions; that is, constructions more like the one in (3) than the one in (2). Actual IP strategies involve some morphosyntactic change, particularly in flagging and/or indexation of argument phrases. But, in fact, what is found across languages is actually a variety of hybrid information packaging strategies that render impossible any sharp division in structure between basic and nonbasic voice constructions. This fact has been observed by a number of typologists:

The analysis of the various constructions referred to in the literature as PASSIVE leads to the conclusion that there is not even one single property which all these constructions have in common. (Siewierska 1984a: 1)

I know of no structural features which can define inverse constructions and distinguish them from passives. (Thompson 1994:61)

[P]assives form a continuum with active sentences. (Shibatani 1985:821)

Morphological signs of antipassivization vary widely both within and across languages ... No single morphological diagnostic exists. (Polinsky 2017:311)

This chapter will briefly describe some of the hybrid strategies in order to give an indication of the full range of grammatical possibilities for nonbasic voice constructions (for more details, see Croft 2001:ch. 8; Vigus 2018).

8.3 Passive–Inverse Constructions: Constructions for More Salient Ps

A **passive–inverse voice construction (cxn)** is a specific type of nonbasic voice construction: it expresses a situation where the P referent has a higher discourse salience than the A referent. Passive–inverse voice, like other voice constructions, is generally thought to be best analyzed in terms of the **relative** salience of A and P (Cooreman 1987:76; Croft 2001:315–16; Givón 2001b:122). However, there is at least one widely used strategy, discussed at the end of this section, that suggests that **absolute** salience of P, independent of A’s relative salience, might be the most relevant information packaging property of this construction type.

‘Passive’ and ‘inverse’ constructions are often considered to be distinct constructions on structural grounds – that is, in terms of the strategies they employ. The supposed differences between passive and inverse as crosslinguistic concepts are illustrated here by the English Passive Construction and the Cree Inverse Construction, which are considered to be exemplars of the passive and the inverse, respectively.

The English Passive Construction in (4) is contrasted with the English Active Construction in (5):

- (4) The boy was taken to school (**by his parents**).
 (5) They took the boy to school.

In the English Passive Construction, the P argument is encoded like the A (and S) argument in the English Active Construction, namely as subject (recall that the basic or ‘active’ transitive construction provides the definitions of subject and object as comparative concepts). The A argument is expressed as an oblique. The form of the verb in the English Passive Construction differs from that of the English Active Construction, both in morphological form and in the presence of a copula.

The Cree (or, more generally, Algonquian) Inverse Construction serves as the exemplar of the “inverse” construction in this perspective. The Cree Inverse Construction in (6) is contrasted with the Cree Direct Construction (the name for the basic transitive construction) in (7) (Wolfart and Carroll 1981:69; glosses added):

- (6) ni-wāpam-ikw-wak
 1-see-INV-3PL
 ‘They see me.’
- (7) ni-wāpam-ā-wak
 1-see-DIR-3PL
 ‘I see them.’

As in the English Passive Construction, the P argument phrase in the Cree Inverse Construction is coded like the A argument phrase in the Cree Direct Construction, which is the subject in comparative terms (i.e. as a comparative concept; see section 6.3.2). Unlike in the English Passive Construction, the A argument phrase in the Cree Inverse Construction is coded like the P argument phrase in the Cree Direct Construction, which is the object in comparative terms. Both the English Passive Construction and the Cree Inverse Construction use distinct verb forms from the English Active Construction and Cree Direct Construction, respectively.

There is another difference between the English Passive Construction and the Cree Inverse Construction. The English Passive Construction is considered to be optional – that is, either the English Passive or Active Constructions can be used for most A and P referents. The Cree Inverse Construction, however, is in near-complementary distribution with the Cree Direct Construction, in terms of the person categories of A and P.

If A is ranked higher than P on the person ranking $2 < 1 < 3$, then the Direct Construction is used. If P is ranked higher than A on the same person ranking, then the Inverse Construction is used. If both A and P are third person, then either voice is used. However, in Cree there is a further distinction between third person argument phrases: Proximate (essentially, more topical) and Obviative (less topical). The choice of Direct or Inverse Construction is determined by the ranking Proximate $<$ Obviative; compare (8) and (9) (Wolfart and Carroll 1981:30–31; glosses added).

- (8) wāpam-ēw nāpēw-Ø sīsīp-a
see-DIR:3SG man-PRXT duck-OBV
'The man [PRXT] sees the duck.'
- (9) wāpam-ik nāpēw-a sīsīp-Ø
see-INV.3SG man-OBV duck-PRXT
'The man sees the duck [PRXT].'

The distribution of the Cree Direct and Inverse Constructions is given in Figure 8.1.

Figure 8.1, and similar figures later in this chapter, represents the person of the A participant in the rows, using the ranking $2 < 1 < 3$, and represents the person of the P participant in the columns, also using the ranking $2 < 1 < 3$. Thus, each cell in the table corresponds to a distinct combination of A and P. For example, the upper right cell is "2nd person A acting on 3rd person P," usually annotated as 2/3 or $2>3$ or $2\rightarrow 3$. The combinations of 1/1 and 2/2 do not apply since those would be reflexive (a first or second person acting on herself), hence the dashed line for these cells in the figure.

The solid line and the dotted line represent the semantic map for the Cree Direct and Inverse Constructions. Only the combinations of A person acting on P person included in the solid line can use the Direct Construction in Cree, and only the combinations of A person acting on P person included in the dotted line can use the Inverse Construction in Cree. The two constructions overlap in the 3/3 cell. This is because either the Direct or Inverse Construction can be used for 3/3 in Cree, depending on whether the A is in the Proximate form (Direct) or P is in the Proximate form (Inverse).

The functional distinction between Cree Direct and Inverse Constructions reflects the distinction of relative salience of A and P that is definitional for the difference between basic voice and passive-inverse voice constructions. The person ranking is part of the Extended Animacy Hierarchy described in section 3.1.2. The top part of the Extended Animacy Hierarchy is the ranking $1,2 < 3$; that is, first or second person is higher on the hierarchy than third person. First and second person are not ranked relative to each other, because, across languages, sometimes first outranks second; sometimes second outranks first (as in Cree); sometimes first and second are not ranked relative to each other; and sometimes 1/2 and 2/1 use special forms.

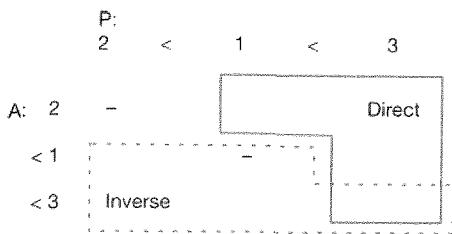


Figure 8.1 *Semantic map for Cree Direct and Inverse Constructions*

The Extended Animacy Hierarchy is ultimately motivated by salience: the most salient referents are the interlocutors (speaker and hearer), followed by other people, then animals, and, last, inanimate objects. The Cree voice contrast represents a conventionalization of semantic distinctions motivated by salience at the upper end of the Extended Animacy Hierarchy. The English Passive Construction is not conventionalized in this way but is sensitive to the same contrast of relative salience of A and P (Givón 1983).

Linguists who distinguish “passive” and “inverse” generally identify two differences in the two constructions. The first is a difference in morphosyntactic strategy, specifically in the coding of the A participant. In the English Passive, the A participant is expressed as an oblique, and in the Cree Inverse, the A participant is expressed as a core argument – indeed, it is co-expressed with P in the Cree Direct. The second is a difference in function – that is, the near-complementary distribution of the Cree Inverse and the Cree Direct Constructions in the conceptual space in Figure 8.1. In contrast, there is more extensive overlap of the English Passive and the English Active Constructions – but not entirely (see below). In fact, both the supposed differences in strategy and in function are differences of degree, not of kind.²

Many constructions use similar morphosyntactic strategies to the English Passive Construction, but have conventionalized an animacy- or person-based contrast between their basic and passive–inverse construction. For example, the Lummi Passive Construction expresses the A participant in an oblique argument phrase, but the choice between Lummi Active and Passive Constructions is governed by the Extended Animacy Hierarchy ranking: 1 < 2 < 3rd person pronoun < common noun. Compare the Lummi Active Construction in (10) to the Lummi Passive Construction in (11), and the distribution of the Lummi Active and Passive Constructions across the hierarchy in Figure 8.2 (Jelinek and Demers 1983:168; glosses added):

- (10) xči-t-sx^w cə swəy?qə?
 know-TR-2 the man
 ‘You know the man.’

² The following is a revised and abbreviated version of the analysis presented in Croft 2001:ch. 8.

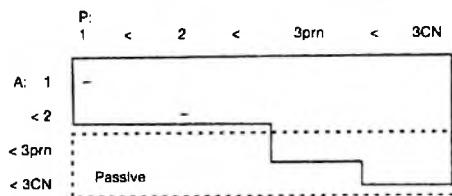


Figure 8.2 Semantic map for Lummi Active and Passive constructions

- (11) xči-t-ŋ-sx^w a cə sway?qə?
 know.TR-PASS-2 by the man
 'You are known by the man.'

More generally, the basic voice construction, if it is limited in distribution by grammatical convention, will include the $A \rightarrow P$ configuration in the upper right corner of representations like Figures 8.1 and 8.2. The nonbasic voice construction will favor the $A \rightarrow P$ configuration in the lower left corner of representations like Figures 8.1 and 8.2. Even the English Passive sounds odd in the $A \rightarrow P$ configuration in the lower left corner: *?Mary Summers was flunked by me* sounds odd (DeLancey 1981:638).

Turning to strategies used in passive-inverse constructions, one finds a wide range of variation in the expression of not just the A participant, whose expression differs in the exemplar English Passive Construction and the exemplar Cree Inverse Construction, but also in the expression of the P participant. Many of the strategies found are hybrid IP strategies. As we will see below, sometimes A is co-expressed with the A in the basic voice (as subject), sometimes not; and sometimes P is co-expressed with P in the basic voice (as object), sometimes not; and in some cases, there is a mix where one of A or P is co-expressed with A or P in the basic voice, and the other is not. Finally, one frequently finds mixed expression of P or A depending on the type of coding. That is, flagging, indexation, and word order for P or A may mix subject, object, and/or oblique forms in comparison to the basic voice transitive construction. In other words, there is a very wide range of variation of strategies in passive-inverse constructions, leading to the conclusion that one cannot distinguish one from the other.

We saw that in both the English Passive and the Cree Inverse Constructions, P is expressed like the A participant (subject) in the basic transitive construction. This can be considered a different type of co-expression strategy from the ones referred to in the preceding paragraph: passive-inverse voice P form = basic voice A form. This is an example of the actual IP strategy for P : express P in its actual degree of salience, i.e. highest salience and hence subject.

In other passive-inverse constructions, however, P is expressed like the object participant in the basic transitive construction – that is, in the same way as in the basic transitive construction. This is the semantic IP strategy for P : express

P according to prototypical salience of the P semantic role, namely object. The semantic IP strategy for P is used in the Welsh Pronominal Passive Construction (Comrie 1977:55):

- (12) fe'i lladdodd draig
PTCL 'him' killed.ACT dragon
'A dragon killed him.'

- (13) fe'i lladdwyd gan ddraig
PTCL 'him' killed.PASS by dragon
'He was killed by a dragon.'

A pronominal P, such as 'he' in (13), retains its Object flag, while A is expressed as an oblique, i.e. unlike the A in the Active Construction in (12). So the Welsh Pronominal Passive Construction is an example of a hybrid IP strategy: it combines the semantic IP strategy for expressing A with the actual IP strategy for expressing P.

In a significant number of languages, P in the passive-inverse construction is expressed with a unique form. In the Upriver Halkomelem Active construction in (14), both A and P are indexed, and the word order is V-A-P (Galloway 1993:425; gloss from Croft 2001:293):

- (14) təs-l-əx^{w-əs} θúλ'á tə swiyəqə
bump_into-ACCID-3SG.OBJ-3SG.SBJ she ART man
'She bumped into the man'

In the Passive construction in (15), the word order has changed to V-P-A. The verb does not index A at all, and indexes P with a special set of affixes (Galloway 1993:426, gloss from Croft 2001:294):

- (15) təs-l-əm θúλ'á tə swiyəqə
bump_into-ACCID-3SG.PASS she ART man
'She was bumped into by the man'

This strategy, the **special P strategy (str)**, is an encoding strategy: it has grammaticalized to the point that it cannot be identified as the recruitment of any other construction.

The functions of the Upriver Halkomelem Active and Passive Constructions are constrained as in Figure 8.3 (combinations represented by ‘—’ in Figure 8.3 are expressed by the Reflexive). Although both Active and Passive Constructions are used for most combinations of A and P, the Passive must be used if 3/2, or if P is a 3rd Person Pronoun, and the Active must be used if P is 1st Person Plural (Galloway 1993:187; cf. Croft 2001:294). Again, the basic voice construction (Active) includes the combination in the upper right cell, and the nonbasic voice construction (Passive–Inverse) includes the combination in the lower left cell.

We saw that in the English Passive Construction, A is expressed in an oblique phrase, but in the Cree Inverse Construction, A is expressed with an object

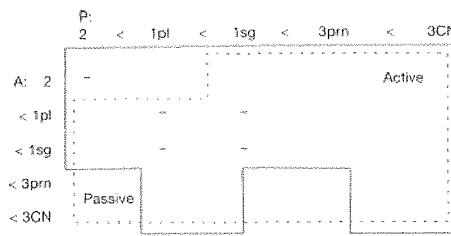


Figure 8.3 *Semantic map for Upriver Halkomelem Active and Passive constructions*

index. In many languages, A is prohibited in the passive-inverse construction. In other languages, A is also expressed as an oblique; see Welsh and Upriver Halkomelem above. In still other languages, A is expressed like an object, as with the Cree Inverse. In the Upriver Halkomelem Passive Construction, P is expressed like A in the Upper Halkomelem Active Construction with respect to word order, and A is expressed like P: the word order of A and P is reversed in the Passive Construction in comparison to the Active Construction. But P is expressed uniquely – neither like A nor like P in the Active Construction – with respect to indexation.

Another language that expresses A like P in the basic transitive construction is Tagalog. In Tagalog, core arguments are expressed in two forms: the Topic Form (also called Focus), or the Complement Form (Schachter and Otanes 1972:74–81). Either A (also called Actor) or P (also called Goal) may be in the Topic Form; the participant that is not in the Topic Form is in the Complement Form. The verb form is overtly coded with a distinct affix depending on which participant is the Topic/Focus (Schachter and Otanes 1972:78; glosses added; AT = A Topic, PT = P Topic, CMP = Complement flagging):

- (16) nag-hugas ng pinggan ang bata
 AT-wash CMP plate TOP child
 ‘The child washed a plate.’
- (17) h<in>ugas-an ng bata ang pinggan
 <PT>wash-PT CMP child TOP plate
 ‘The child washed the plate.’

The participant expressed as Topic is always interpreted as definite. The participant expressed as Complement (i.e. not Topic) is usually interpreted as indefinite if it is the P participant (Schachter and Otanes 1972:76); as example (17) indicates, the A participant that is not a Topic may be definite.

The voice system of Tagalog, and of other Philippine languages and also other Austronesian languages that have similar constructions, is considered to be quite different from the voice systems in other languages. However, the Tagalog (and

(similar) voice systems can be interpreted in the context of the analysis of basic and nonbasic voice constructions presented here. The Actor Topic Construction in (16) fits the description of a basic voice construction. The A participant is interpreted as definite, and the P participant as indefinite. This definiteness asymmetry correlates with the salience/topicality ranking of A and P in the basic voice construction. In the nonbasic voice construction in (17), P is definite, hence of higher salience. P in (17) is expressed like A in (16): it takes the Topic Form, and its position is clause-final. A in (17) is expressed like P in (16): it takes the Complement Form, and its position is nonfinal (Tagalog is a verb-initial language).

The constraints vary from one Philippine language to another, and the system differs in Austronesian languages outside the Philippines.³ However, most of these voice systems share the properties of: distinct verb forms depending on which participant is the topic; one argument phrase form singled out for Topic status, the other being in a non-Topic Form; and constraints that suggest that topicality (the function) is correlated with use of the Topic Form. In a number of Austronesian languages, the Patient-Topic construction has increased in frequency to become the basic voice construction in the language, leading to an ergative alignment strategy since the Patient Topic form is co-expressed with the S form in the intransitive construction (see Croft 2001:302–5, and references cited therein).

There is another strategy for expressing differences in the animacy/salience of A vs. P that is not normally called “voice.” Instead, it uses a contrast between zero and overt coding of both A and P. This is the strategy described as **animacy-based split ergativity (str)**. In Dyirbal and some other Australian languages, not only is a higher animacy P overtly coded with an Accusative Case suffix, a lower animacy A is overtly coded with an Ergative Case suffix (Dixon 1972:73, 60; glosses added):

- (18) *ŋada bayi yara balgan*
 1SG.NOM ART.ABS man[ABS] hit
 ‘I hit the man.’

- (19) *ŋayguna baŋgul yara-ŋgu balgan*
 1SG:ACC ART:ERG man-ERG hit
 ‘[The/a] man is hitting me.’

A similar pattern is found in Cashinawa: a higher animacy P is coded with an Accusative suffix *-a*, and a lower animacy A is coded with the Ergative base modification of nasalization. In both languages, S is expressed by zero. This means that S is co-expressed with higher animacy A and with lower animacy P. The distribution of Ergative and Accusative Case suffixes, and

³ In Tagalog, oblique arguments may also occur in the Topic Form; however, their non-Topic Form is distinct from the Complement Form, reflecting their oblique function.

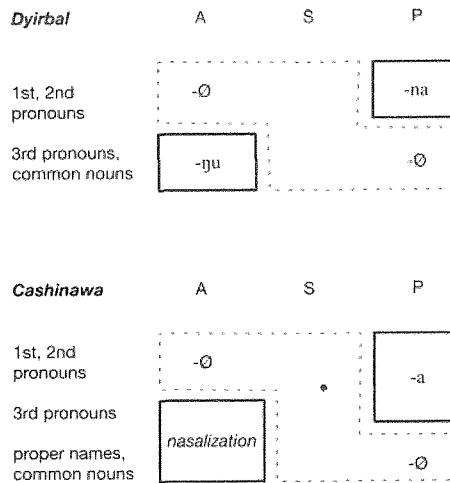


Figure 8.4 *Semantic maps of Dyirbal and Cashinawa split ergativity as pronoun/noun paradigms*

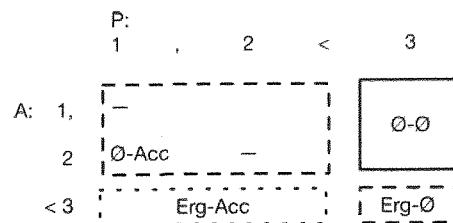


Figure 8.5 *Semantic map of Dyirbal case constructions as voice constructions*

zero coding, in Dyirbal and in Cashinawa is given in Figure 8.4. Figure 8.4 differs from Figures 8.1–8.3. It simply gives the morphological paradigms in each row for the expression of A, S, and P arguments for 1st, 2nd, and 3rd person pronouns, proper nouns (for Cashinawa), and common nouns. The contrast in forms in the rows gives rise to the so-called “split ergative” pattern – 1st/2nd pronouns have an accusative alignment, common nouns have an ergative alignment, and Cashinawa 3rd pronouns have a tripartite alignment (see section 6.3.1): nasalization for A, zero coding for S, and -a for P.

Figure 8.5 presents the Dyirbal Core Argument Phrase Flagging Construction as an example of basic voice (that is, transitive) vs. nonbasic voice constructions, using the same representation as in Figures 8.1–8.3. In Figure 8.5, the solid line includes the combinations of A and P where both are expressed by zero. This is the fully zero-coded “voice” construction, and corresponds to the basic voice construction. As with the other voice constructions described above, the basic voice construction in Dyirbal includes the upper right cell, representing a higher animacy A acting on a lower animacy P. The dotted line includes the

combinations of A and P where both are expressed by overt case forms (Ergative and Accusative). This is the most overtly coded construction, and corresponds to the nonbasic voice constructions described above. Like the other nonbasic constructions, it includes the lower left cell, representing lower animacy A acting on higher animacy P.

The dashed line in Figure 8.5 includes the combinations of A and P where one is expressed by zero and the other is expressed by an overt flag. These are also nonbasic voice constructions, but less nonbasic than the construction including the lower left cell, which has two overt morphemes encoding the A and P participants. Another characteristic of nonbasic voice constructions is that there is sometimes more than one of them. If so, the “in between” construction – the one including cells in between the upper right and lower left cells – is usually also “in between” with respect to how many morphemes are used to code the combination of A acting on P. The combinations where an “in between” nonbasic voice construction is found are those where only P has increased salience while A retains high salience, and those where only A has lower salience while P is not increased in salience.

The first of these two cases, where only P has increased salience, is frequently coded by an additional morpheme across languages. In many languages, a distinct strategy is used for Ps whose referents are high on the Extended Animacy Hierarchy and/or on the definiteness scale (section 3.4.1); Comrie (1979) proposes that the combination of animacy and definiteness is a “natural class.” The strategy is overt flagging of P, where P in the basic transitive construction has a zero flag.

For example, Hindi requires overt P marking for animate Ps (including pronouns) and prohibits it for indefinite inanimate Ps (Comrie 1979:17, from McGregor 1972:48):

- (20) aurat bacce **ko** bulā rahī hai
woman child ACC calling PROG be
'The woman is calling the/a child.'

- (21) patr likhie
letters write:POL
'Write letters, please.'

In Spanish, the Personal a Form is used if the P referent is human and definite or specific indefinite (Comrie 1989:134):

- (22) El director busca...
'The director is looking for...' el carro. ['car'; inanimate, but definite]
 al empleado. ['clerk'; human, definite]
 a un empleado. [human, specific indefinite]
 un empleado. [human, nonspecific indefinite]

This strategy – a distinct, overt flag for higher animacy / higher information status Ps – has come to be called **differential object marking (DOM) (str)**. The higher animacy / higher information status referent is overtly coded, often with an etymologically oblique case marking, such as dative or locative, while the lower animacy / lower information status referent retains the zero coding that is thought of as characteristic of a core argument phrase.

Differential object marking does not appear to fit in well with passive-inverse constructions as defined in this section. The P participant is higher in salience, like the P in the passive-inverse construction; high animacy / high information status is correlated with salience. Hence, the strategy fits the definition of the passive-inverse construction. However, the A participant remains the subject, and probably is not as reduced in salience as in the passive-inverse constructions we have looked at so far.

Differential object marking involves the flagging of P. More salient Ps – those higher in animacy and/or definiteness – may be expressed with overt flags, often etymologically derived, or even synchronically recruited from oblique flags. Indexation is different (Croft 1988). In contrast to differential object marking, a more salient P is more likely to trigger indexation, which is generally an indicator of core argument status. For example, in Amharic, a definite P is indexed, while a specific indefinite P is not (Givón 1976:161–62):

- (23) kassa borsa-w-in wässädä-w
 Kassa wallet-the-OBJ took.he-it
 'Kassa took the wallet.' [definite]
- (24) kassa borsa wässädä
 Kassa wallet took.he
 'Kassa took a wallet.' [specific indefinite]

This pattern for indexation appears to hold for the definiteness scale, but not so much for the Extended Animacy Hierarchy (Siewierska 2004:148–59). Presumably this pattern, in which more definite Ps may be encoded with an overt flag but may also be indexed, is due to the fact that indexation forms are historically derived from personal pronouns (section 3.3.2), which encode higher accessibility referents. However, the occurrence of number indexation of both A and P follows the Extended Animacy Hierarchy, just like number inflection of nouns does (section 3.1.2; Corbett 2000:55–66).

We conclude this section by describing another type of strategy for expressing a higher salience P participant. This is a **complex predicate strategy (str)**, in which two predicate forms are used to express the passive-inverse construction. One predicate expresses the basic event, and the other predicate expresses the semantic undergoer relation between the initial participant and the basic event. This strategy is found in some Southeast Asian languages including Vietnamese (Siewierska 1984a:149, 151):

- (25) Nam bị Nga đánh
 Nam suffer Nga beat
 'Nam was beaten by Nga.' [negative effect on Nam]

- (26) Kim được John khen
 Kim receive John compliment
 'Kim was complimented by John.' [positive effect on Kim]

In (25)–(26), a predicate that lexicalizes subject affectedness is employed to express a non-A participant role, specifically a P participant role, with a subject argument phrase, but without expressing the A as an oblique argument phrase. Siewierska concludes that (25)–(26) are not complex sentences where 'Nga beat' and 'John compliment' are some type of subordinate clause. Instead, the subject-affected forms translated as 'suffer' or 'receive' signal that the preceding argument phrase, in the typical subject position for Vietnamese, is actually the P participant rather than the A participant (Siewierska 1984a:151–54).

In the languages where this strategy has been described (besides Vietnamese, there is also Thai, Burmese, and Mandarin), there is a constraint that the P participant is adversely affected by the event, as in (25). Vietnamese is unusual in also having a complex predicate expressing a positive affect on P (Siewierska 1984a:149–51). Also, in Mandarin, the comparable construction, using *bèi*, is restricted to events expressed by what are called 'disposal' predicates in Sinitic studies. Disposal predicates, roughly, describe events with a direct effect on the P argument, brought about by its manipulation by A (Li and Thompson 1981:501–3, and see 466–80 for a discussion of disposal predicates). These are events that are close to the prototype event for the transitive construction. It is actually a common constraint on passive–inverse constructions that they are possible only with predicates describing events with a more direct effect on P (though exactly which predicates are excluded from passive constructions varies across languages; Siewierska 1984a:188–97).

8.4 Antipassive Constructions: Constructions for Less Salient Ps (including Noun Incorporation)

In some discourse contexts, P participant roles are less salient arguments than they normally are, and various strategies are found for expressing P participants as something other than a core argument phrase. We will define a construction that is used for a P that is less salient than it usually is as an **antipassive construction (cxn)**, following Vigus (2018), whose analysis is followed here.

Our use of this term is broader than many uses of the term 'antipassive construction,' because the term 'antipassive construction' is typically used for a

subset of strategies that perform the function of expressing a less salient P and related functions. In particular, the term ‘antipassive’ is often restricted to the constructions in which the verb is overtly coded and hence distinct from the verb form used in the prototypical transitive construction. An example of the overtly coded verbal strategy for the antipassive is Kuku Yalanji (Patz 2002:152; the overt coding *-ji* is an intransitivizing suffix):

- (27) nyulu dingkar-angka minya-Ø nuka-ny
3SG.NOM man-ERG meat-ABS eat-PST
'The man ate meat.'
- (28) nyulu dingkar-Ø minya-nга muka-ji-ny
3SG.NOM man-ABS meat-LOC eat-ANTP-PST
'The man had a good feed of meat (he wasted nothing).'

Example (27) illustrates the basic voice (transitive) construction in Kuku Yalanji, with the A argument coded with an ergative flag and the P argument as a zero-coded absolute form. Example (28) illustrates the antipassive construction, expressed with the overt verbal suffix *-ji*. In addition, the A argument is a zero-coded absolute form, and the P argument is expressed with an oblique (specifically, Locative) flag.

As was noted in section 8.2, there are no reliable morphosyntactic strategies that could define an ‘antipassive strategy.’ The only strategy we will not discuss in this section is the recruitment of the basic transitive construction for less salient Ps – that is, when there is no morphosyntactic distinction whatsoever between the language-specific construction used for less salient Ps and the basic transitive construction. Recruitment of the transitive (basic voice) construction for lower salience Ps is an example of the semantic IP strategy (section 2.4).

Since the ‘antipassive’ construction has been defined in terms of certain strategies and not always by function, multiple functions have been described for the ‘antipassive.’ The most common function described is the one assumed in this section: expression of less salient Ps. (This function is the basis for Givón’s definition of antipassive; see Givón 2001b:94.) However, this is not the only function that ‘antipassive’ construction strategies are used for. In this section, we will compare the common functions and argue, following Vigus, that the less salient P function is the most suitable functional definition for the antipassive construction.

The functions traditionally associated with the antipassive construction are also found with verb forms that are not distinct from the verb form in the basic transitive construction. Under this definition of the antipassive construction, the English constructions in both (29b) and (30b) are examples of the antipassive construction:

- (29) a. She ate the spaghetti.
b. She ate.

- (30) a. The coyote chewed the deer bone.
 b. The coyote chewed on the deer bone.

The English examples in (29a–b) are considered an example of the Unspecified Object Alternation (Levin 1993:33). That is, the English Verb can occur in one argument structure construction (the [a] example) or alternatively in the other (the [b] example).

Example (29b) differs morphosyntactically from the basic transitive construction (29a) only in the fact that the object argument phrase is absent. It also differs functionally from (29a) in that the referent of the unexpressed object argument phrase denotes an “unspecified” – or, more precisely, a specific indefinite but nonsalient – object of the semantic type that is characteristic of that participant role of the event denoted by the verb – in (29b), a meal or some type of food. The absent object phrase in example (29b) is also called indefinite null instantiation (INI; Fillmore 1986; Lambrecht and Lemoine 2005; Lyngfelt 2012), since the unexpressed P argument is necessarily interpreted as indefinite (no specification of the meal, nor does it refer to a previously mentioned meal).

The INI / “unspecified” P is an example of a less individuated P referent. Low individuation is a result of indefinite, nonspecific, or generic reference (see section 3.6); and a nonsingular, especially indeterminate, set of the participants (Hopper and Thompson 1980:253). Low individuation is considered to be correlated with low salience, since a less individuated referent cannot be easily attended to. Low individuation is more likely to be described in reference grammars than the more direct measurement of low salience in the analysis of referential distance and topic persistence in texts (see section 2.2.2). Higher referent salience, in contrast, is associated with a specific (not generic), definite, ideally single, individual. Thus, the less individuated example (29b) fits the functional definition of antipassive as expressing a less salient P.

The English examples in (30a–b) are considered an example of the Conative Alternation (Levin 1993:41–42): Example (30b) differs morphosyntactically from the basic transitive construction in (29a) in that the P argument is expressed in an oblique argument phrase with the flag *on* (also *at* in other verbs), rather than in a zero-coded object argument phrase. The oblique P strategy, described below, is a strategy commonly found in antipassive constructions with the less individuated P function. Example (30b) also differs functionally from (30a) in that the referent of the oblique argument phrase is less affected by the action expressed by the verb. Lower affectedness of P is somewhat different from the low salience information packaging function of the antipassive. Lower affectedness of P is also considered to be associated with a lower degree of individuation of a participant. However, even a highly individuated P may be only partially affected.

The function of antipassive constructions is generally considered to include not only low salience (less individuated) P but also less affected P. This assumption has been made because of the similarity of morphosyntactic strategies between

constructions expressing a less individuated P and constructions expressing a less affected P. A third function is also included with antipassives: an atelic process – that is, an action that is not completed (see section 6.2.1). An atelic process is associated with a less affected P: if P does not completely undergo the change of state denoted by the verb, then the process is not completed, and hence is atelic. However, there are other ways in which an event may be atelic, including monovalent events which lack a P participant, and hence other strategies to express an atelic event – in particular, the verbal category of aspect. For this reason, Vigus treats lack of telicity as an indirectly associated property of antipassives.

Vigus (2018) finds a full range of argument phrase strategies for the expression of the P argument: omitted (often obligatorily); incorporated; as a zero-coded argument phrase (a rare strategy); and as an oblique argument phrase. This range of expression of the P argument is combined with variation in how the verb is encoded: either a distinct, usually overtly coded, verb form, or a nondistinct verb form (that is, identical to the verb in the basic transitive construction).

Vigus discovered a partial separation of strategies between the two most common functions associated with the antipassive construction. The P omission and incorporation strategies are found only with the **less individuated P (LIP) (sem)** function, indicative of a low salience P. For example, the English Unspecified Object Alternation is a LIP construction employing the P omission strategy, combined with a nondistinct verb form. In contrast, the oblique P strategy in combination with the nondistinct verb strategy is found only with the **less affected P (LAP) (sem)** function. For example, the English Conative Alteration is a LAP construction employing the oblique P strategy, combined with a nondistinct verb form. Only in the case of the distinct verb strategy combined with the oblique P strategy, or the rare zero-coded P strategy, are both functions found. Table 8.5 shows the range of strategies for encoding P and the verb form, and which ones are used for LIP function and which are used for LAP function (Vigus 2018:356). Each strategy, and the functions they are used for, will be described in the rest of this section.

The most common strategy for the less individuated P function is a distinct verb form and an omitted P. Example (32) from Cilubà illustrates the **omitted P strategy (str)**, contrasted with the basic transitive construction in (31) (Vigus 2018:359, from Bostoen, Dom, and Segerer 2015:734; FV = final vowel):

- | | |
|------|--|
| (31) | mù-sàlaayì ù-di ù-lu-a mu-lwishi |
| | CL1-soldier CL1-be CL1-fight-FV CL1-enemy |
| | 'the soldier who is fighting the enemy' |
| (32) | mù-sàlaayì ù-di ù-lu-angan-a mu |
| | CL1-soldier CL1-be CL1-fight-ANTP-FV LOC.CL18 |
| | ci-alu ci-à m-vità |
| | CL7-meeting_place CL1-CONN CL1-war |
| | 'the soldier who is fighting (someone) on the battlefield' |

Table 8.5 *Distribution of antipassive strategies by function (LIP = less individuated P, LAP = less affected P; adapted from Vigus 2018:356:fig. 1)*

	Verb same as basic voice form	Verb distinct from basic voice form
P omission	LIP	LIP
P incorporated	LIP	LIP
P zero coded	LIP	LIP, LAP
P oblique	LAP	LIP, LAP

The second strategy for encoding P is to incorporate P. **Noun incorporation (str)** (Mithun 1984a) is a strategy in which an object concept word is compounded with the predicated action word. Noun incorporation is also generally taken to include juxtaposition of an uninflected noun to the predicate.

Mithun describes four distinct functions, Types I–IV, for which the noun incorporation is used. The use of noun incorporation for one function in a language implies the use of noun incorporation for the next lowest numbered function in the language (that is: noun incorporation with the Type IV function implies use with the Type III function, and so on). Noun incorporation also occurs with some S participants in some languages. The commonest functions of noun incorporation, Types I–II, represent the antipassive function. However, we will describe in this section all four of the functions of noun incorporation described by Mithun.

In Type I noun incorporation, incorporation of the noun leads to an intransitive construction, with only one salient participant. Mithun describes Type I as referring to an ‘institutionalized activity’ (Mithun 1984a:848). Type I noun incorporation results in an intransitive verb focusing on the activity rather than the (incorporated) participant and the effect of the activity on it (Mithun 1984a:848). The incorporated noun ‘no longer refers to a specific entity’ (Mithun 1984a:856). An example of Type I noun incorporation (using juxtaposition) in Yele is given in (34) (Vigus 2018:361, from Henderson 1995:26), compared to the basic transitive construction in (33) (Henderson 1995:27; CLS = close to speaker, MOT = motion):

- (33) yi mbwaa cha a vy:êmî
their water CONT.IMP.2SG.SBJ.CLS CLS filling
'Fetch their water.'

- (34) nî-mo mbwaa vy:êmî
CONT.IND.IMM_FUT.1SG.SBJ-MOT water filling
'I'm going water-fetching.'

Type I noun incorporation is found in every language that has any noun incorporation, even in English, as in *He is off mountain-climbing* (Mithun 1984a:848). Type I noun incorporation is functionally virtually identical to indefinite null instantiation. INI is used to describe ‘a kind of activity routinely engaged in by a certain group of people’ (Lambrecht and Lemoine 2005:22). Type I noun incorporation specifically resembles what Lambrecht and Lemoine call ‘subtype INI,’ where the semantic type of the P participant is more narrowly specified than the verb meaning might imply, as in *He's drinking again* referring to drinking alcohol. This is, of course, due to the fact that the incorporated noun specifies the subtype.

In Type II noun incorporation, incorporation of the P participant referent expression is accompanied by expression of another participant as the object of the verb. Many of the examples of Type II noun incorporation in Mithun’s article involve a P participant that is a body part and the person possessing the body part, as in the Tupinambá example in (35) (Mithun 1984a:857, from an unpublished manuscript by Aryon Rodrigues):

- (35) a-s-oβá-éy
 1sg-3sg-face-wash
 ‘I washed his face.’

Type II noun incorporation thus resembles applicative constructions, in which a peripheral participant has higher salience and is therefore encoded as a core argument phrase (see section 9.3). In the case of body parts, the possessor of the body part is more salient, being human, and the body part itself is less salient. Type II noun incorporation is also used in other contexts in which the P argument is also less individuated, as in example (36) from Yucatec Mayan (Mithun 1984a:858, from Bricker 1978):

- (36) k-in-č'ak-če'-t-ik in-kool
 INC-1SG-chop-tree-TR-IMPF 1SG.POSS-cornfield
 ‘I clear my cornfield.’ [lit. ‘I tree-chop my cornfield’]

Type III noun incorporation functions to track reference to a participant that is first introduced as an independent argument phrase. It is illustrated in (37) from Huauhtla Nahuatl (Merlan 1976:185; cf. Mithun 1984a:860–61):

- (37) A: aske:man ti-'-kwa nakatl
 never 2SG-3SG-eat meat
 ‘You never eat meat.’
- B: na' ipanima ni-naka-kwa
 1SG always 1SG-meat-eat
 ‘I eat it (meat) all the time.’

Type III noun incorporation does not reduce the salience of the participant expressed by the incorporated noun as much as Types I and II do. Nevertheless, Type III noun incorporation, like the other types of noun incorporation, is used to track reference to inanimate, or at least nonhuman, participants – that is, participants that are props rather than actors, in terms of the theater metaphor (see section 3.4.1). Hence, the referent expressed by the incorporated noun is not as salient as a human actor.

Finally, in Type IV noun incorporation, the participant may be expressed by an external argument phrase as well as by the incorporated noun. An example of Type IV noun incorporation from Gunwinggu is given in (38) (Oates 1964:104; cf. Mithun 1984a:867), where *dulg-* ‘tree’ is incorporated and *mangaralaljmayn* ‘cashew nut’ is the external argument phrase:

- (38) bene-dulg-naŋ mangaralaljmayn
 3DU-tree-saw cashew_nut
 ‘They saw a cashew tree.’

In Type IV noun incorporation, the incorporated noun has effectively grammaticalized into indexation (see sections 3.3.2, 4.4.1). In summary, only Type I noun incorporation, and some uses of Type II noun incorporation, are functionally equivalent to the antipassive function. However, these are the most common functions of the noun incorporation strategy.

The other common P encoding strategy for the antipassive functions (both LIP and LAP) is the **oblique P strategy (str)**, also with either the same verb form as in the basic transitive construction or with a distinct verb form. As noted above, Vigus finds that only the oblique P strategy combined with the distinct verb strategy allows either the LIP function or the LAP function. The oblique P / distinct verb strategy for the LIP function is found in (40) from West Greenlandic, which can be compared to the basic transitive construction in (39) (Fortescue 1984:86; cf. Vigus 2018:367–68; the antipassive suffix is called Half-Transitive by Fortescue, glossed HALF_TR). Note that the basic transitive construction is used when the P participant is definite, but the antipassive construction is used when the P participant is indefinite.

- (39) inuit tuqup-pai
 people kill-3SG/3PL.IND
 ‘He killed the people.’
- (40) inun-nik tuqut-si-vuq
 people-INS kill-HALF_TR-3SG.IND
 ‘He killed people.’

The oblique P / distinct verb strategy for the LAP function is illustrated in (42) from Chamorro, compared to the basic transitive construction in (41) (Cooreman 1988:578; cf. Vigus 2018:368–69):

- (41) un-patek i ga'lagu
 ERG.2SG-kick the dog
 'You kicked the dog.'
- (42) mamatek hao gi ga'lago
 ANTP-kick 2SG.ABS LOC dog
 'You kicked at the dog.'

Although the LIP and LAP functions across languages both use the oblique P / distinct verb combination of strategies, no language in Vigus' sample using this combination of strategies is ambiguous between LIP and LAP function. The construction in question is either LIP or LAP. Only two languages in Vigus' sample have an antipassive construction with both LIP and LAP functions: Embaloh and (possibly) Oksapmin. Both are instances of the rare zero-coded P strategy, where the antipassive construction uses a distinct verb form and the P is zero-coded (in some cases, a zero-coded P argument phrase means that the P argument phrase lacks flagging and/or indexation, like a P argument phrase in the basic transitive construction).

The near-complete separation of the less-individuated P function and the less-affected P function strongly suggests that the two functions actually define different constructions. The low-individuated P function is the defining function for what Vigus calls the antipassive construction. The strategies exclusively associated with the less-individuated P function, incorporation or omission, are those that reduce or eliminate independent expression of P. The low-affected P function is simply another instance of a less prototypical bivalent event using an oblique phrase for the second participant, of the type described in section 7.3. The strategy exclusively associated with the less-affected P function looks simply like the subject – oblique argument structure strategy described in section 7.3.

Terms Defined in this Chapter

8.1 Discourse and Frequency Factors in Voice Choice

8.1.1 The Basic Voice Construction and Nonbasic Voice Constructions

basic voice construction (*cxn*), nonbasic voice construction (*cxn*), passive-inverse construction (*cxn*), applicative construction (*cxn*), antipassive construction (*cxn*), causative construction (*cxn*)

8.1.2 Discourse Motivation for Ergative and Accusative Alignment, and Preferred Argument Structure

Preferred Argument Structure

8.2 Information Packaging Strategies for Nonbasic Voice Constructions

8.3 *Passive-Inverse Constructions: Constructions for More Salient Ps*
passive-inverse voice construction (*cxn*), special P strategy (*str*), animacy-based split ergativity (*str*), differential object marking (*str*), complex predicate (passive-inverse voice) strategy (*str*)

8.4 *Antipassive Constructions: Constructions for Less Salient Ps (including Noun Incorporation)*

antipassive construction (*cxn*), less individuated P (LIP) (*sem*), less affected P (LAP) (*sem*), omitted P strategy (*str*), noun incorporation (*str*), oblique P strategy (*str*)

9 Argument Coding and Voice

Salience of Peripheral Participants

9.1 The Expression of Obliques as Core Argument Phrases

The event classes described in Chapters 6–7 represent different types of situations that are commonly encoded by simple predicates with their associated argument structure constructions. These constructions are the basic voice constructions for those situations. These constructions also include additional participants that are peripheral to the event, and therefore prototypically less salient referents. These less salient referents are normally introduced as oblique argument phrases in the clause, with no alteration of the predicate form, if they are expressed at all. Examples of different types of oblique argument phrases were given in section 6.1.2. We will describe the event expressed in the basic voice construction, with its set of central and peripheral participants in their prototypical level of salience or topicality, as the **base event (*sem*)**. Base events may be monovalent, bivalent, or trivalent.

In some instances, however, peripheral participants are construed as more salient – salient enough to become core arguments, and hence expressed in core argument phrases. The consequence of this construal is that the higher-salience peripheral participants are encoded as core arguments. For example, (1a) illustrates the basic voice construction of both the Hungarian original and the English translation; but (1b) illustrates a construction in which the semantic ground participant is encoded with an object phrase (examples taken from section 7.3.2):

- (1) a. János fák-at ültetett a kert-be
 John trees-ACC planted the garden-**into**
 ‘John planted trees in the garden.’
 b. János be-ültette a kerte-t fák-kal
 John APPL-planted the garden-ACC trees-**with**
 ‘John planted the garden with trees.’

In some cases, the “new” core argument is not one that is necessarily part of the base event. For example, the base event may not have a beneficiary; and it does not usually have an external causer. Such participants are “added” to the set of participants found in the base event. Examples (2) and (3) illustrate events to which an external causer and a beneficiary have been “added,” respectively.

- (2)
- a. Fred washed the car.
 - b. I made Fred wash the car.
- (3)
- a. Fred baked a shepherd's pie.
 - b. Fred baked me a shepherd's pie.

Examples (1b–3b) are instances of the constructions that are the topic of this chapter. They have in common the construal of a peripheral participant in the base event, or a participant absent from the base event, as core arguments. When the “new” core argument is an external causer, it is invariably encoded by a subject phrase. This construction is called a **causative construction (cxn)**. Causative constructions and their strategies will be discussed in section 9.2. When the peripheral participant or “new” participant plays a role other than an external causer, it is encoded by an object phrase. This construction is called an **applicative construction (cxn)**. Applicative constructions and their strategies will be discussed in section 9.3.

The addition of a core argument in causative and applicative constructions usually leads to a change in the morphosyntactic expression of the participants that are prototypically construed as core arguments in the base event. It also frequently leads to a change in the verb form – that is, overt coding of the verb, as in Hungarian (1b) above. The verb form sometimes does not undergo any change – that is, it is zero coded, as in the English translation of (1b) and English (3b). Some linguists exclude the zero-coded verb strategies from the categories of causative and applicative constructions. Since we include all strategies that express the function in the category of a construction, we include constructions using zero-coded verb strategies as well. In sections 9.2–9.3, we focus on the changes in the argument structure construction found with causatives and applicatives, and largely ignore whether the verb is zero coded or overtly coded. We return to zero vs. overt coding of the verb in section 9.4.

9.2 Causative Constructions: Strategies and Functional Subtypes

A **causative construction (cxn)** denotes an event that “adds” an external cause – that is, a participant is “added” to the beginning of the causal chain. We will call this the **causative event (sem)**. Figure 9.1 describes the augmented causal chain and the semantic role names commonly used for the participants in the augmented causal chain. Note that the initiator of the base event is renamed the **causee (sem)** in the causative event. When the base event is monovalent and an external causer is added, the lone S participant becomes the causee – that is, the one acted on by the external causer. When the base event is bivalent and an external causer is added, the A participant becomes the causee.

Since the added participant is almost always human, and is construed as the ultimate controller of the outcome of the event, the causer is a central participant

Figure 9.1 *Causative events: causal chain and semantic role names*

and a salient argument. Therefore, the causer is always encoded as a subject core argument phrase in the causative basic voice construction. Since speakers of languages almost always avoid having two subject core argument phrases in a clause, the addition of a causer to an event involves a restructuring of the relationship between participant roles and argument phrases in the clause. A variety of strategies are found across languages to restructure the argument structure constructions for causative events, summarized below:

- complex predicate strategy
- simple predicate (monoclausal) strategies
 - control-based strategy
 - transitivity-based strategy

The first strategy described here performs the minimal alteration to the argument structure normally used to express the base event. The **complex predicate causative strategy (str)**, also called the periphrastic strategy, expresses the external causing subevent as a separate predicate from the verb denoting the base event. English uses the complex predicate strategy for causative constructions:

- (4) I **made/had/let/helped** him cook dinner.

In the complex predicate strategy, the causer (the speaker) is expressed as subject of the external causing subevent predicate (in [4], *make*, *have*, *let*, or *help*). The causee is encoded as the object of the external causing subevent predicate, and any other participants in the base event are expressed as they are in the base event argument structure construction. One consequence of the complex predicate strategy is that there are two object argument phrases in (4), one being the causee and the other being the P argument of the base event.

The complex predicate strategy comes in different forms, and is used for a wide range of functions. For this reason, this book devotes a separate chapter to complex predicate strategies (Chapter 13). The complex predicate strategy is also an intermediate stage in a grammaticalization process from complex sentence constructions to a simple clause construction. Another strategy for the causative construction is to recruit a complex sentence construction, specifically a complement construction (see Chapter 18).

The English Causative Construction in (4) is often analyzed as a complement construction. However, unlike almost all other English Complement Constructions, the second predicate in the Causative Construction lacks the infinitival

marker *to* (optionally so for *help*), which may indicate a less biclausal structure. The French Causative Construction is a slightly more grammaticalized complex predicate construction than the English one (Cole 1983:128):

- (5) Patrick a fait pleurer Marie
 P. has made cry Marie
 'Patrick made Mary cry.'

- (6) J'ai fait manger le pain au/par le chat
 I have made eat the bread to/by the cat
 'I made the cat eat the bread.'

In the French Causative Construction, the two predicates must be contiguous, unlike in the English Causative Construction. More significantly, the argument structure construction for the French Causative Construction is a unitary argument structure, with one Subject argument phrase (in [6], the clitic pronoun *J'*), one Object argument phrase (*le pain*), and an Oblique phrase (*au/par le chat*). In this respect, the French Causative Construction looks more like the monoclausal strategies that we turn to next.

The second major category of strategies for causative constructions is the category of **simple predicate strategies (str)**. Simple predicate strategies are usually called 'morphological causatives,' because many analysts restrict causative constructions to overtly coded predicates, with a causative affix or other morphological alteration. However, as we observed in section 6.3.4, there are a variety of strategies relating a base event verb form and the counterpart causative event verb form. In section 6.3.4, the base event and causative event were called the noncausal event and the causal event, respectively. The reason that the base event was called the noncausal event in that context is that section 6.3.4 was specifically concerned with an external causer "added" to a monovalent event. In many languages, the simple predicate causative strategy is restricted to the causative of monovalent events (Dixon 2000:45), so it was reasonable to consider only those constructions in comparing noncausal and causal events in section 6.3.4. In this section, we look at causatives of both monovalent and bivalent events.

In simple predicate causative strategies, the argument structure construction encoding the participants in the causative event is generally the same as argument structure constructions used for the types of events described in Chapters 6–7. That is, the argument structure construction strategies are recruitment strategies. We can divide the causative argument structure construction strategies into two general categories based on their semantic motivation.

The first category of argument structure construction strategies for the causative construction are **control-based strategies (str)**. In control-based strategies, argument structure constructions are recruited for the causative based on the degree of semantic control of the causee, the participant whose role in the event changes the most when an external causer is "added." The semantic differences in the choice of argument structure construction recruited for the causative can be illustrated with the causative constructions found in examples (7)–(8)

from Hungarian (Cole 1983:124 from Hetzron 1976:118–19) and (9)–(11) from Wanka Quechua (Cole 1983:118–19):

- (7) Köhögöttem a gyerek-*et*
cough:CAU:1SG.PST the boy-ACC
'I made the boy cough.'
- (8) Köhögöttem a gyerek-*kel*
cough:CAU:1SG.PST the boy-INST
'I had the boy cough.'
- (9) nuqa Fan-ta rumi-*ta* apa-či-*ni*
I Juan-ACC rock-ACC carry-CAU-1SG
'I made Juan carry the rock.'
- (10) nuqa Fan-wan rumi-*ta* apa-či-*ni*
I Juan-INS rock-ACC carry-CAU-1SG
'I had Juan carry the rock.'
- (11) nuqa runa-man rik^bu-či-*ni*
I man-DAT see- CAU-1SG
'I showed it to the man.' [also *yaca-či* 'teach,' *mik^bu-či* 'feed,' *yuya-či* 'remind']

The Hungarian examples illustrate a control-based strategy for the causative of an intransitive. The Accusative Case is used when the causee has little or no control over the action, and the Instrumental Case when the causee has a higher level of control over the action. Hetzron (cited in Cole) describes the contrast as one between the causer performing some physical act such as blowing smoke in the boy's face, to cause him to cough (Accusative Case in [7]) and the causer verbally instructing the boy to cough (Instrumental Case in [8]). The Wanka Quechua examples illustrate a similar contrast in (9)–(10): the Accusative Case is used when the causee is coerced and has no choice, whereas the Instrumental Case is used when the causee voluntarily agrees to the causer's request.

The use of the Dative Case for causatives in Wanka Quechua in (11) is restricted to verbs with experiencers (cf. Kemmer and Verhagen 1994:135). Cole describes being an experiencer as having an intermediate degree of control: although the experiencing of the action is nonagentive, the experiencer is a potential agent, and in many cases a willing experiencer. We have already seen the causatives of experiencers at the end of section 7.4, where it was noted that these events constitute the few bivalent base events that may allow a causative in languages which otherwise restrict causative constructions to monovalent base events.

The situations in which the causee has higher control use the instrumental form, which is often identical to the form for the comitative participant role – accompanying/collaborating agent, as in *John wrote the song with Paul*. The co-expression of the higher-control causee with the comitative role suggests that the relationship between causer and causee is less asymmetric than in the

situations where the causee has little or no control. For example, in (12) the extent of the control or responsibility of Richard relative to Gareth in writing the article is vague, ranging from a more subordinate to an equal status:

- (12) Gareth wrote the article with Richard.

In events with a higher degree of control on the part of the causee, the causal chain for the event might be better represented as a more symmetrical relation between causer and causee:

- (13)
- | | |
|--------|--------------------------------|
| Causer | → P |
| ↓ | |
| Causee | [instrumental/comitative flag] |

Shibatani and Pardeshi (2002) argue that there is a continuum of causative relations for interpersonal causation. **Indirect causation (sem)** represents the most asymmetric relation between the two agents: one agent gets the other agent to do something but doesn't participate in the carrying out of the action. **Sociative causation (sem)** represents the more symmetrical relation similar to the comitative in (12). Shibatani and Pardeshi divide sociative causation into three types, listed here from more asymmetric to more symmetric: supervision, assistive, and joint-action (Shibatani and Pardeshi 2002:96–100). Finally, in **direct causation (sem)**, the causee has no control over the action. Shibatani and Pardeshi show that causative constructions in different languages cover different parts of the continuum from indirect to sociative to direct causation (Shibatani and Pardeshi 2002:102).

The control-based strategies express a contrast between degree of causee control that is often based on directness of causation: the less control the causee has, the more direct the causation. In control-based strategies, the contrast is expressed by different flags. But directness of causation can also be expressed by different causative constructions with different verbal forms. In this case, the grammatically more tightly integrated construction expresses the more direct causation (Haiman 1983a). In English, the more indirect causation is expressed in (14) with a complex predicate strategy (see above), using the verb *make* along with the verb *fall*, while the more direct causation is expressed in (15) with a single verb *fell* which represents base modification of the verb for the monovalent base event (*fall*):

- (14) I made the tree fall.
 (15) I felled the tree.

In Japanese, the more indirect causation is expressed in (16) (Payne 1997:183) by a causative suffix *-sase* in combination with the verb *ori*, while the more direct causation in (17) (Haiman 1983a:785; corrected by Bernard Comrie, pers. comm.) is expressed by a single verb *oros* that is related to the verb for the base event (*ori*) but is phonologically shorter than *ori-sase*:

- (16) Taroo-wa Ryoko-o ori-sase-ta
 Taroo-TOP Ryoko-ACC **descend-CAU-PST**
 'Taroo made Ryoko come down.'
- (17) Taroo-wa nimotu-o oros-ita
 Taroo-TOP baggage-ACC **bring-down-PST**
 'Taroo brought the baggage down.'

The second set of strategies used for the argument structure of monoclausal causatives is **transitivity-based strategies (str)**. In transitivity-based strategies, the flag of the causee depends on the valency of the base event. If the base event is monovalent, and hence expressed in an intransitive construction, then the causer is expressed as subject (as usual) and the causee as object, as in Turkish (Comrie 1989:175–76):

- (18) Hasan öl-dü (19) Ali Hasan-i öl-dür-dü
 Hasan die-PST Ali Hasan-ACC die-CAU-PST
 'Hasan died.' 'Ali killed Hasan.'

If the base event is bivalent, and hence expressed in a transitive construction, then the causer is expressed as subject but there are several options for the expression of the causee. The causee may be expressed with an instrumental or comitative flag, as in example (20) from Hua (Haiman 1980:236); with a dative flag, as in example (21) from Turkish (Comrie 1989:176; compare the base event transitive construction in [22]); or in an object form, as in example (23) from Kinyarwanda (Kimenyi 1980:164):

- (20) kamani'-ki' pasi kzo gu e
 Kamani-COM letter write FUT.1 IND.A
 'I'll have Kamani write a letter.'
- (21) Dişçi mektub-u müdür-e imzala-t-tı
 dentist letter-ACC director-DAT sign-CAU-PST
 'The dentist got the director to sign the letter.'
- (22) Müdür mektub-u imzala-di
 director letter-ACC sign-PST
 'The director signed the letter.'
- (23) Umugabo a-ra-andik-iish-a umugabo íbárúwa
 man 3SG-PRS-write-CAUS-ASP man letter
 'The man is making the man write a letter.'

In other words, the three strategies for expressing the causee found across languages are simply the three strategies that can be used in a single language like Wanka Quechua that uses the control-based strategies. This fact suggests that the transitivity-based strategies are instances where one of the control-based strategies has become conventionalized for all bivalent base events (Cole 1983).

The same applies to monovalent base events: the accusative strategy is conventionalized for all such events. The motivation for the accusative strategy for the causatives of monovalent base events is probably due to the fact that the causes of intransitives are usually inanimate and hence lack the degree of control of a human participant over the outcome. I am not aware of a language that has conventionalized an instrumental strategy for the causatives of all monovalent events.

The motivation for the different strategies for causatives of bivalent base events is more complex. Cole (1983) argues that, since transitive events are usually agentive with human subject participants, the causee of the causative construction will often be expressed as either instrumental – i.e. like a comitative or accompanying agent – or dative – i.e. like an experiencer.

Kemmer and Verhagen (1994) suggest that the different strategies used for the causative argument structure construction are all recruited (in our terms) from the basic intransitive, transitive, and ditransitive constructions. They note that a special flag for the causee participant role is rare-to-nonexistent in languages (Kemmer and Verhagen 1994:147). The ubiquitous use of the accusative strategy for the causatives of intransitives (monovalent base events) is simply the recruitment of the basic transitive construction (section 6.2.1). For the causatives of transitives (bivalent base events), the instrumental strategy is recruited from the basic transitive construction plus expression of the instrument (see section 6.2.1); and the dative strategy is recruited from the basic ditransitive construction (see section 7.5). These two recruitment strategies are based on the fact that the causee is intermediate in the causal chain between causer and the P role (the instrumental strategy; see Figure 9.1), and the fact that the causee is human like the R role of the transfer event that forms the prototype of the ditransitive construction (the dative strategy).

It is certainly the case that the strategies for causative argument structure constructions are recruited from the argument structure constructions for more basic event types. However, it is not always clear what the source construction is for the strategy that has been recruited. Kemmer and Verhagen suggest that the instrumental strategy is recruited from the basic transitive construction. But the instrumental strategy is also used for the causative of monovalent events (intransitives) in languages using the control-based strategy. It was suggested above that perhaps the source construction is actually the comitative (accompanying agent) construction, which may occur with either a mono valent or bivalent base event: *She worked with Martin; She wrote an article with Martin.*

Kemmer and Verhagen suggest that the dative strategy is recruited from the transfer event that is the trivalent event type for the ditransitive construction. But, as we saw in section 7.5, the ditransitive construction itself uses different alignment strategies: secundative alignment, which corresponds to the instrumental strategy; indirective alignment, which corresponds to the dative strategy; and neutral alignment, which corresponds to the accusative strategy. The dative strategy is often restricted to experiential constructions (as both Cole

and Kemmer and Verhagen observe); and experiential constructions often use a strategy encoding the experiencer as a dative. So the dative strategy in the causative may be better analyzed as the causative of an intransitive (i.e. nominative causer, accusative stimulus) with an experiencer expressed as dative.

9.3 Applicative Constructions

Applicative constructions (*cxn*) are those in which a less salient participant – one that is usually expressed as an oblique argument phrase, if it is expressed at all – is increased in salience to the point that it is expressed by an object phrase. We will refer to this argument phrase as the **applicative object (*cxn*)**. Applicative constructions, like many of the other voice constructions discussed in this chapter and the preceding one, are normally assumed to be overtly coded on the predicate – that is, there is some affix or other morphological alteration to the predicate. This is just one strategy (also called the ‘morphological strategy’) – albeit a common strategy – for applicatives (see section 9.4). The typological surveys discussed in this section restrict applicatives to overtly coded applicative constructions, but we will also discuss constructions that do not alter the verb form (so-called object – oblique verb alternations). Some general observations about applicative constructions will be made before summarizing the strategies for them.

The applicative object is generally a participant subsequent to the subject participant in the causal chain of the event expressed by the clause. If the base event is monovalent – that is, has only one salient participant – then an applicative construction introduces a second salient participant. If the base event is bivalent, then there is already a second salient participant, and the applicative object may be antecedent or subsequent to the base event’s prototypical object participant in the event’s causal chain. In contrast to the morphological strategies for causative constructions, which are often restricted to monovalent base events (intransitives; Dixon 2000:45), morphological strategies for applicative constructions are more commonly found with bivalent base events (transitives; Polinsky 2013).

There are some crosslinguistic and language-specific observations that provide evidence supporting the view that applicative constructions are primarily associated with higher salience of the participant encoded as object in the applicative construction. The most common participant role to be expressed as object in a (morphologically overtly coded) applicative construction is a person affected by an action: beneficiary, maleficiary, and/or recipient. Peterson finds that 41 languages out of a 50-language sample have an applicative construction for beneficiary/maleficiary roles (Peterson 2007:202, 247–48; Peterson also found that a maleficiary applicative always co-occurred with or was identical to a beneficiary applicative in his sample). Polinsky finds what she calls a “benefactive” (not more precisely defined) applicative in seventy-one out of eighty-three languages with applicatives (Polinsky 2013). The beneficiary/maleficiary/recipient

is always human, and hence is a naturally more salient participant. Even basic transfer verbs, which include the recipient as a salient core participant, may take an overt applicative affix in some languages. In Misantla Totonac, ‘give’ does not take an applicative affix, but ‘send’ does (MacKay 1999:223, 265):

- (24) ut kin-jški xun-libro
s/he 1OBJ-give DET-book
'S/he gives me the book.'

- (25) kit ik-yaawan-ni-la(1)-na tun-karta
I 1SG-send-APPL-PFV-2OBJ one-letter
'I sent a letter to you.'

In Tzotzil, all transfer events, even ‘give,’ take an overt applicative suffix (Aissen 1983).

The comitative, also a human role, is the next most common semantic role expressed as object in an applicative construction in Peterson’s sample, occurring in twenty-seven out of fifty languages (Peterson 2007:202, 247–48). Polinsky found the most common applicatives after “benefactive” to be instrument and location (Polinsky 2013), though it is possible that the applicative construction for instruments also expresses a comitative (Peterson 2007:202). Peterson finds instrument and locative participant roles, both normally filled by nonhuman participants, to follow beneficiary/maleficiary and comitative in crosslinguistic frequency. Participants in still other roles may be expressed as applicative objects, such as “circumstance” (cause, reason, purpose) and “substitutive” (acting on behalf of someone or in someone’s stead; this category is usually subsumed under beneficiary but Polinsky distinguishes it). The substitutive participant role as object in an applicative construction is illustrated for Tukang Besi (Donohue 1999:231, cf. Polinsky 2013; CORE = Non-nominative Core Article):

- (26) no-ala-ako te ina-su te kau
3.RL-fetch-APPL CORE mother-my CORE wood
'She fetched the wood (as a favor) for my mother.'

Peterson includes a case study of the discourse status of applicative objects in Hakha Lai and Wolof (Peterson 2007:ch. 4). In both languages, the animate participants expressed as objects in the applicative measure high in topicality using Givón’s topic continuity criteria (see section 3.3.1). Wolof has many applicative objects that are inanimates, in roles typical for inanimates. These did not measure as high in topicality, except that they were often pronominal and hence highly accessible. However, the applicative object often functioned as the focus in an identificational construction (see section 11.4), which represents a different sort of discourse prominence. Donohue (2001) found similar results for Tukang Besi texts (cf. Peterson 2007:121–22): applicative objects that were animate in beneficiary and comitative roles were higher in topicality than the same participants expressed as obliques in non-applicative constructions, but there was no significant difference for inanimate participants (Donohue 2001:247–48), except that

in applicative constructions they were overwhelmingly pronominal (Donohue 2001:141–42). Hence it appears that the discourse function of applicative object referents for inanimate roles is different from the discourse function of applicative object referents for animate roles.

Polinsky observes that applicative constructions appear to be correlated with the absence of rich flag systems (Polinsky 2013). If so, then applicatives may serve to function as an alternative to oblique argument phrases in such languages, and one would therefore not expect to find them to differ in discourse salience from oblique argument phrases in other languages.

The classification of applicative construction strategies follows that of causative construction strategies:

- complex predicate strategy
- simple predicate strategy

The **complex predicate applicative strategy (str)** is the use of so-called serial verb complex predicate constructions for peripheral participant roles – that is, the use of more than one word that can function as an independent predicate. Example (27) illustrates the use of ‘give’ to express a beneficiary in Yorùbà (Ekundayo and Akinnaso 1983:122; cf. Durie 1997:308), and example (28) illustrates the use of ‘take’ to express an instrument in Vagala (Pike 1967:4, from Marjorie Crouch, pers. comm.; cf. Durie 1997:305):

- (27) ó ra iṣú fún mi
he buy yam give me
'He bought yams for me.'
- (28) ù kpá kíyzéé mòng ówl
3SG take knife cut meat
'He cut the meat with a knife.'

The constructions in (27)–(28) are not usually described as applicative constructions, but they are grammatically parallel to the use of complex predicates for causative constructions (section 9.2).

Another reason to consider the examples in (27)–(28) to be more like adpositions is that there is no clear evidence that the predicate indicating the participant role will be attracted to the other verb, since the ‘give’ and ‘take’ verbs are separated from the other verb. However, the use of the ‘give’ verb in a complex predicate construction in Mbembe suggests that it could be in the process of being attracted to the main verb. In Mbembe, the ‘give’ verb is contiguous with the main verb, while the alternative construction with the postposition ‘for’ is separated from the main verb (Richter genannt Kemmermann 2015:344):

- (29) n=dʒí tʃɛ-zí ñá nwā-ŋɛ
1SG.S=IPFV burn-eat give husband-1SG.POSS
'I am cooking for my husband.'

- (30) a yā tʃɛ-zí bū ðò ké nwa-o
 2SG.S PST burn-eat thing certain:SG for husband-2SG.POSS
 'You cooked for your husband.'

The construction in (29) is used when the beneficiary (the husband) is more salient in the discourse, which is the same pragmatic context typical of applicative constructions, as noted just above.

As with the complex predicate strategy for causative constructions, the complex predicate strategy for applicative constructions originated in a complex sentence construction. Examples of a complex sentence construction that performs a similar function to the applicative construction are the English sentences in (31):

- (31) a. He **used** an axe to open the door.
 b. He opened the door **using** an axe.

The second major strategy for applicative constructions is the **simple predicate applicative strategy (str)**, whether overtly coded on the predicate or not. As mentioned above, most typological studies of applicative constructions are actually studies of the overtly coded simple predicate strategy for applicative constructions. However, English object-oblique alternations are instances of the zero-coded simple predicate strategy for applicative constructions, since the effect is to express a participant as an object phrase rather than an oblique phrase:

- (32) a. We gave books **to the children**.
 b. We gave **the children** books.
- (33) a. The kids sprayed paint **on the wall**.
 b. The kids sprayed **the wall** (with paint).
- (34) a. The beavers stripped bark **from the trees**.
 b. The beavers stripped **the trees** (of bark).

The alternations in (32)–(34) were discussed in section 7.3.2. There it was noted that some linguists argue that degree of affectedness or the measurement of the change in the event is associated with object expression. There is some evidence that applicative forms indicate a higher degree of affectedness, e.g. Pogoro -oyera 'relax' vs. -oyerera [APPL] 'relax thoroughly,' -komera 'hit' vs. -komerera [APPL] 'hit strongly' (Peterson 2007:50).

The overtly coded predicate strategy for applicative constructions may include one or many different types of applicative affixes depending on the semantic role of the applicative object. Nomatsiguenga has one of the more highly differentiated sets of applicative affixes (Wise 1971; cf. Payne 1997:188–90). There are distinct verbal suffixes for at least two locatives, beneficiary (35), purpose (36), instrument (37), comitative (38), reason (39), and 'included'/'with reference to' (40) (Wise 1971:106, 111, 107, 112, and 105, respectively):

- (35) na-manantë-ne-ro kayeta
I-buy-BEN-her cracker
'I bought crackers for her.'
- (36) ni-ganta-si-të-ri hompiki
I-send-PURP-...-him pills
'I send him for pills.'
- (37) ora pi-nets-an-ti-ma-ri hitatsia negativo
that you-look_at-INS-FUT-FUT.REFL-him name negative
'Look at it (the sun during an eclipse) with that which is called a negative.'
- (38) juan i-komota-ka-ke-ri pablo otsegoha
John he-dam_stream-COM-PST-him Paul river_branch
'John dammed the river branch with Paul.'
- (39) pablo i-kisa-biri-ke-ri juan
Paul he-be_angry-REASON-PST-him John
'Paul was angry on account of (because of) John.'
- (40) pablo i-komoto-ko-ke-ri pabati otsegoha
Paul he-dam_stream-INCLUDED-PST-him father river_branch
'Paul dammed the branch of the stream with reference to father.'

In contrast, Tukang Besi uses a single suffix *ako* for beneficiary, instrument, purpose, and cause (Donohue 1999:225–26; cf. Peterson 2007:44; Tukang Besi differentiates comitative and locative/goal roles with distinct applicative affixes):

- helo'a-ako* 'cook-APPL' [for their mother; beneficiary]
- hugu-ako* 'chop-APPL' [with their knives; instrument]
- lemba-ako* 'carry-APPL' [for the festival; purpose]
- mate-ako* 'die-APPL' [from a fall; cause]

The overtly coded applicatives of Nomatsiguenga and Tukang Besi encode the P participant of the base event as an object. The zero-coded applicatives in English encode the P participant of the base event as an oblique. This is not necessarily a correlation. An example where the P argument is expressed by an oblique argument phrase is Hausa (Kraft and Kirk-Greene 1973:151; gloss added; compare also the Hungarian example in 35b in section 7.3.2):

- (41) sun shāyar manà dà shānū
they drink:APPL us with cattle
'They watered the cattle for us.' [lit. 'They watered us with cattle']

The complex predicate strategy can grammaticalize into the simple predicate strategy – that is, the (former) verb expressing the participant role can become attached to the verb (Peterson 2007:130–33, citing examples from the Sahaptian family, Yimas, Hakha Lai, Chickasaw, and Iroquoian). For example, in Nez Perce, the beneficiary/recipient applicative *-a'n* in (42) is argued to originate in '*eni/ni* 'give,' and the comitative applicative *-twe* in (43) is argued to have

a common source with the verb *tiwiikin* ‘accompany, follow’ (Rude 1991:186, 192; cf. Peterson 2007:130):

- (42) wálc pää-ny-a' n-ya 'áayato-na
 knife 3SBJ/3OBJ-make-APPL-PST woman-OBJ
 'He made the woman a knife.'
- (43) láwtiwa-a-na pée-tuqi-twí-c-e
 friend-OBJ 3SBJ/3OBJ-smoke-COM.APPL-PROG-SG.NOM
 'He is smoking with a friend.'

Of course, the (former) verb in the complex predicate strategy may instead grammaticalize into an adposition, as described in section 4.3. But adpositions may also then grammaticalize into applicative affixes on the predicate (Peterson 2007:125–29, citing examples from Rama, Bantu, Micronesian, and Nadëb). In Rama, when a referent is accessible, it is expressed by zero anaphora. If the overt argument phrase would be combined with a postposition, then when the referent/argument is expressed by zero anaphora, the postposition cliticizes to the verb (Craig and Hale 1988:322, cited in Peterson 2007:125–26; SUB = subordinate):

- (44) nainguku kiskis nsu-kuaakar-i,
 so tongs we-have-ASP
 'That's why we have tongs,
- suli-kaas Ø yu-nsu-auk-kama
 animal-meat it **with**-we-roast-SUB
 'for us to roast meat with it...'

Peterson cites another language, Niuean (Seiter 1979), in which an instrumental adposition cliticizes to the verb when the referent is accessible and expressed by zero anaphora (Peterson 2007:129). The preference for cliticization of the flag onto the verb when the participant is not overtly expressed is probably the source of the preference for pronominal (i.e., highly accessible) referents with applicatives, particularly nonhuman referents. As was seen in section 3.3.2, the most highly accessible referents are expressed by zero and the next most highly accessible referents are expressed by personal pronouns which can grammaticalize to indexes. From this point in the grammaticalization process, the applicative construction may be extended to less accessible referents expressed overtly by a nominal.

Finally, a number of languages use the same verb form for certain applicatives and the causative (Peterson 2007:64–66, 133–40). We may call this strategy **causative–applicative co-expression (str)**. In some languages, the causative form is identical to the benefactive applicative. For example, in Hualapai the suffix *-o* is an applicative for transitives and some intransitives (Ichihashi-Nakayama 1996:228–29; cf. Peterson 2007:64):

- (45) John-ch nyi-ðadaha:d-ò-k-yu
 John-SBJ 3/1-work-APPL-3-AUX
 'John is working for me.'

- (46) nya-ch he' nyi-yo:v-ò-wi-ny
 I-SBJ dress 1/2-make-APPL-AUX-PST
 'I made you a dress.'

However, for other intransitives, *-o* has a causative meaning (Ichihashi-Nakayama 1996:231):

- (47) nya-ch Mary diye:-wò-wi-ny
 I-SBJ Mary 1/3.be_happy-APPL-AUX-PST
 'I made Mary happy.'

The causative interpretation of *-o* occurs when the base event subject is an experiencer rather than an agent (Ichihashi-Nakayama 1996:232). Peterson suggests that both benefactive applicatives and causatives may grammaticalize from the verb 'give,' leading to the sort of split observed in Hualapai.

In other languages, the causative form is identical to the instrumental or comitative applicative. In Kinyarwanda, the suffix *-iis* is used for the causative (see example [23] in section 9.2, repeated below as [48]) and the instrumental applicative (Kimenyi 1980:164):

- (48) Umugabo a-ra-andik-iish-a umugabo íbárúwa
 man 3SG-PRS-write-CAU-ASP man letter
 'The man is making the man write a letter.'

- (49) Umugabo a-ra-andik-iish-a íkárámu íbárúwa
 man 3SG-PRS-write-INS-ASP pen letter
 'The man is writing a letter with a pen.'

In (48) and (49), the causal chain is the same: Causer/Agent → Causee/Instrument → Patient (Croft 1991a:242–43). The only difference is whether the intermediate participant in the causal chain is human (causee) or not (instrument; Peterson 2007:135–36).

In Nomatsiguenga, the suffix *-kag* serves as either a comitative applicative or a causative (Wise 1971:97):

- (50) te i-nit-kag-i-ri
 no he-see-COM-...-him
 'He didn't cause him to see (a monkey),' or 'He didn't see (a monkey) with him'

Example (50) is related to sociative causation (section 9.2). Shibatani and Pardeshi (2002:116, 118) suggest that at least some comitative applicatives are historical extensions of sociative causatives. Shibatani and Pardeshi also suggest that the benefactive applicative may be an extension of the sociative causative: performing an action for someone (the beneficiary) is a cooperative activity like sociative causation, even if the person benefiting actually does not play an active role in bringing about the action.

9.4

A Hierarchy of Overt Coding in Voice Constructions

In the sections describing different voice constructions in this chapter, it was frequently noted that many scholars restrict nonbasic voice constructions to only **overtly verb-coded voice strategies (str)**, where the predicate form is distinct from the predicate used for the basic transitive construction (for passive-inverse and antipassive) or distinct from the predicate used for the base event (causative and applicative). For example, the Nomatsiguenga examples in (35)–(40) all use the overtly coded voice strategy. We have defined a construction as a comparative concept in terms of a function no matter what strategy is used. Thus, we have included **zero verb-coded voice strategies (str)** along with overtly coded strategies in discussing the crosslinguistic variation and universals of voice constructions. For example, we have included the English constructions in (32)–(34) as instances of the applicative construction.

It turns out that there is a universal of zero vs. overt coding of the different types of voice constructions and also the strategies for causal and noncausal events described in section 6.3.4. Vigus (2017) identifies the following hierarchy of zero vs. overt coding in the thirty-six languages in the online ValPaL database:

interpersonal	< passive	< reflexive, reciprocal	< anticausative
causation		reciprocal	antipassive*
			< “instrument applicative† subject”

*object deletion only

†locative alternations (e.g. (1a–b) in section 9.1) and transfer events only

Interpersonal causation refers to situations in which the causee is an agent, which is common with causatives of bivalent events. The “instrument subject” construction is a construction in which a physical entity is expressed as subject, rather than an agent that may have used the physical entity as an instrument, as in *The rock broke the window* (vs. *I broke the window*).

The hierarchy is interpreted as follows. If a language uses overt coding for a predicate for a voice construction on the hierarchy, then it uses overt coding for all constructions to the left of it on the hierarchy. In other words, if one includes both constructions with zero predicate coding and overt predicate coding as voice constructions in crosslinguistic comparison, there is a typological generalization that covers their distribution across languages.

Terms Defined in this Chapter

9.1 The Expression of Obliques as Core Argument Phrases

base event (*sem*), causative construction (*cxn*), applicative construction (*cxn*)

9.2 Causative Constructions: Strategies and Functional Subtypes

causative event (*sem*), causee (*sem*), complex predicate causative strategy (*str*), monoclausal (a.k.a. simple predicate) causative strategy (*str*), control-based

causative strategies (*str*), indirect causation (*sem*), associative causation (*sem*), direct causation (*sem*), transitivity-based causative strategies (*str*)

9.3 Applicative Constructions

applicative constructions (*cxn*), applicative object (*cxn*), complex predicate applicative strategy (*str*), monoclausal (*a.k.a.* simple predicate) applicative strategy (*str*), causative–applicative co-expression (*str*)

9.4 A Hierarchy of Overt Coding in Voice Constructions

overtly verb-coded voice strategy (*str*), zero verb-coded voice strategy (*str*)

10.1

Introduction

Chapters 6–9 provide an overview and framework for understanding the complex range of strategies used to predicate an action of the participant(s) in that action. Chapters 6–7 focus on the semantic range of event types and the different strategies of expression of the participants of the action – that is, the argument structure constructions for various event types. In Chapters 6–7, the prototypical correlation of semantic participant role and participant (referent) salience is assumed. Chapters 8–9 focus on constructions used to express nonprototypical combinations of semantic participant role and participant salience – for example more salient P participants or more salient peripheral participants. In this chapter, we describe nonprototypical predication – that is, the predication of concepts other than action concepts. In the course of presenting nonprototypical predication, we introduce non-predicational clauses, which will be examined further in Chapters 11–12.

10.1.1 Nonprototypical (“Nonverbal”) Predication

Nonprototypical predication (cxn) is the predication of concepts other than action concepts. Nonprototypical predication includes the predication of object concepts (1) and property concepts (2), first described in section 1.3 (Table 1.1) and section 2.1 (Table 2.1). Nonprototypical predication is also taken to include the predication of location (3) and the predication of possession (4):

- (1) Frieda is an engineer.
- (2) Sandy is clever.
- (3) The mail is in the kitchen.
- (4) This book is mine.

The term ‘nonverbal predication’ is commonly used for these constructions, since these constructions often use strategies other than the strategy for the prototypical action predication construction. As is common, the term ‘nonverbal predication’ is used ambiguously for both a function and a form:

- function: the predication of object, property, location, and possession concepts
- form: a predication construction using a strategy other than the strategy used for the prototypical action predication (verbal) construction

I will avoid the term ‘nonverbal predication’ here. The strategies associated with nonprototypical predication vary considerably, and more than one distinct strategy may be used in a single language. I will introduce the names of the various strategies used to express nonprototypical predication in the course of this chapter.

10.1.2 Predication and Nonpredicational Information Packaging in Clauses

Constructions used for nonprototypical predication are also used to express two other ways to package the same information content as predicational clauses do. In this section, we will describe these three ways to package information – one predicational, two nonpredicational – using object concepts.

The “predicate nominal” construction in English – a subject-like referring phrase, and a form of *be* followed by something looking like a referring phrase – is used for all three functions. The analysis of the three information packaging functions presented here is based on Stassen (1997:100–6).

The first information packaging function is called **predicational (*inf/cxn*¹)** by Stassen, and is illustrated in (5) (Stassen 1997:102):

- (5) Bill is a teacher.

Stassen’s predicational information packaging is the familiar predicational information packaging first described in Chapter 1 of this book, and assumed in the analysis of clauses in Chapters 6–9. The predicational function predicates a concept – in (5), belonging to the category ‘teacher’ – of a referent – in (5), Bill. The term ‘predicational’ for an object concept indicates that the concept being predicated is membership in the object category – in example (5), belonging to the object category of teachers. Hence, ‘predicational’ is simply an alternative term for predication of an object concept.

Predication of any concept is also called **topic-comment (*inf*)** information packaging. It is so called because this packaging divides the information into two different types of ‘packaging’: one type, the **comment (*inf*)**, is the information being added; and the other type, the **topic (*inf*)**, is the already established referent about which the comment is being made. Hence, ‘topic-comment’ is another alternative term for predication in general. Yet another term for predication/topic-comment information packaging, taken from philosophy, is ‘categorical’ (e.g. Sasse 1987).

The second type of information packaging discussed by Stassen is called **presentational (*inf*)** by him, and is illustrated in (6)–(7) (Stassen 1997:101):

- (6) That’s a roadrunner.
 (7) There’s my bicycle.

¹ The terms introduced in the section are used for both the information packaging function and for the construction used to express that information packaging function. In the latter use, the term will be combined with ‘construction,’ e.g. ‘predicational construction’.

The presentational information packaging for object concepts introduces a referent into the discourse, specifically, ‘to make the identity of the referent known to the hearer’ (Stassen 1997:101). Presentational constructions are described in more detail in sections 10.4.2 and 10.4.3.

The presentational construction, which applies to object concepts, is a subtype of a more general information packaging category called **thetic (inf)**, a term borrowed from philosophy (where it contrasts with ‘categorical’; Sasse 1987:512–15). A thetic construction presents the information in the clause without the split in packaging between the topic and the comment that is characteristic of predicational (topic–comment) information packaging. The thetic function has been described as ‘all new information’ (Schmerling 1976) since it does not contain an established topic, or as ‘neutral description’ (Kuno 1972:298) since all the information in the sentence is being presented uniformly – that is, as new information (Lambrecht 1994:138).

The third and final information packaging function at the clause level is called **equational (inf)** by Stassen, and is illustrated in (8), a classic philosophical example (Stassen 1997:101–2):

- (8) The Morning Star is the Evening Star.

The equational construction in (8), expressing the equational information packaging function, indicates that ‘two expressions refer to one and the same object’ (Stassen 1997:101–2). Example (8) informs the hearer that two celestial objects that were thought to be distinct are one and the same, namely the planet Venus. The term ‘equational’ is appropriate because one can describe the equational function of (8) by the equation ‘Morning Star = Evening Star.’

The equational function is a subtype of a more general information packaging function which is called **identificational (inf)**. The more general identificational function is described in section 11.4.

Stassen introduces the file metaphor (see section 2.1) to explain the distinction between the three information packaging functions used with object concepts (Stassen 1997:102). The predicational (topic–comment) information packaging adds content to an existing file for a referent (i.e. the topic referent). The presentational information packaging creates a new file for a referent. The equational information packaging merges two existing files, effectively removing one of the files as a distinct file.

Only the predicational information packaging leaves intact the “file structure” of the hearer’s knowledge. The other two ways to package the information have the effect of reorganizing the file structure of the hearer’s knowledge, at least for the presentational and equational subtypes described here. Stassen groups the presentational and equational functions together as ‘identity statements’: the presentational function creates a new identity, the equational function merges two identities (Stassen may be restricting himself to just the deictic presentations in his definition of identity statements). Although we will not lump together presentational and equational constructions here, we do want a general term to cover the broader categories of thetic and identificational constructions that

express the corresponding nonpredicational information packaging functions. We will call them **nonpredicational clauses (cxn)**.

As noted above, so-called English “predicate nominal” expressions actually may express any one of the three types of information packaging. In some cases, a particular sentence will be ambiguous between two of the three types. This ambiguity, of course, makes it more difficult to distinguish the three types of information packaging. Also, there are additional terms that have been proposed for some of the interpretations of the ambiguous sentences.

In the prototypical English Predicational Construction, the predicate is grammatically expressed with an indefinite article: see example (5). In the prototypical English Equational Construction, there are two definite referring phrases; see example (8). However, the occurrence of a definite article or an indefinite article does not entail that the sentence is an instance of equational or predicational information packaging, respectively. There are equational constructions with indefinite articles, and predicational constructions with definite articles.

If one of the nominals names a role, e.g. *the capital of Poland*, *the President of the United States*, then the sentence is ambiguous between equational and predicational interpretation (Stassen 1997:103):

- (9) Warsaw is the capital of Poland.

Example (9) has an equational interpretation in the following context: you haven’t ever heard of Warsaw, and I equate it with the role ‘capital of Poland,’ which you have a file for (for example, you know Poland is a country, but you don’t know which city is the capital). The equational interpretation of role expressions is also called the ‘specificational’ reading of the sentence.

Example (9) has a predicational interpretation in the following context: you already know about Warsaw – that is, you have opened a discourse file for it, and I’m giving you some information about it. The predicational interpretation of role expressions is also called the ‘characterizational’ reading.

Example (9) is a bit unnatural in the predicational (characterizational) reading. A more natural example is when you are introduced to someone you don’t know, as in (10b):

- (10) a. This is Emily Burns.
 b. Emily is the Science Director of the Save-the-Redwoods League

Sentence (10a) is presentational: you don’t know who this person is, so the information is all new. Once the introduction is made, you now have a file for Emily Burns. Sentence (10b), with the role expression *the Science Director of the Save-the-Redwoods League*, is predicational (characterizational), on the assumption that you don’t know about the Save-the-Redwoods League, or at least don’t know that the Save-the-Redwoods League has a Science Director. However, if you already know about the Save-the-Redwoods League and its Science Director, but didn’t know beforehand that Emily fills that role, then sentence (10b) would be equational (specificational).

Table 10.1 *Terms for the three information packaging functions at the clause level. Only terms in the first two columns will be used in this book*

“predicate nominal” functions (Stassen 1997)	general sentence type (see Chapter 11)	“predicate nominal” is a role phrase	“predicate nominal” is an indefinite phrase
predicational	Topic–comment (<i>also</i> categorical)	characterizational	classificational
presentational equational	thetic* identificational (<i>also</i> identity statement)	— specificational	— definitional

* divided into entity-central and event-central; presentational is a subtype of entity-central thetic

The second ambiguity occurs when the “predicate nominal” is indefinite (Stassen 1997:104):

- (11) The Fender Stratocaster is a type of electric guitar.

Example (11) has an equational interpretation in the following context: I am defining for you what a Fender Stratocaster is, assuming that you are unfamiliar with the category or type denoted by the subject. The equational interpretation of sentences like (11) is also called the ‘definitional’ reading.

The example has a predicational interpretation in the following context: you already know something about a Fender Stratocaster – that is, you already have a file for the Fender Stratocaster – and I am adding information to your file for the Fender Stratocaster. The predicational interpretation of sentences like (11) is also called the ‘classificational’ reading.

Example (11) is a bit unnatural in the predicational (classificational) reading. First, if someone knows anything about a Fender Stratocaster, they probably know it is a type of electric guitar. That is, the predicate in (11) is very likely to be definitional of the subject referent for the hearer (it would sound natural only if the hearer had not heard of Fender Stratocasters before). Second, if the subject referent is a general category rather than an individual, as in (11), then the definitional interpretation is favored: I am likely to be defining the general category of Fender Stratocasters for you. A sentence like (12) is more easily interpreted as predicational (classificational):

- (12) Katherine Looney is a linguistics major.

Katherine Looney is an individual, not a general category; and being a linguistics major is not likely to be the first thing one knows about Katherine Looney if one has a file for her.

Table 10.1 gives the terminology for the information packaging functions described in this section. We will use only the terms in the first two columns in this textbook; the terms in the first column will be used in this chapter, and the more general terms in the second column will be introduced in Chapter 11.

10.2 Strategies for Prototypical and Nonprototypical Predication

In this section, we will describe the strategies identified by Stassen for the nonprototypical predication constructions – that is, the predication of concepts other than actions, and the diachronic relations among the strategies and their uses. However, at the end of this section, we will include equational constructions because they are a diachronic source for two strategies used for nonprototypical predication.

Stassen distinguishes four strategies for predication. The first is the **verbal strategy (str)**. This strategy is associated specifically with action predication, and indeed represents the basic verbal construction of a language. Broadly, the verbal strategy represents recruitment of the original action predication construction for nonprototypical predication. Hence, the verbal strategy is an instance of the actual IP strategy (section 2.2.5).

Stassen identifies what the original action predication construction is, using three different criteria:

- The verbal strategy uses the same person indexation markers as action predication use, if the language employs person indexation (see section 6.2.2).
- The verbal strategy does not use a support verb (an auxiliary; see section 13.4) to express inflectional categories.
- The verbal strategy uses the same negation forms as action predication.

The second criterion specifically excludes constructions whose strategy – the presence of the auxiliary – indicates that it originated from a non-action predication construction. Some languages require an auxiliary even for action predication – that is, such languages recruited a non-action predication strategy for action predication. If this is so, then the other criteria, namely person indexation and the expression of negation, can be used to identify strategies that probably originated in the action predication construction. However, these criteria also require qualification. Sometimes, person indexation in nonprototypical predication is different from person indexation in action predication. If so, then the person indexation probably originated from a non-action predication construction (e.g. in Beja; Stassen 1997:40). The same may be true for negation, a further criterion that Stassen appeals to because some languages lack person indexation in action predication.

Classical Nahuatl presents an example of the verbal strategy that has been extended to property and object predication (Stassen 1997:45–46, from Launey 1994:52, Andrews 1975:254 and Launey 1994:54, respectively):

(13)	a. ni-chōca 1sg-cry 'I am crying.' [action]	b. ni-cualli 1sg-good 'I am good.' [property]	c. ni-tīcītl 1sg-doctor 'I am a doctor.' [object]
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The second strategy is the **locational strategy (str)**. The locational strategy is characterized by the use of a ‘support verb’ – that is, an auxiliary form (see section 13.2.3) that is inflected like a verb (i.e. action predication). Stassen also calls this a **verbal copula** strategy, although as we will see in section 10.3, some verbal copulas originate with verbs other than locative verbs. The ‘support verb’ is specifically a locational verb or (presumably) historically derived from a locational verb, typically a body position (posture) verb. The locational strategy thus originates in locative predication.

Amele presents an example of the locational strategy that has been extended to property concepts (Roberts 1987:186, 65; glosses from Stassen 1997:149):

- (14) a. uqa jo na bil-i-a b. uqa me bil-i-a
 he house at sit-3SG-PRS he good sit-3SG-PRS
 ‘He is in the house.’ ‘He is well.’
 [location] [property]

The third strategy is the **nonverbal copula strategy (str)**. The nonverbal copula strategy uses an uninflected form, most typically: a pronoun, either demonstrative or personal; a topic or focus marker (if different from a pronoun); or a highly grammaticalized form, different from anything else and whose origin is unrecoverable. Example (15) illustrates object predication with a nonverbal copula derived from a demonstrative in Nakanai (Johnston 1980:151; cf. Stassen 1997:82), and example (16) illustrates nominal predication with a nonverbal copula from a focus marker in Awtuw (Feldman 1986:138; cf. Stassen 1997:88):

- (15) eia la taua sesele...
 3SG DEM spirit truly
 ‘He is truly a spirit.’

- (16) wan po rumeyæn
 1SG FOC human_being
 ‘I am a human being.’

The fourth strategy is the **zero strategy (str)**, in which subject nominal and predication are simply juxtaposed without any inflection (in contrast to the verbal strategy). Tiwi represents an example of the zero strategy that has been extended to property predication (Stassen 1997:144, from Osborne 1974:60):

- (17) a. purukuparli ma.ntina b. tunkwaltirija pumpuka
 Purukuparli boss stringy_bark good
 ‘Purukuparli is boss’ ‘A stringy bark is good.’
 [object] [property]

Stassen treats both the nonverbal copula strategy and the zero strategy as **nominal strategies (str)**, because they appear to originate in object predication. In particular, if the zero strategy is found in any nonprototypical predication construction, it is found in object predication (Stassen 1997:64). Stassen argues, however, that, in fact, the two nominal strategies ultimately originate in equational

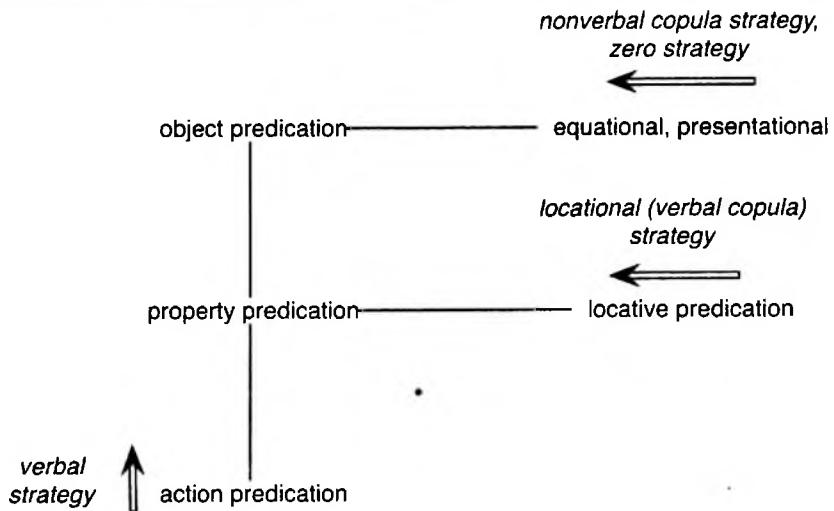


Figure 10.1 *The origin and evolution of predicational strategies*

constructions (Stassen 1997:106–12). Although he does not give examples, the argument is that constructions that originate in the equational function generally use one of three strategies: juxtaposition of the expressions for the two referents, i.e. ‘X = Y’ is expressed as [X Y]; or the use of a pronoun or topic marker, i.e. ‘X = Y’ is expressed as [X it/that/TOP Y]; or a focus marker, which is characteristic of the broader class of identificational constructions (see section 11.4).

Figure 10.1 summarizes the strategies for predication of various concepts and their diachronic extensions. Each strategy is given in italics, next to the construction where the strategy ultimately originates, according to Stassen. The arrow indicates that each strategy can be recruited for another function. For example, the verbal strategy originates in action predication and it can be recruited by the property predication construction. More precisely, the property predication construction may recruit the action predication construction, which usually employs the verbal strategy.

The lines joining the different types of predication – action, property, object, locative – and identity statements represent possible paths of recruitment. The lines do not have arrows, because recruitment can go in either direction. For example, the property predication construction can recruit the action predication construction; but the action predication construction can also recruit whatever strategy is being used by the property predication construction. However, the action predication construction cannot recruit the strategy used by the object predication construction; that can happen only if the property predication construction has recruited the object predication construction first.

It can be seen from Figure 10.1 that **no strategies originate in object predication or property predication** (but see note 2 below). The verbal strategy originates in action predication. The nominal strategies – nonverbal copula and zero strategies – originate in identity statements, which are equational. The locational strategy

originates in locative predication. It is perhaps worth noting that some instances of locative “predication” are in fact presentational (see section 10.4.3), so the sources of all the major strategies other than the verbal strategy may be nonpredicational. Finally, the object predication and property predication functions also act as channels through which the verbal, nominal (nonverbal copula or zero) and locational (verbal copula) strategies are recruited by any other type of predication.

Hence, any type of predication, and also equational constructions, can be expressed via any of the four strategies; but which strategy is used depends on its point of origin and extension along the lines of the conceptual space. Stassen (1997) documents in great detail the competition and take-over of a nonprototypical predicate construction by a neighboring strategy in the conceptual space. Stassen argues that when two strategies are “competing” to take over predication of a particular semantic class, the strategies tend to divide the conceptual space in terms of aspectual concepts:

- Stative/dynamic, in particular when one strategy is used to express the state (being a student, being happy) and the other the process of entering into the state – that is, change of state (becoming a student, becoming happy; see section 6.2.1)
- Transitory/stable (see section 4.1.2): some properties are stable, or construed as such – for example, being smart or being a woman; other properties are construed as transitory, such as being sick or being happy; and all processes are transitory

These two aspectual properties were grouped together by Givón (1979:320–22) as **time-stability (*sem*)**, which is a scale from the most time-stable to the least time-stable: stative & stable > stative & transitory > dynamic & transitory.

Stassen identifies a number of universals regarding what he calls ‘switching’ between strategies for different semantic predication types, including those in (18):

- (18)
- a. In languages in which two competing strategies are used to express the contrast between being in a state (object or property) and entering into the state (change of state), the former is encoded by a nominal strategy and the latter by a verbal strategy (Ingressive Parameter; Stassen 1997:163).
 - b. In languages in which a property concept can be construed as either stable (called ‘permanent’ by Stassen) or transitory, the transitory construal is encoded by the verbal strategy, and the stable construal is encoded by a nominal strategy (Permanency Parameter; Stassen 1997:162).
 - c. In languages in which property predication is split between different types of strategies, human propensity properties will be encoded by the verbal strategy (Human-Propensity Universal; Stassen 1997:169). Human propensities are typically construed as transitory.
 - d. In languages where nonverbal strategies are taking over action (verbal) predication, nominal strategies are used for more time-stable aspectual categories, and locational strategies are used for less time-stable aspectual categories (Stassen 1997:304).

In all cases, strategies that originate in more time-stable predication constructions – object predication, and ultimately equational constructions – are used for the more time-stable member of the contrast. Strategies that originate in less time-stable predication constructions – action predication and location predication – are used for the less time-stable member of the contrast.

Two examples of the many that Stassen presents are given here to illustrate the general pattern. In Oromo, property predication uses either a verbal strategy or a nominal strategy (zero strategy in present tense, copula strategy in other tenses). In the verbal strategy, the meaning refers to entering in the state: the imperfect denotes the process of entering the state (19) and the past denotes the result of having entered the state (20; Owens 1985:82; cf. Stassen 1997:163):

- (19) re'ée-n sun ní guddat-ti
 goat-NOM those FOC **big-3PL.F.IMPF**
 'Those goats are getting big.'

- (20) ní guddat-an
 3PL.NOM **big-3PL.PST**
 'They have grown up.' [lit. 'They have become big']

In the nominal strategy, the property is predicated 'without any reference to the process which may have brought this property about' (Stassen 1997:164, example from Owens 1985:32):

- (21) inní gúddaa
 3SG.M.NOM old
 'He is old.'

In Maltese, a nominal strategy – either zero or a nonverbal copula – expresses object predication (Stassen 1997:211, from Borg 1987/88:63):

- (22) Pietru (hu) l-eżaminatur
 Pietru (3SG.M) ART-examiner
 'Pietru is the examiner.'

A locational strategy can also be used for object predication, but it expresses temporary predication of the object category (Stassen 1997:218, from Borg 1987/88:64):

- (23) Pietru qiegħed l-eżaminatur
 Pietru **be.PRS.3SG.M** ART-examiner
 'Pietru is temporarily the examiner.'

10.3 Object Predication and Property Predication

In section 10.2, it was observed that object predication and property predication constructions appear to lack any distinctive strategy of their own. Instead, strategies used for object and property predication are recruited from

semantically related predication constructions: action (verbal) predication and locative predication; and from equational constructions. For this reason, object and property predication constructions employ a wide range of strategies. Nevertheless, there are at least two broad generalizations that constrain the strategies found in object and property predication.

Two of the strategies described in section 10.2 lack an additional morpheme – that is, lack a copula; they are illustrated here for both object and property predication. The zero strategy, presumably recruited from equational constructions, lacks any copula and also lacks verbal inflection. The zero strategy is illustrated for Waskia in (24)–(25) (Ross and Natu Paol 1978:10, 11; cf. Stassen 1997:144):

- (24) aga bawa taleng-duap
 my brother policeman
 'My brother is a policeman.'
- (25) kawam mu ititi
 house the new\PL
 'The houses are new.'

The verbal strategy, recruited from action predication, also lacks any copula but the object concept word / property concept word has verbal inflections. The verbal strategy is illustrated for object predication in (26) from Menomini, compared to action predication in (27) (Bloomfield 1962:275, 51; cf. Stassen 1997:139; AI = Animate Intransitive); and for property predication in (28) from Guaraní, compared to action predication in (29) (Gregores and Suárez 1967:107, 137; cf. Stassen 1997:134–35):

- (26) awe:tok-ew
 spirit-3SG.AI
 '(He) is a spirit.'
- (27) pi:-w
 come-3SG.AI
 '(He) comes/came.'
- (28) ſe-raku
 1OBJ-warm
 'I am warm.'
- (29) o-puká
 3SBJ-laugh
 'He laughs.'

Stassen divides the copula strategies into verbal and nonverbal copulas. As noted in section 10.2, the nonverbal copulas are believed to be recruited from equational constructions, and are extended to object predication first; see examples (16)–(17) in section 10.2. Verbal copulas are generally recruited from locative predication constructions, and are extended to property

predication first; see example (15) in section 10.2. However, verbal copulas, at least for object predication, may be recruited from other sources. Stassen reports sources from dynamic verbs, such as ‘do/make/build,’ ‘happen/occur,’ ‘go/turn into/come/become’ and ‘act (like)’ (Stassen 1997:92–93). These sources undergo a semantic shift from denoting a dynamic process to denoting the result of that process, namely being an object (Stassen 1997:92–93, citing Langacker 1975).

A rare verbal source is the imperative of ‘see,’ found in the Present Tense Object/Property Predication Construction in Kpelle (Welmers 1973:253; glosses from Stassen 1997:92):

- (30) `káa à 6óa .
 3SG.OBJ:COP COMP Knife
 ‘It is a knife.’

- (31) `káa à ñibíé
 3SG.OBJ:COP COMP dirty
 ‘It is dirty.’

The likely source for the recruitment of this construction is a presentational construction (see section 10.4.3), the other type of nonpredicational construction besides the equational construction. For this reason, Figure 10.1 includes presentational constructions as well as equational constructions.

A still more interesting source of verbal copulas is the introduction of verbal inflection to nonverbal copulas. For example, in Bribri, the copula appears to be etymologically ‘he/this’ combined with a voice suffix and the present tense (Stassen 1997:84; example from Pittier de Fabrega 1898:144; etymological analysis from Lehmann 1920:291):

- (32) tañí inan dñeríri irir
 tall and strong COP.PRS
 ‘He is tall and strong.’ (*irir* < *i* ‘he/this’ + *r* ‘neutro-passive suffix’ + *-ir* PRS)

These diverse strategies for object and property predication conform to (at least) two general universals. The first constrains the occurrence of strategies with and without a third morpheme – that is, a copula (of any type). Languages such as English use a copula (*be*) for both object and property predication constructions. Languages such as Mandarin Chinese use a copula for object predication constructions but not property predication constructions (Li and Thompson 1981:148, 143).²

² However, contemporary Mandarin has come to use *hěn* ‘very’ in a copula-like function (i.e. intensive meaning is not always entailed; Li and Thompson 1981:143–44), and Cantonese has done the same with *hóu* ‘good, very’ (Matthews and Yip 1994:158). This is a unique origin for a nonverbal copula to my knowledge, and represents a counterexample to the hypothesis that no predicational strategy originates in property predication.

Table 10.2 *Distribution of copula / no copula strategies in English, Mandarin, and Makah*

Predication of:	Actions	Properties	Objects
<i>English</i>	no copula	copula	copula
<i>Mandarin</i>	no copula	no copula	copula
<i>Makah</i>	no copula	no copula	no copula

- (33) Zhāngsān shì yi-ge hùshì
 Zhangsan COP one-CLF nurse
 ‘Zhangsan is a nurse.’

- (34) tā pàng
 3SG fat
 ‘She is fat.’

Finally, languages such as Makah do not use a copula for either object predication or property predication (Jacobsen 1979:110–11):

- (35) babałdis
 white_man:IND:1SG
 ‘I’m a white man.’

- (36) ?i:i;xʷ?i
 big:IND:3
 ‘He’s big.’

The distribution of copula / no copula strategies is given in Table 10.2, and the universal pattern it manifests is given in (37) (Croft 1991a:130; Stassen 1997:127).

- (37) a. If a language has a zero-coded predication construction for object concepts, then it has a zero-coded predication construction for property concepts;
 b. If a language has a zero-coded predication construction for property concepts, then it has a zero-coded predication construction for action concepts.

The universals in (37) constrain the distribution of zero-coded strategies (the zero strategy and the verbal strategy) vs. overtly coded strategies (nonverbal copula, locational and other verbal copula). The universals in (37) are an instance of the structural coding universal described in section 2.5.

As can be seen in Figure 10.1 in section 10.2, zero-coded and overtly coded strategies have different origins and spread through the conceptual space of predication in different ways. The universals in (37) hence represent a “conspiracy” such that zero-coded and overtly coded strategies do not spread through the conceptual space in such a way that a zero-coded strategy is used for object predication and an overtly coded strategy is used for property predication in a particular

language. That is, the universals in (37) represent a constraint on the relative spread of different strategies through the conceptual space of predication.

Stassen (1997) discovered a second major universal regarding property predication. Property predication may be expressed using a verbal strategy – what Stassen calls ‘verby [adjective] languages’ – or one of the strategies associated with nominal predication – what Stassen calls ‘nouny [adjective] languages’ (see Stassen 1997:343–44; Stassen notes that use of the locational strategy for property predication but not object or action predication is rare). Stassen explores possible relationships between various verbal inflectional categories and nouny vs. verby “adjectives” – that is, nouny vs. verby property predication. He observes two implicational universals which are not entirely exceptionless (Stassen 1997:349, 350):

- (38)
 - a. If a language has nouny adjectives, it will tend to have [person-number-gender] marking [indexation] on verbs.
 - b. If a language has nouny adjectives, it will tend to lack aspect marking on verbs.

However, Stassen discovered a much stronger, biconditional relationship between tense marking on a verb and nouny vs. verby “adjectives” that generally holds in his sample of 410 languages, which he calls the Tensedness Universal (Stassen 1997:357):

- (39) *Tensedness Universal:*
 - a. If a language is tensed, it will have nouny adjectives [property predication].
 - b. If a language is non-tensed, it will have verby adjectives [property predication].

Stassen describes ‘tensedness’ as a highly grammaticalized expression of tense:

- (i) it must be obligatorily expressed;
- (ii) it must be morphologically bound to the verb; and
- (iii) it must express a past–nonpast tense distinction (Stassen, like many others, notes that future is not just a tense but a modality, since future events are unrealized).

An example of a language that illustrates the universal in (39a) is Komi, also known as Zyrene (Collinder 1957:307, where the language is called Ziryene; cf. Stassen 1997:379). Komi obligatorily expresses a distinction between past and nonpast via a suffix on the verb (Collinder 1957:307, glossed by Stassen 1997:379):

- (40)
 - a. Mun-a-n
go-PRS-2SG
'you go'
 - b. Mun-i-n
go-PST-2SG
'you went'

Komi uses the zero strategy, a nominal strategy, to express property predication (Collinder 1957:301, as glossed by Stassen; the example uses a comparative form of the property concept ‘big,’ but the predication is all that matters here):

- (41) völ yžyž-žyk pon-ša
horse big-CMPR dog-besides
'The horse is bigger than the dog.'

An example of a language that illustrates the universal in (39b) is Moru (Stassen 1997:465, citing Tucker 1940). Verbs in Moru and other Central Sudanic languages distinguish two aspectual categories, called Definite and Indefinite. The Definite/Indefinite contrast to a stative / change of state aspectual distinction. The aspectual forms do not distinguish tense; example (42) is from the Indefinite aspect of Class I verbs in Moru (Tucker 1940:186, as glossed by Stassen):

- (42) anyà k-ɔdra
3PL 3PL.IMPF-die
'They are/were dying.'

The Moru property predication construction, like the action predication construction, inflects for aspect and indexes the subject argument (Tucker 1940:146, gloss from Stassen 1997:465):

- (43) lédr aná kʷɔizi
man that 3SG.IMPF-be_bad
'That man is bad.'

Stassen proposes an explanation for the Tensedness Universal in (39a–b), in which the verbal inflectional category is the explanatory parameter (Stassen 1997:ch. 13). Stassen suggests that the ‘default’ relationship between action predication and property predication is the state of affairs in (39b) – that is, that property concepts are predicated using the same strategy as action concepts (verbs) – this is the verbal strategy. This state of affairs holds when verbs are not tensed – that is, do not have a highly grammaticalized tense inflection. However, if languages come to grammaticalize a past–nonpast tense system, then property predication will shift to a nominal strategy (zero or copula strategies). The reason for this is that the past–nonpast tense distinction is relevant to actions, since they are dynamic and transitory events; but it is not relevant to, and to some extent not compatible with, the prototypical property concepts, which are stative and stable properties of objects.

Of course, the grammaticalization of tense is a gradual process, as is the ‘drift’ of property predication away from a verb strategy to one of the nominal strategies. The gradual processes give rise to a number of intermediate cases in which the languages are mixed in their strategies, or even seem to violate the Tensedness Universal (discussed in Stassen 1997:ch. 12).

Stassen’s analysis of action, property, and object predication stands as one of the most thorough and detailed typological studies ever undertaken.

10.4 Location and Possession Clausal Constructions: Predicational and Presentational

10.4.1 Location Clauses

Location clauses (*cxn*) are clauses in which a locative relation is expressed, either predicationally or presententially. These two types of location clauses will be called **predicational location** (or **locative predication**) (*inf/cxn*) and **presentational location** (*inf/cxn*), respectively. This section describes locative predication constructions; presentational location constructions will be discussed in section 10.4.3, after presentational possession constructions are introduced.

Locative predication differs from object, property, and action predication in that there are three primary semantic components (see sections 4.1.4, 7.3.1): the referent whose location is being predicated, which functions as the figure in the locative relation; the referent which serves as the ground object for defining the locative relation; and the locative relation itself, the path. The path and ground object together form the **location (*sem*)** of the figure. The location is what is predicated of the figure in the locative predication construction.

As noted in section 10.2, locative predication is the origin of one of the common strategies for property, object, and action predication – namely, a strategy based on a locative verb. The locative verb is often historically a posture verb. In Dutch, the posture verbs are the more typical locative verb for simple locative predication, although the verbal copula *zijn* ‘be’ is a possible, but less idiomatic, alternative in some cases (van Oosten 1986:138; example from p. 139):

- (44) Het boek ligt op de tafel.
 the book lies on the table
 ‘The book is on the table.’

Example (44) also includes an adposition which contributes to the expression of the locative relation.

In Yabem, there is a single locative verb, which is used only for locative predication and does not require any additional locative expression such as an adposition (Bradshaw and Czobor 2005:86; cf. Stassen 1997:58):

- (45) àndu kē-kō malac
 house 3SG-be_LOC village
 ‘The house is in the village.’

Russian uses a zero strategy for present tense locative predication, accompanied by flagging (a locative case suffix and an adposition; Stassen 1997:59, from Fennell 1961:57):

- (46) moja sestra v Moskv-e
 my sister in Moscow-LOC
 ‘My sister is in Moscow.’

The verbal strategy is also found for locative predication. In Kalispel, it is found with locative pronouns such as 'here' (Vogt 1940:69; cf. Stassen 1997:143):

- (47) čin-es-əl'ēi
 1SG-CONT-here
 'I am here.'

Finally, a verbal strategy can even be combined with a flag, as in Acehnese where a proclitic flag is combined with an enclitic verbal person index (Durie 1985:126; cf. Stassen 1997:141):

- (48) abang di=keude=geuh
 elder_brother at=town=3sg
 'Elder brother is in the town.'

The verbal strategy most clearly construes the ground as part of the locative predication. This contrasts with the common construal of the ground as a referring phrase functioning as an argument of the predicate, as with the Dutch, Yabem, and Russian examples in (44)–(46). The incorporation of the ground "argument" as part of the predicate more closely resembles the predicativization strategy that we will encounter in possession clauses, the topic of the next section.

10.4.2 Possession Clauses

Possession clauses (*cxn*) are those in which a **possession relation** (*sem*) is expressed. In this section, we define these terms (more precisely, we rehearse the definition of these terms from earlier sections of this textbook), and discuss the major strategies for possession clauses.

A possession relation is a relation of a certain degree of control by a possessor over a possessum (see section 4.1.4). The strongest degree of control is ownership, a culturally defined right over the possessum, as in *Judy has/owns a car (but I use it all the time)*. Weaker degrees of control are temporary possession, as in *I have a car to go to the party (but it belongs to Judy)*; and physical contiguity, as in *I want to fill in this form; do you have a pen?*, which need not imply that you own the pen or even have temporary possession, just that you have a pen at hand (Heine 1997:34–35). Possession clauses may also express the semantic relations normally characterized as inalienable possession (see section 4.1.4) – namely, body parts (*I have brown eyes*), part–whole relations (*The stool has a back*), and kinship relations (*I have a brother*).

Possession, like location, has three components: the possessor, the possessum, and the possessive relation that holds between them. There are two types of possession clauses that are frequently distinguished, and are illustrated in (49)–(50):

- (49) That laptop belongs to Kerry.
 (50) Kerry has a laptop.

Heine describes (49) and (50) as instances of ‘belong’ possession and ‘have’ possession, respectively.

The difference between ‘belong’ possession and ‘have’ possession has been analyzed in slightly different but related ways (Koch 2012:537–38). One analysis is in terms of ‘information flow’ (Seiler 1983:61, Koch 2012:538): in ‘belong’ possession, information flow is from possessum to possessor; in ‘have’ possession, information flow is from possessor to possesum. Information flow is reflected iconically in the word order of the English possession constructions in (49)–(50). The other analysis is in terms of the information packaging model presented in section 10.1 (Hengeveld 1992:118–21). In this analysis, ‘have’ possession is for the most part **presentational possession (cxn)**, presenting the possesum. ‘Belong’ possession, on the other hand, is **predicational possession (cxn)**, predicated of the possesum (Stassen 2009:28, Koch 2012:540–41; Hengeveld more neutrally calls it ‘non-presentational’). We adopt the latter analysis.

The English sentences in (49)–(50) also differ as to whether the possesum is definite or indefinite (section 3.3.1). The definite possesum in (49) is to be expected in predicational (topic–comment) possession because it is the topic: topics are typically definite. The indefinite possesum in (50) is also the usual case in presentational possession, since it presents a new, not yet identified, object into the discourse.

In presentational possession, the indefinite possesum is introduced to the hearer: in the file metaphor, the hearer is instructed to open a new file, albeit one anchored (see section 5.2.1) to the possessor’s discourse file by a possession relation. Although the new referent is anchored to the (identifiable) possessor, the relation between the possessor and possesum is also new – hence the analysis of possession of an indefinite possesum as presentational – that is, a type of thetic function (see section 11.3).

Stassen and Heine suggest that, even when a language uses very similar constructions for predicational and presentational possession, the two constructions are generally distinguishable. For example, Latin uses the same verb (the copula). Since there are no articles in Latin, definite and indefinite possesum phrases look the same (Stassen 2009:29):

(51)	Est	mihi	liber
	be.3SG.PRES	1SG.DAT	book:NOM.SG
‘I have a book.’			

(52)	Gallia	est	Ariovisti
	Gallia:NOM	be.3SG.PRES	Ariovistus:GEN
‘Gallia belongs to Ariovistus.’			

Stassen cites Benveniste (1971:170–71) and Bolkestein (1983) to argue that, when the possessor is expressed in the Dative case, as in (51), the possesum is new information, i.e. presentational; but when the possessor is expressed in the Genitive case, as in (52), the possesum is the topic, i.e. it is predicational possession.

Heine and Stassen focus on presentational possession (Stassen exclusively so); Stassen (2009:30) notes that predicational possession is rarely described in reference grammars. This section will focus on presentational possession, and return to predicational possession briefly at the end. The discussion is based primarily on Stassen's survey of around 425 languages. Stassen's classification of strategies is based on the argument structure of the possession clause (Stassen 2009:48).

Stassen defines a **locational possessive strategy (str)** as one in which the possessum is expressed in a subject phrase and the possessor in an oblique phrase which is locative, or (probably) locative in origin, and is usually translated as 'be,' 'be_located' or 'exist.' Hence, a literal translation would be '[Possessum] is at [Possessor].' The locational possessive strategy essentially recruits a locative clause, specifically a presentational locative (see section 10.4.3), to express possession. A typical example of the locational possessive strategy is found in Nivkh (Gruzdeva 1998:19; cf. Stassen 2009:52):

- (53) oyla-gu-in czuz pityy-Ø jiv-ny-d'-ra
 child-PL-LOC new book-NOM be-FUT-FIN-PRED
 'The children will have new books.'

Heine calls this strategy the 'location' strategy. He distinguishes it from his 'goal' strategy, which is identical to his 'location' strategy except that the possessor is expressed by a "dative" argument phrase (i.e. spatial allative, but also nonspatial recipient/beneficiary). The dative strategy is quite common, and is illustrated in (54) from Yakut (Stassen 2009:51, from Böhtlingk 1964:128):

- (54) mijiä-chä taba baar
 1SG-DAT reindeer exist
 'I have reindeer.' [lit. 'To/for me a reindeer exists']

Stassen treats constructions with a "dative" argument phrase as instances of his locational possessive strategy, because they pattern with the locative argument phrase in Stassen's language universals, described near the end of this section.

Stassen identifies two variants of the locational possessive strategy; these variants occur with other strategies as well. The first variant has a zero strategy for the locative or locative-like predicate. For example, the Kabyle possession clause uses a zero strategy (Nait-Zerrad 2001:130; cf. Stassen 2009:80):

- (55) yur-s takerrust tamellalt
 at-him car white
 'He has a white car.'

This variant reflects the zero strategy for locative clauses (see section 10.4.1).

The other variant indexes the possessor on the possessum argument phrase, as well as expressing the possessor as a locative argument phrase dependent on the predicate. This variant is rare in the locative possessive strategy (Stassen

2009:75); an example from Tyvan is given in (56) (Anderson and Harrison 1999:31; cf. Stassen 2009:76):

- (56) men-de üš ugba-lar-im bar
 1sg-LOC three sister-PL-my be.PRS
 'I have three sisters.'

This variant can be compared to expression of the recipient as both external and internal possessor in ditransitive constructions (see section 7.5.3).

The possessum is frequently non-initial, a common word order of a presentational locative (see section 10.4.3). In (53)–(56), the possessor, although expressed in an oblique phrase, is clause-initial, not unlike the oblique (usually dative) experiencer strategy found for experiential constructions in section 7.4. An experiencer in an experiential construction is also more topical than the stimulus, which is also typically non-initial (see also section 10.4.3).

Stassen's second strategy is the **with-possessive strategy (str)**: the possessor is expressed in a subject phrase, and the possessum is expressed in a comitative phrase. Hence, a literal translation would be '[Possessor] is with [Possessum]'. This strategy corresponds to Heine's 'companion' strategy. The with-possessive strategy is illustrated in (57) from Kukú (Cohen 2000:133; cf. Stassen 2009:56),

- (57) ḥm gbóŋ kɔ pílili
 1SG be with pilili
 'I have a pilili.'

The with-possessive strategy also occurs with the zero variant for the locative or locative-like predicate, as in (58) from Amele (Roberts 1987:138; cf. Stassen 2009:56):

- (58) ija sign ca
 1SG knife with
 'I have a knife.'

The with-possessive strategy also occurs, albeit rarely, with the possessor indexed on the possessum, as in (59) from Rotuman (Churchward 1940:23; cf. Stassen 2009:77):

- (59) ia ma 'on 'eap fol
 3SG with his mat three
 'He has three mats.'

Stassen's third strategy is the **topic possessive strategy (str)**: the possessor is expressed like a 'topic phrase' (but see below), and the possessum is expressed in a subject phrase, the subject of a verb glossed as 'exist' or 'be located' (analogous to the locative possessive strategy). Hence a literal translation would be something like 'As for [Possessor], [Possessum] exists.' This strategy corresponds to Heine's 'topic' strategy. The topic possessor strategy is illustrated for Arleng-Alam in (60) (Grüssner 1978:136; cf. Stassen 2009:59):

- (60) nè po chày-nōng jōn-nî dō
 1SG father cow CLF-two exist
 'My father has two cows.' [lit. 'As for) my father, two cows exist']

Heine illustrates the topic possessive strategy for expressing a kinship relation in Cahuilla (Seiler 1983:58; cf. Heine 1997:62):

- (61) né? né-pas Ø-híw-qal
 I 1sg-older.brother 3SG-live-DUR
 'I have an older brother.'

The topic possessive strategy also occurs in the variant with a zero strategy. This leads to the striking situation where two juxtaposed referring phrases can express a possessive relation, as in (62) from Northern Tepehuan (Bascom 1982:283; cf. Stassen 2009:86):

- (62) gííka go-kííli
 plow ART-man
 'The man has a plow.'

In such languages, the predicate nominal construction also uses the zero strategy (Stassen 2009:82). Thus, a sentence like (62) could also mean 'The man is a plow'; but this interpretation is normally excluded because it is nonsensical (Stassen 2009:83).

The topic possessive strategy also occurs with the internal possessor – that is, the possessor is indexed on the possessum. This is a fairly common variant of the topic possessive strategy, in comparison to the other possessive strategies (Stassen 2009:71). An example of this variant of the topic possessive strategy is given in (63) for Mayan (Hofling 2000:286; cf. Stassen 1997:73):

- (63) ten-ej yan in-wakax
 1SG.PRN-TOP exist 1SG.POSS-cattle
 'I have cattle.'

Some further issues in defining the topic possessive strategy will be discussed toward the end of this section.

Stassen's fourth strategy is the **have-possessive strategy (str)**: the possessor is expressed in a subject phrase, and the possessum in an object phrase. This strategy corresponds to Heine's 'action' strategy for presentational possession. The have-possessive strategy is illustrated for English in (50) above, *Kerry has a laptop*. The 'have' predicate is often historically derived from verbs meaning 'hold,' 'grasp,' or 'take' (Givón 1984:103; Heine 1997:90; Stassen 2009:63). However, there are other sources of the 'have' predicate, described below.

The have-possessive construction does not have a zero variant, because the zero variant is specifically found with locative-like predicates. The internal possessor variant is quite rare with the have-possessive strategy (Stassen 2009:77). It is illustrated in (64) from Pipil (Campbell 1985:119; cf. Stassen 1997:78):

- (64) ni-k-piya se: nu-finkita
I-it-have a **my-small_farm**
 'I have a small farm.'

Although, in principle, a variety of hybrid strategies could occur, only one actually occurs in Stassen's sample: the **topic–locational hybrid possessive strategy (str)** (Stassen 2009:96–106). The topic–locational hybrid strategy expresses the possessor like a topic phrase and also as a locative argument phrase indexing the possessor; the possessum is expressed as a subject argument phrase of the locative-like predicate. Example (65) illustrates the topic–locational hybrid strategy in Eastern Tarafit (Kossmann 2000:101; cf. Stassen 2009:97):

- (65) lyula ttuya yr-es idž • n wəzeuq
gress was **at-her** one of little_donkey
 'The ogress had a little donkey.'

Stassen describes another strategy, the **adnominal possessive strategy (str)**, called the 'genitive' strategy by Heine, in which the possessor is expressed only as a genitive phrase (possessive modifier; see section 4.1.4) – unlike the internal + external possessor variants of the four main possessive strategies described above. An example of the adnominal strategy for Mokilese is found in (66), where adnominal possession is expressed using a classifier strategy (see section 4.4.3; (66) is from Harrison 1976:211):

- (66) mine woaroa-n woallo war
 exist **CLF-3SG** man:that canoe
 'That man has a canoe.' [lit. 'That man's canoe exists']

Stassen argues that the adnominal strategy is not a distinct strategy on a par with the four major strategies he posits (Stassen 2009:ch. 4). Stassen proposes that the adnominal strategy is just a more grammaticalized version of the locational or topic possessive strategies: the possessor has been reanalyzed as a modifier of the possessum. He argues that if the genitive (attributive possessive) relation is overtly coded, then the adnominal strategy originated from a locational possessive strategy; if the attributive possessive relation is zero coded, then the adnominal strategy originated from a topic possessive strategy.

For example, in many languages, a genitive (possessive) flag is identical to, or historically derived from, a locative flag. In Kamass, the two semantic relations are expressed by a single case suffix *-n* (Künnap 1999:39, 41, 16; cf. Stassen 2009:124; LAT = Lative):

- (67) búžə-n nāyur ko?bdo-t i-bi
 old_man-GEN three daughter-3SG.POSS.NOM be-3SG.PST
 'An old man had three daughters.'

- (68) īne-n olža
 horse-GEN cloth
 'the horse's harness'

- (69) bü-n üstəbiəm
water-LAT let_fall.1SG.PST
'I let it fall into the water.'

Stassen argues that, while there is plenty of evidence for the grammaticalization of locative flags to genitive flags, there is no evidence of the reverse direction of change (Stassen 2009:127, n. 6). Also, the overtly coded adnominal possession strategy occurs in regions where otherwise the locative strategy predominates (Stassen 2009:127–30). This suggests that a possessor expression can originate as an argument phrase of the predicate and then be reanalyzed as a modifier of the phrase expressing the possessum.

Stassen uses the same geographic co-location argument to support his analysis of zero-coded adnominal possessive strategy as a special case of the topic possessive strategy. Indeed, Mokilese has an alternative possession construction to the adnominal strategy in (66) that uses the topic possessive strategy, where the possessor is clause-initial and thus separated from the phrase expressing the possessum (Harrison 1976:212; cf. Stassen 2009:131):

- (70) woallo mine woaroa-h war
man:that exist CLF-3SG canoe
'That man has a canoe.' [lit. 'That man, exists his canoe']

Stassen also provides evidence that the intransitive possessive strategies – locative possessive, with-possessive, and topic possessive – can grammaticalize into the transitive have-possessive strategy (Stassen 2009:6). Stassen calls this phenomenon 'Have-Drift.' Have-Drift is most straightforward when it originates from the with-possessive strategy, where the possessor is already the subject: 'X is with Y' > 'X is-with Y' > 'X has Y.' In Somali, 'have' is *leh-yahay*, which is the copula verb *aho/ahay* combined with the morpheme *leh* which may be related to the comitative *-la* (Stassen 2009:210; etymology from Moreno 1955:113; example from Serzisko 1984:179):

- (71) nin-kii baabuur ay leh-yahay
man-ART car FOC.3SG.M **with-be/have.3SG.M.PRS**
'The man has a car.'

If there is no copula, the 'with' form may simply be reanalyzed as a 'have' predicate, as can be seen in example (72) from Swahili; compare (73), in a tense form that requires the copula *wa* (Ashton 1947:98, 144; glosses from Stassen 2009:216):

- (72) ni-na kisu
1SG-with knife
'I have a knife.'
- (73) a-li-ku-wa na watoto wengi
3SG-PST-INF-be **with** children many
'He had many children.'

For the topic possessive strategy to evolve into the have-possessive strategy, the possessor-topic has to be reanalyzed as the subject phrase, and the possessum subject phrase has to be reanalyzed as the object phrase. This reanalysis is motivated by the preference for a definite referent to be the subject (i.e., most salient referent) in the clause, and the indefiniteness of the possessum referent.

A shift to subject role is clearest when the subject role is expressed by an overt encoding strategy such as indexation. In Fehan Tetun, there appears to be a shift from a topic possessive strategy to a have-possessive strategy: the copula ó may index either the possessum (topic possessive strategy, as in [74] from van Klinken 1999:189), or the possessor (have-possessive strategy), as in (75) from van Klinken 1999:188; cf. Stassen 2009:223–24):

- (74) ami, osan n-ó, mortén n-ó
1PL.EXCL money 3-exist beads 3-exist
'We have money, we have beads.'
- (75) kalo belu ó osan la m-ó...
if friend 2SG money not 2SG-have/exist
'If, friend, you have no money...'

The shift from the locational possessive strategy to the have-possessive strategy is very rare. Stassen suggests that it occurs indirectly, via reanalysis of the oblique possessor as a topic and then a subject (not unlike the reanalysis of an oblique experiencer as a subject; see section 7.4). The few cases described by Stassen include those where the 'exist' verb comes to index the possessor (Cornish) and those where the oblique flag is merged with the 'exist' verb (some varieties of Breton and Damana; Stassen 2009:230–39).

Finally, the with-possessive strategy may not just reanalyze the 'with' case marking as (part of) the predicate, but also incorporate the possessum noun as part of the predicate: 'X is with Y' > 'X is-with-Y' (Stassen 2009:ch. 5). Stassen describes this as a **predicativization strategy (str)** (albeit, for him this strategy is a subtype of the with-possessive strategy).

Stassen distinguishes two subtypes: one in which the with + possessum predicate is inflected for verbal categories (the flexional sub-strategy) and one in which it is not (the copular, including zero, sub-strategy). Stassen further argues that the flexional sub-strategy arises in languages in which property predication is 'verby,' and the copular sub-strategy arises in languages in which property predication is 'nouny' (see section 10.3; Stassen 2009:141).

For example, in Tundra Yukaghir, the flexional sub-strategy is found, as in (76): the possessum 'dog' has a Comitative suffix and indexes the possessor (Maslova 2003:70). Property predication is 'verby,' as in (77): it indexes the subject argument like a verb (Maslova 2003:58; see Stassen 2009:140–41):

- (76) marqa-n lame-n'-ŋi
one-ATTR dog-COM-3PL.INTR
'They had one dog.'

- (77) t'awul-hane lawje-ŋ el'-amo-o
 sea-LOC water-FOC NEG-be_good-3SG.STAT
 'The sea water is not good.'

In contrast, in Pitjantjatjara, the predicate consists of the root denoting the possessum combined with what is usually called the ‘propriative’ suffix in Australian languages, meaning ‘having (X),’ as in (78) (Douglas 1964:79; cf. Stassen 2009:140; RVRS = reversive). The proprietive suffix can be glossed ‘with’ as well, at least in this construction.

- (78) nyuntulu kiŋi-tjara-munu
 2SG.ABS **gum-PROP/with-RVRS**
 'Have you no spinifex gum?'

Stassen suggests that the with-possessive strategy undergoes ‘adjectivalization’ first – that is, the possessum plus oblique flag is reanalyzed as a derived adjectival form – hence the description of the suffix on ‘gum’ in (78) as a proprietive derivational suffix. The derived form including the root denoting the possessor is then predicated in the same way that other property concepts in the language are predicated. Pitjantjatjara uses a zero strategy for property predication, as in (79) (Douglas 1964:68; cf. Stassen 2009:142):

- (79) lampi pulkanya
 white_ant_hill large
 'The white-ant hill is large.'

With all of these historical processes leading to changes in the possessive strategy, including to adnominal and predicativization strategies, not to mention the zero and internal possessor variants and the topic–locational hybrid strategy, it is sometimes challenging (and perhaps pointless) to identify which strategy is used in a particular language. Chappell and Creissels (2019) argue that many, if not all, of the languages in the East/Southeast Asia area that Stassen classifies as using the topic possessive strategy are actually instances of the have-possessive strategy, including Mandarin Chinese (Chappell and Creissels 2019:484, attested example):

- (80) wǒmen cūn lóu, Lǎo Sūn jiā yǒu yí-ge fèndi
 1PL village PRT Lao Sun family **have/exist** one-CLF cemetery
 '(In) our village, the Sun family had a plot in the cemetery.'

The two translations of *yǒu* represent the two analyses. Chappell and Creissels argue that *yǒu* should be translated as ‘have’ – i.e. it recruits the transitive construction. Stassen argues that *yǒu* should be translated as ‘exist’ – i.e. it recruits the intransitive construction, the possessum phrase is the one argument of *yǒu*, and the possessor referring phrase is not an argument of *yǒu*.

Chappell and Creissels’ arguments focus on pragmatic and morphosyntactic properties. They argue that the referring phrase that precedes *yǒu* does not exhibit the pragmatic properties of a topic that is not an argument of the predicate

(a ‘hanging topic’; see section 11.2.3; Chappell and Creissels 2019:489–93). They also argue that the possessor is coded as an argument of *yǒu*, and hence *yǒu* is a transitive predicate, albeit a nonprototypical one (Chappell and Creissels 2019:494–95).

Chappell and Creissels then argue, on the basis of a survey of seventy-one East and Southeast Asian languages, that all of the possession clause constructions in these languages are instances of the have-possessive strategy. In particular, in Longxi Qiang and two other Qiang varieties, the predicate indexes the possessor as if it were an argument, and not the possessum (Chappell and Creissels 2019:516, from Zheng 2016:277):

- (81) qâi ɳò ɳó=à •
 1SG:EMPH leg have=1SG:IPFV
 ‘I have legs.’

Finally, Chappell and Creissels argue that there is no language that uses the topic possessive strategy as its sole strategy for presentational possession (Chappell and Creissels 2019:474).

Stassen’s description of the topic possessive strategy is based on its argument structure. Stassen does not claim that the topic possessive is a hanging topic construction with the pragmatic function of that construction. He only argues that the topic possessive strategy recruits (Stassen 2009:58; his term for recruitment is ‘is constructed as’) the argument structure of a construction with only one core argument and one “topic” argument, and that the core argument is the possessum. Hence, the pragmatic arguments are not relevant to Stassen’s analysis.

The encoding arguments, however, are relevant. The main issue here is that in many languages, including the majority of languages in the East/Southeast Asia area, there is no flagging or indexation of core arguments. The structure is simply encoded by word order, most commonly [Possessor Predicate Possessum] or [Possessor Possessum Predicate]. A “topic” (non-argument) phrase is very commonly initial, and a subject argument phrase (transitive A or intransitive S) is typically preverbal (in SVO or SOV languages – i.e. the great majority of the world’s languages). These word order encodings are therefore ambiguous, especially if the ‘exist’/‘have’ predicate has postverbal order for its single core argument in the ‘exist’ interpretation (with a possessor), as in Mandarin (Chappell and Creissels 2019:485). In these languages, it is indeed difficult to decide whether the construction has only the possessum as an argument (the topic possessive strategy), or whether both possessor and possessum are arguments (the have-possessive strategy).

There is a minority of languages in which flagging or indexation occurs in Stassen’s sample (about 20 percent of his topic possessive strategy languages). In about half of such languages in Stassen’s sample, the possessor is indexed as in Longxi Qiang, and Stassen analyzes those as instances of Have-Drift – that is, they have been reanalyzed as using the have-possessive strategy. In the other half, the possessum is encoded as the subject argument of the intransitive

construction.³ Example (82) illustrates indexation of the possessum in Aghu (Stassen 2009:480, from Drabbe 1957:32; see also the Cahuilla example [61] above).

- (82) jogho sogho de i-ge
 3PL land here be/stand-3SG.PRS
 'They have land.'

The salient fact in all of the examples above is that the possessor referring phrase is usually in initial position, which could be interpreted as either a topic or subject position, even when the possessum is indexed on the predicate. Stassen decides against calling the topic possessive strategy a 'double subject' strategy (Stassen 2009:59, n. 8, citing Seiler 1983:60). Seiler also suggests the term 'distributed subject,' which perhaps more accurately describes the crosslinguistic pattern. The possessor phrase is typically clause-initial and hence preverbal, i.e. where a subject argument phrase is expected. The possessum phrase is sometimes in a position compatible with interpretation as a subject phrase. The possessor phrase may have a topic marker, as in the Itzaj Maya example (63) above, or lack a flag. The possessum phrase may have a subject marker, or be indexed on the predicate like an intransitive subject (S role). In other words, in constructions that Stassen analyzes as using the topic possessive strategy, but that have not obviously undergone Have-Drift, the encoding properties of a subject phrase in an ordinary transitive or intransitive construction appear to be distributed across both possessor and possessum.

It is also clear that in all of these cases, Have-Drift is occurring; see, for example, the shift of indexation from the possessum to the possessor in Fehan Tetun in (74)–(75). That is, the important conclusion is that there is a unidirectional shift from the possessum being encoded as the one core argument of an intransitive predicate to the possessor being encoded as an additional core argument of a transitive predicate, even if there are many particular cases in which it is not obvious how far along the construction is in the process of Have-Drift.

Stassen seeks an explanation for the occurrence of the different 'have' type possession clause strategies, just as he did for the occurrence of the nominal and verbal strategies for predicative possession. In this case, however, the universals are more complex. They also make essential reference to coordinate clause constructions, which are not described in this textbook until Chapters 15–16. For this reason, we simply present Stassen's proposed universals; the coordinate clause strategies are explained in sections 15.1–15.2 and Chapter 16. We do not discuss the evidence Stassen presents for the universals (which takes up nearly

³ A slightly larger group of constructions use the topic–locational strategy, in which the possessum is encoded as the core argument of an intransitive predicate, and the possessor is encoded as both a "topic" phrase (without a flag) and as a locative argument coreferential to the "topic" phrase.

500 pages of Stassen's monograph). The universals are given in (83) (Stassen 2009:274, reworded using the terminology in this book):

- (83) a. If a language uses the locational possessive strategy, then it uses the deranked strategy for the coordination of simultaneous events with different subjects (section 15.2.3; section 16.3).
- b. If a language uses the with-possessive strategy, then it uses the deranked strategy for the coordination of simultaneous events with different subjects.
- c. If a language uses the (standard) topic possessive strategy, then it uses the balanced strategy for the coordination of simultaneous events with different subjects, and it does not use the locative strategy for object predication (see sections 10.2–10.3).
- d. If a language uses the have-possessive strategy, then it uses the balanced strategy for the coordination of simultaneous events with different subjects, and it may use the locative strategy for object predication.

Predicational possession is examined in Clark (1978), along with presentational possession and both predicational and presentational locatives (see sections 10.4.1 and 10.4.3). Clark surveys a sample of over thirty languages. She finds that predicational possession is expressed with the same construction as presentational possession in the majority of languages in her sample. In particular, they use the same predicate (Clark 1978:104, table 7) and the same word order – namely, possessor phrase precedes possessum phrase (Clark 1978:98, table 4). Many of the predicative possession constructions using different verbs also have possessor–possessum word order (compare her tables 4 and 7). Most of the languages with the opposite word order – possessum phrase preceding possessor phrase – have distinct possession constructions for predicational and presentational possession (Clark 1978:98, table 4). The predicative possession construction has the opposite word order, and recruits its predicate from the predicational locative construction or the predicate nominal construction (Clark 1978:102–5).

For example, English distinguishes predicational and presentational possession, as illustrated above in (49) (*This laptop belongs to Kerry*) and (50) (*Kerry has a laptop*). Example (49) has recruited a verbal strategy (Heine's 'action' strategy again), with the verb *belong*, to express predicational possession. English predicational possession may also recruit a nominal strategy, as in (51):

- (84) That laptop is Kerry's.

Example (84) is like an equational construction in that *Kerry's* is an anaphoric-head construction (see section 5.4): that laptop = *Kerry's [laptop]*. In the file metaphor, the hearer is instructed to merge the files for "that laptop" and "*Kerry's [laptop]*." An equational construction is never recruited for 'have' possession (Stassen 2009:30; Heine 1997:92). Example (84) may represent an equational rather than predicational packaging of the possession relation.

In sum, in the majority of languages, predicational possession is similar or identical to presentational possession, in particular with the word order of possessor before possessum. Clark suggests this word order is motivated by the animacy of the possessor, which is almost always human (Clark 1978:117–20).

10.4.3 Strategies for Presentational Constructors

In section 10.1.2, the presentational information packaging function was defined as ‘to make the identity of the referent known to the hearer’ (Stassen 1997:101). The prototypical example of the presentational function is **presentational location** (*inf/cxn*), whose primary function is its use ‘in communicative settings where the relevant information is the presence of an entity at some place and its identification’ (Creissels 2019:41; it should be noted that Creissels analyzes the construction in question in terms of ‘perspectivization,’ resembling the notion of ‘information flow’ in section 10.4.2, rather than as the presentational function).

One common context for presentational location is to identify the presence of an object in the vicinity of the speech act situation, as in *There's a coyote in the backyard!* Another common context is when an actor in a narrative is introduced, as in this example from the Pear Stories narratives:

- (85) 3,25 **there are three other boys,**
 3,26 . . who are there.

Presententials in discourse are often accompanied by extra information about the introduced referent, as in the second intonation unit in (85). This extra information is typically locative, as in (85); but it may simply describe what the actor is doing, as in (86):

- (86) 8,2 [3+ u-h [.3]] **there's a— .. man,**
 8,3 [.45] **picking pears,**

As with possession constructions, predicational vs. presentational construal can be operationalized using the definiteness of the argument denoting the figure in the spatial locative relation: in predicational location, the figure is definite, and in presentational location, the figure is very likely to be indefinite. (It is possible to have a presentational definite when a referent reappears, as in *There's the dog in the garden (again)*; Hengeveld 1992:118.)

More recent work has emphasized the distinction between location, particularly presentational location, and **existential** (*sem*) situations (Koch 2012:538–43; García Macías 2016:55–57; Creissels 2019:43–47; see also section 11.3.1). A locative relation describes a specific object in a particular location, as in *There is a book on the table* (presentational) or *The book is on the table* (predicational; Koch 2012:538). An existential situation simply asserts the existence, prototypically of a type (i.e. a generic meaning), as in *There are many unhappy people* (Koch 2012:538–39).

While these examples present the maximum contrast between location and existence, there are intermediate cases of different kinds. Creissels distinguishes the situations of ‘habitual presence of an entity at some place (*There are many books in this library*), or availability of an entity at a place where it can be expected to be found (*There is cod at the fish market today*)’ (Creissels 2019:52). These situations may be expressed by a different construction than the prototypical presentational location ‘used to express episodic presence of a mobile entity at some place’ (Creissels 2019: 52). Note that Creissels’ examples involve a type rather than a specific individual. He focuses on constructions for the prototypical case of a specific (mobile) entity, not least because these fine-grained semantic distinctions are not made in descriptive grammars (Creissels 2019:53).

Conversely, an existential situation may be spatially bounded, yielding what Koch calls a ‘bounded existential,’ such as *There are lions in Africa* (Koch 2012:539). Koch notes that it is very difficult to distinguish a ‘bounded existential’ interpretation from a presentational location interpretation (Koch 2012:577):

- (87) There is a lot of beer in the fridge.
 [presentational location context: We cannot put anything else in the fridge.]
 ['bounded existential' context: We will have enough to drink.]

Koch’s presentational location context focuses on a spatial property of the location: is there enough room in the fridge to put anything else in? His ‘bounded existential’ context focuses on a property of the type: alcohol is available in sufficient quantity. This ambiguity is due to the fact that the English phrase (*a lot of*) beer is able to denote either a specific quantity (an amount to fill the fridge) or a generic type (alcoholic beverage).

For the most part, the examples in this section will involve clear cases, or at least as clear as sentences in isolation can be: presentational location constructions indicating the presence and spatial location of a specific indefinite individual figure. We will draw on Clark (1978), based on a survey in more than 30 languages of presentational vs. predicational location vs. possession constructions; Koch (2012), based on an 18-language survey of predicational location, presentational location, existential, and presentational possession constructions in mostly European and African languages; and Creissels (2019), a survey of a subset of presentational location construction strategies in more than 700 languages.

All three surveys indicate that a large proportion of presentational location constructions simply recruit the predicational location construction in the language (section 10.4.1). We will describe this as the **predicational locative strategy (str)**. Many languages use the same construction in both functions, with the same word order, figure phrase preceding locative (ground object) phrase. An example of such a language is Welsh (Feuillet 1998:691; cf. Creissels 2019:51):

- (88) Mae'r car yma
 is'the car here
 'The car is here.'

- (89) Mae car yma
is car here
'There is a car here.'

Other languages use the same predicate and the same argument structure, but the word order is reversed for the presentational locative construction, as in Estonian (Koch 2012:568):

- (90) raamat on laua-l
book be.PRS.3SG **table-ADESS**
'The book is on the table.'

- (91) laua-l on raamat
table-ADESS be.PRS.3SG book
'There is a book on the table.'

The reverse-order strategy is also found in English:

- (92) **In the room was a request for breakfast** and instead of a set menu the choice is almost limitless. [Trip Advisor review of Trafford Bank Guest House, Inverness, October 11, 2007]

Creissels does not give any frequency information for these two strategies (predicational locative strategy with fixed order or reverse order), since he excludes these from his classification of strategies. Clark found over three-quarters of the languages in her sample use the reverse-order strategy (24 of 31 languages; Clark 1978:96, table 3). More significantly, she found that there was a correlation between the reverse-order strategy and the absence of articles indicating definiteness, and a correlation between the fixed-order strategy and the presence of such articles (Clark 1978:95, table 2). Clark suggests that word order is used to signal definiteness in languages that lack articles, at least in location clause constructions (Clark 1978:91).

Evidence for the hypothesis that the presentational location construction recruits the predicational location construction, rather than the other way around, is found in the word order patterns (Clark 1978:96, table 3). The predicational location construction always has the figure phrase preceding the locative phrase in Clark's sample. The presentational location construction appears to retain the figure-locative order when word order in the language is rigid, as with Welsh. Where word order is more flexible, the presentational location construction reverses the order to locative-figure, following a strategy typical of the thetic information packaging of which the presentational function is a subtype (see section 11.3).

There is also a grammaticalized predicational locative strategy, in which a general locative expression has become a fixed marker of the presentational locative, and a regular locative phrase actually indicates the location of the figure. The English *There* construction in (85) is an instance of this

strategy: the reverse-order *There* has become a fixed marker of the construction, and the actual locative phrase follows the figure phrase.

In Palestinian Arabic, *fi-h* ‘in it’ serves as the grammaticalized presentational locative marker (Hoyt 2000:103; cf. Creissels 2019:68):

- (93) *baka/baku* *fi-h* *ulâd* *fi-d-dâr*
 be.PST.3SG.M/be.PST.3SG.M in-it child.PL in-DET-house
 ‘There were children in the house.’

Many Bantu languages use a Locative Class index that is derived from a locative prefix, as in Citumbuka (Chavula 2016:23; cf. Creissels 2019:69):

- (94) *ku-munda* *ku-li* *nkhalamu*
 LOC.CL17-CL3.crop_field LOC.CL17-be CL10-lion
 ‘There are lions in the crop-field.’

A second very common strategy for presentational location is to recruit the presentational possession construction. This recruitment strategy, the **possessive locative strategy (str)**, means that a variety of presentational possessive strategies are used, depending on the strategy used for possession in the language. Example (95) illustrates the with-possessive strategy for the presentational location construction in Swahili (Creissels 2019:78):

- (95) *ku* *na* *mgeni* *nyumba-ni*
 LOC.CL17 with CL1.stranger CL9.home-LOC
 ‘There is a stranger at home.’

Example (96) illustrates the have-possessive strategy in a presentational location construction from Palikur (Launey 2003:80; cf. Creissels 2019:71), and (97) a possessive predicativization strategy using the Proprietive suffix *-qar* in Kalaallisut (Creissels 2019:76, from Van Geenhoven 1998:27):

- (96) *kadahan* *im* *ahakwa* *un*
 have fish in water
 ‘There are fish in the water.’

- (97) *nillataartarfim-mi* *tallima-nik* *manne-qar-puq*
 fridge-LOC five-INS.PL egg-PROP-IND.3SG
 ‘There are five eggs in the fridge.’

Of course, recruitment of the possessive construction requires adaptation, since the location situation lacks a possessor. The possessor may be present, however, in a nonlocative presentational construction. Example (98) gives a presentational use introducing an actor in a story in Supyire (Carlson 1994:617; see also p. 249):

- (98) *u* *mpyi* *ná* *pwunm-pole* *é*
 3SG.CL1 be.PST with dog-male with
 ‘He had a male dog.’

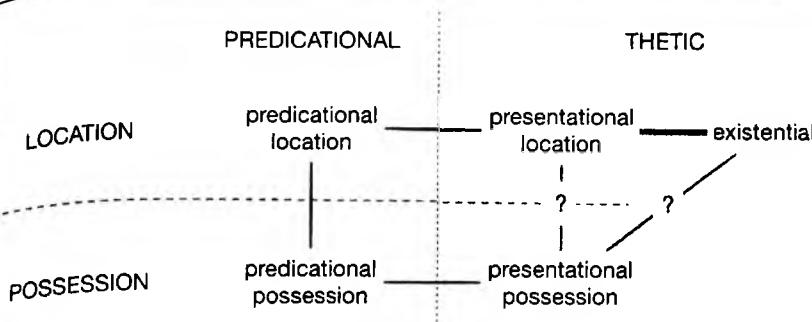


Figure 10.2 *A conceptual space for location, existence, and possession*

The presentational possession recruitment strategy may also lead to a grammaticalized version in a presentational location function, such as Spanish *haber*, as in (99) (Butt and Benjamin 2004:429).

- (99) Había muchas chicas de mi edad y más jóvenes.
 'have':IPFV many girl of my age and more young
 'There were many girls of my age and younger.'

Haber is etymologically a have possession verb, from Latin *habēre* ‘have’, though it has been replaced in that function by *tener* in Modern Spanish (see also Creissels 2019:81–82).

There are even rare cases of a hybrid locational–possessive strategy. English has a construction with both *have* and a coreferential locative phrase (Clark 1978:109):

- (100) The table **has** a book **on** it.

French uses a form of *avoir* ‘have’ combined with the locative pronoun *y*, very similar to the English construction in (100) except that the French Verb is in an impersonal 3rd Singular form (Koch 2012:534):

- (101) il y a un livre sur la table
 3SG there have.3SG.PRS a book on the table
 'There is a book on the table.'

Figure 10.2 proposes a conceptual space for location, possession, and existence functions based on the crosslinguistic distribution of constructions and their patterns of recruitment (cf. Koch 2012:544).

Synchronously, the commonest co-expression patterns are to co-express the two location functions (and possibly also existence) and the two possession functions; or to co-express the two predicational functions and the two presentational functions (and possibly also existence). Clark makes exactly this observation for her sample of more than 30 languages (Clark 1978:188), although her ‘existential’ category is only presentational location. Creissels notes that predicational and presentational location are co-expressed in ‘probably more

than half of languages' in his 700-plus language sample (Creissels 2019:50–51), and mentions that predicational and presentational possession are co-expressed 'often' (Creissels 2019:58). Koch notes that the commonest patterns for location and existence are to co-express predicational and presentational location, but distinguish existence; and to co-express presentational location and existence, but distinguish predicational location (Koch 2012:583–85). Two other common patterns are to co-express both kinds of location and existence – i.e., including existence with both location functions – or to co-express both kinds of presentational constructions and existence – i.e., grouping together all of the thetic functions (Koch 2012: 583–85).

The position of the existential situation and its relation to presentational possession is unclear. Koch suggests that the direct link is between presentational possession and existential functions, rather than between presentational possession and presentational location (Koch 2012:585); however, his sample is very small and the data is limited. Stassen observes that the locational possessive strategy is the most frequent strategy for presentational possession (Stassen 2009:50). This implies a direct connection between presentational location and presentational possession, but Stassen notes that the verb in question may be a location verb or an existence verb, and he does not explore this distinction (Stassen 2009:49, n. 3). Koch also notes that presentational location and existence are semantically quite close due to the 'bridging' situation type of 'bounded existence' (Koch 2012:590–91; see [87] above). The close relationship is indicated by a thicker link between these two functions in Figure 10.2.

There appear to be multiple diachronic paths through the conceptual space in Figure 10.2. We suggested above that predicational location is a source construction that is recruited for presentational location, and that it is also recruited for existential situations. Presentational possession appears to serve as a source construction for the other thetic functions (presentational location and existence), at least for the have and with-possessive strategies. The existential construction may serve as the source construction for the topic possessive strategy (possibly ending with Have-Drift). The predicational location construction probably serves as the source for the locational possessive strategy, possibly via predicational possession (as suggested by Clark 1978:102–5), or possibly via presentational location (at least some of the time, as implied by comments in Stassen 2009:49, n. 3).

There are other strategies used for presentational function, including non-locative presentational function, that are not discussed by Clark, Koch, or Creissels. One strategy uses perception verbs. This **perception verb strategy (str)** is found in English for presenting actors in a narrative, from the *Pear Stories*:

- (102) 2,57 [1.95 [.55] and um [.6]] then you see this little girl.
 2,58 [.55] Coming on a bicycle in the opposite direction,

A more grammaticalized form of the perception verb strategy is used for a presentational location construction in French, with *Voilà/Voici*, from *vois* ‘see [2SG imperative]’ + *là* ‘there’/ *ci* ‘here’ (Stassen 1997:92):

- (103) Voi-ci un coffre... Voi-là un autre coffre
 see-here a chest see-there a other chest
 ‘This/Here is a treasure chest...That/There is another treasure chest.’

The perception verb strategy is presumably the source of the ‘see’ nonverbal copula strategy for object and property predication found in Kpelle examples (30) and (31) in section 10.3 (Stassen 1997:92; see also Creissels 2017).

Motion verbs are also recruited for presentational function, particularly with postverbal subject argument phrases in languages like English or Spanish. The example in (104) is also from the Pear Stories:

- (104) 3,9 [1.0? and [.45] and um . . .] along comes a man with a donkey.
 3,10 Uh uh a don uh a goat.

This strategy could be analyzed as a dynamic (motion) variant of the presentational location construction.

Finally, another construction that is used for presentational function is just the referring expression by itself, independent of any clause. We will call this the **independent referring phrase strategy (str)** (Croft 2007b:14). In English, it is restricted to spoken or informal discourse, as in (105) from the Pear Stories:

- (105) 20,13 [.3] and then a little boy,
 20,14 [.35] /about/ [.15] a bic a red bicycle,
 20,15 that was too big for him,
 20,16 [.8] he stopped,

The phrase *a little boy* is not part of the following clause *he stopped*, but is used to introduce the little boy in the discourse. (It is also followed by a phrase expressing location, ... *a red bicycle*.) The independent referring phrase strategy has been reported for a number of languages and described by a number of names (‘detached noun phrase,’ ‘lone noun phrase,’ etc.).

Terms Defined in this Chapter

10.1 Introduction

10.1.1 Non-Prototypical (“Nonverbal”) Predication

nonprototypical predication (*cxn*)

10.1.2 Predication and Nonpredicational Information Packaging in Clauses

predicational (*inf/cxn*), topic–comment (*inf/cxn*), comment (*inf*), topic (*inf*), presentational (*inf/cxn*), thetic (*inf/cxn*), deictic presentational (*inf/cxn*), equational (*inf/cxn*), identificational (*inf/cxn*), nonpredicational clauses (*cxn*)

10.2 Strategies for Prototypical and Nonprototypical Predication

verbal strategy (*str*), locational (*a.k.a.* verbal copula) strategy (*str*), nonverbal copula strategy (*str*), zero strategy (*str*), nominal strategy (*str*), time-stability (*sem*)

*10.3 Object Predication and Property Predication**10.4 Location and Possession Clausal Constructions: Predicational and Presentational**10.4.1 Location Clauses*

location clause (*cxn*), predicational location (*a.k.a.* locative predication) (*inf/cxn*), presentational location (*inf/cxn*), location (*sem*)

10.4.2 Possession Clauses

possession clause (*cxn*), possession relation (*sem*), presentational possession (*cxn*), predicational possession (*cxn*), locational possessive strategy (*str*), with-possessive strategy (*str*), topic (*a.k.a.* double subject, distributed subject) possessive strategy (*str*), have-possessive strategy (*str*), topic-locational hybrid possessive strategy (*str*), adnominal possessive strategy (*str*), predicativization possessive strategy (*str*)

10.4.3 Strategies for Presentational Constructions

presentational location (*inf/cxn*), existential (*sem*), predicational locative strategy (*str*), possessive locative strategy (*str*), perception verb strategy (*str*), independent referring phrase strategy (*str*)

11 Information Packaging in Clauses

11.1 Introduction

In Chapter 10, we saw that so-called “predicate nominals” consisted not only of object predication constructions, but also nonpredicational clausal information packaging functions. Predication, first explained in Chapter 2 (see section 2.2), always involves predication of a concept applied to a referent – that is, the information is packaged in two parts, the predication and the referent. Stassen’s file metaphor (see section 10.1.2) analyzes the predication as conceptual content, and the referent as designating the discourse file to which the predicated content is added.

Stassen refers to object predication as the predicational function (section 10.1.2). This is the most common clausal information packaging function, and for that reason it is sometimes called the ‘default’ or ‘neutral’ clausal information packaging function. However, it is not really neutral: it does represent a particular way to structure the information packaged in a clause. ‘Default’ is a better description, in that it implies that predication is the most common clausal function.

The other two functions that were introduced in Chapter 10 are presentational and equational. The presentational function introduces a referent into the discourse; Stassen’s file metaphor characterizes the presentational function as creating a new discourse file (for that referent). The equational function equates two referents – that is, takes two referents that were assumed to be distinct individuals and asserts that they are one and the same. Stassen’s file metaphor characterizes the equational function as merging two distinct discourse files into one.

Predicational, presentational, and equational are all defined in terms of object concepts and how they are packaged – specifically, whether there is no change in the number of discourse files (predicational), a discourse file is created (presentational), or discourse files are merged (equational). In actuality, as noted in section 10.1.2, this three-way taxonomy of clause-level information packaging applies to all sorts of semantic content: events and their participants, properties, and so on.

The definition of predicational information packaging – dividing the information into a predicate, and referents that it is predicated of (i.e. arguments;

see section 2.2) – is basically the same when applied to other types of semantic content. However, the definition of the other two types of information packaging will have to change, because the presentational and equational functions pertain specifically to object concepts. Because of these changes in definition, we will use different terms to describe the three types of information packaging applied to all types of content (these terms were briefly introduced in section 10.1.2; see Table 10.1). We will use the term **topic–comment (inf)** for the predication of all types of semantic content. The term **thetic (inf)** will be used for the more general category including presentation. Roughly, the thetic function represents the packaging of all the semantic content as new. Hence, the thetic function does not really divide the semantic content of a clause into two parts like the topic–comment function does. Finally, the term **identificational (inf)** will be used for the more general category including equation. Roughly, the identificational function represents the packaging of one piece of meaning as filling a “gap” in the total semantic content of the clause. Hence, the identificational function also divides the semantic content into two parts, like the topic–comment function – but it divides the semantic content in two in a different way.

It has long been recognized that the semantic content of a clause can be packaged in different ways, though not always in this three-way classification. The three-way classification is laid out in greatest detail by Lambrecht (1994), whose analysis we will mostly (but not entirely) follow in this chapter. Lambrecht gives the following examples to illustrate how the same semantic situation type can be packaged in the three different ways (Lambrecht 1994:121; capitalized words in these and other examples in this chapter have greater stress):

- (1) *Topic–comment:*
Q: What did the children do next?
A: The children went to SCHOOL.
- (2) *Thetic:*
Q: What happened?
A: The CHILDREN went to SCHOOL.
- (3) *Identificational:*
Q: Who went to school?
A: The CHILDREN went to school.

Although (1)–(3) have identical morphosyntactic structure, they differ in prosody, one of the common strategies for distinguishing these three information packaging functions (see sections 11.3, 11.4).

The term **propositional content (sem)** is commonly used to describe the semantic content of a clause separately from whether it is packaged as topic–comment, thetic, or identificational. This term originates from philosophical logic, where a **proposition (sem)** is the representation of the semantic content of a clause – something that can be evaluated as true or false. Propositional content corresponds basically to ‘who did what to whom’ – that is, events and

their participants; but it also includes other semantic content found in a clause, such as properties or quantities associated with a participant, or semantic properties of an event such as its time reference, aspect, and polarity (positive or negative). When we turn to the information packaging represented by speech acts in Chapter 12, we will again refer to the semantic content so packaged as propositional content.

The information packaging of clauses is not as well explored typologically as the argument structure of clauses that was described in Chapters 5–9. The description of strategies here is therefore more tentative.

11.2 Topic–Comment Constructions

11.2.1 Function of Topic–Comment Constructions, and the Problem of Multiple Referents

The topic–comment function is expressed by **topic–comment constructions (cxn)**. Here, ‘topic’ refers not to the topic of a stretch of discourse (often called the ‘discourse topic’), but the topic of a sentence (sometimes called the ‘sentence topic’; Lambrecht 1994:117) – or, more specifically, a clause. The topic of the sentence is what the sentence is **about (inf)**; this property is often called ‘aboutness’ and is widely accepted as a definition of topic (Lambrecht 1994:117). Lambrecht cites Strawson as describing the topic of a sentence as ‘a matter of standing interest or concern’ (Strawson 1964:97). A sentence is relevant to the discourse if it is about such a matter. Discourse topic and sentence topic are therefore not unrelated; the topic of one sentence often continues to be the topic of following sentences. We have seen this phenomenon before (see section 3.3.1); it is called ‘topic continuity,’ and we related it to accessibility.

Prototypically, the topic is the referent of the subject argument phrase, and the comment is the semantic content conveyed by the predicate. As noted above, a topic–comment sentence is assumed to be the default clausal information packaging. Hence, the word order of the predicate and argument phrases of a topic–comment sentence, and the inflections found on its predicate and argument phrases (especially the subject phrase), are the baseline clausal construction. The other clausal information packaging constructions are defined in part by their grammatical differences from the topic–comment construction.

In fact, in terms of both form and function, the story is not so simple. The topic in information packaging terms is not always the referent of the subject argument phrase. The topic may be expressed by another argument phrase – that is, one not encoded by the typical subject strategy of the language (flagging, indexation, and/or word order). And this reveals a basic problem about defining the topic of a predication and relating it to a morphosyntactic strategy: there is often more than one referent expressed in a clause. Which one is the topic? Or are all of them “topics” in some sense?

Lambrecht, on the other hand, argues that not all referring phrases are topics, although more than one can be a topic, as long as the predication can be construed as being about more than one referent. Givón (1983) argues that topicality is a gradient functional category. In Givón's view, one can evaluate the topicality of all referents in a clause, and rank them in terms of degrees of topicality. This is essentially how we defined salience of arguments in Chapters 5–9. We will treat topicality as a synonym for salience, and consider a 'topic' to be a referent or referents of high salience in a clause. We will look at a number of examples where there is a "mismatch" between topic function and subject argument phrase – that is, examples where the subject argument phrase is less topical than a nonsubject argument phrase.

We start with clauses with more than one referring phrase, where the subject phrase is a topic, and look at what the information status of the referent of the nonsubject phrase is. Lambrecht gives the following invented example of a sentence in which both referring expressions are topics (Lambrecht 1994:148):

- (4) Q: Whatever became of John?
 A: **He** married **Rosa**, but **he** didn't really love **her**.

In the answer to the question in (4), the predication are about John, but they are about Rosa also. Both John and Rosa are human referents. Topics are prototypically subject referents, but topics (and subject referents) are also typically high on the Animacy Hierarchy. Lambrecht states that the sentence is primarily about John, i.e. John is the primary topic, and Rosa is a secondary topic.

In some cases, the nonsubject referring phrase denotes a referent that is low on the Animacy Hierarchy, as in this example from the Pear Stories narratives:

- 3,20 [.9 [.7] uh] he loses **his hat**,

Here, the other referent is a prop, using the theater metaphor (section 3.4.1). The sentence is primarily about the referent of *he*, which is also the subject argument. But it is arguably also about the hat. Nevertheless, a prop like the hat is far less likely to be referred to again (DuBois 1980), so it is low in topicality.

Often the nonsubject referent is being introduced into the discourse, and probably the hearer has no file for it:

- 3,15 [.8] So the ki the the um . . . the boy goes along,
 3,16 and he has [1.4 . . . um [.8]] he's riding his bicycle,
 3,17 a—nd he looks at . . . **a girl**,
 3,18 that was coming the other way,
 3,19 riding a bicycle,

However, such a construction is better analyzed as a presentational construction, i.e. a subtype of thetic sentence, not a topic–comment sentence (see sections 10.4.3, 11.3). It is examples like *a girl* in line 3,17 that Lambrecht has in mind when he argues that not all referring phrases are topics.

Although, out of context, it is easy for an English speaker to invent a sentence with any event as predicate and a presentational referent expressed as an argument phrase, in actual usage presentational referents occur with a limited range of semantic event types as predicates (see section 10.4.3): location, motion, possession, and perception (as in line 3, 17 above). We will return to thetic sentences in section 11.3.

Thus, some referring phrases do not express topics, as Lambrecht argues. The referring phrase is part of a strategy to express information packaging that is not topic–comment, such as the presentational (thetic) example above. (There are also identificational examples, which will be illustrated in section 11.4.) On the other hand, some sentences may have more than one topic, although one topic will be more topical than the other(s). That topic is usually expressed as a subject phrase.

Conversely, however, the “best” topics are not referring phrases – in fact, they are hardly expressed at all. Lambrecht (1994:165) proposes a ‘topic accessibility scale,’ arguing that higher accessibility referents make better topics – that is, are more likely to be encoded as the topic (or subject) phrase in a clause construction. Such topics are also prototypical subjects. But the highest accessibility topics are zero coded, or at most coded by indexation on the predicate or by unstressed pronouns (see section 3.3.2). So the most prototypical topic–comment construction lacks expression of the topic entirely.

The topic–comment constructions that are described in this section mostly have overt referring phrases as topics. In other words, their topics are somewhat lower on the accessibility scale than the “best” topics. As such, they represent a lower degree of topic continuity – that is, they are found when there is some degree of topic shift, sometimes called a ‘marked topic.’

11.2.2 Strategies for Topics that Are Not the Most Central Participant

A referent other than one typically denoted by the subject argument phrase may be the (primary) topic. That is, the salient participant that initiates the causal chain (section 6.1.2) may not be the topic, or is not the primary topic. In this situation, a variety of strategies are employed.

The first strategy is that a topic referent that is not the subject argument phrase in the basic voice construction is expressed as subject by using a nonbasic voice construction. This is, in fact, the main function of nonbasic voice constructions – in particular, the passive–inverse voice construction discussed in section 8.3. This strategy is an actual information packaging strategy (see section 2.2.5; this strategy corresponds to what Maslova and Bernini 2006:103–5 call the ‘PP-template’). Example (5), taken from section 8.3, is an instance of the actual IP strategy for a topic that is not normally coded as subject:

- (5) **The boy** was taken to school (by his parents).

Another strategy is to use a semantic information packaging strategy, retaining the nonsubject flagging and indexation of the topic participant referring phrase (this strategy is called the 'SF-template' by Maslova and Bernini 2006:103–5). For example, Lambrecht notes that the experiencer participant in (6) is the primary topic (Lambrecht 1994:127):

- (6) Q: What kinds of things do you like?
 A: I like WINE.
 A [Spanish]: Me gusta el VINO. [experiencer = indirect object *me* = topic]

The topic phrase is, however, placed in initial position, the position that is typical for subjects (compare also the Russian example (2) from section 8.2, which also uses a semantic IP strategy). A shift in word order with the semantic IP strategy for topic is often the first step in the grammaticalization of a nonsubject phrase into a subject phrase (that is, a reorganization of the salience ranking of arguments). For example, English *like* formerly expressed the experiencer in the same way as Spanish *gustar* (i.e. oblique flag but preverbal position); but the experiencer eventually lost its oblique flag and came to trigger indexation on the verb.

Another strategy is to place the nonsubject topic phrase in a **detached (str)** position, as in the German sentence in (7) (Maslova and Bernini 2006:72):

- (7) Peter, ich habe ihn heute nicht getroffen
 Peter I PERF.1SG him today NEG meet.PST.PTCP
 'Peter, I have not met him today.'

Here, unlike in the Spanish example in (6), the referent of the detached topic phrase is also expressed by a pronoun as an object phrase. The detached phrase is also an independent prosodic unit, represented in (7) by the comma separating it from the rest of the clause.

The detached phrase strategy can be used for the subject as well, which suggests that it is not simply an alternative construction for a topic in the usual sense. In fact, the spoken French example in (8), represents a detached phrase strategy that is grammaticalizing into a basic subject–predicate construction, with the detached phrase *moi* evolving into a subject and the former subject pronoun *je* evolving into an index (Lambrecht 1994:128):

- (8) MOI je PAYE.
 1SG 1SG.SBJ pay
 'I'll pay.'

The detached phrase may be postposed instead of preposed (Chafe 1976 and Lambrecht 1994 call a postposed detached phrase an 'antitopic'). The example in (9) is from French (a recurring line in the *Astérix* comic books, given in Maslova and Bernini 2006:102), and example (10) is from Maltese (Maslova and Bernini 2006:103, from Fischer and Jastrow 1980:288, corrected by Bernard Comrie, pers. comm.):

- (9) Ils sont fous, ces Romains!
 they are mad **those Romans**
 ‘They’re mad, **those Romans!**’
- (10) l-ewwel nett kien-u jagħġnu-h b'
 at-first completely be:PFV-3PL knead:IPFV:3PL-3SG.M with
 l-id-ejn, dawn it-tliet xkejjer
 ART-hand-DU **these ART-three sacks**
 [from a narrative on bread baking] ‘At the very first they used to knead it
 with the hands, **these three sacks.**’

In (9), the postposed phrase is coreferential with the Third Person Plural Subject pronoun; the same strategy is used in the English translation. In (10), the Third Singular Masculine index refers to flour, and the postposed phrase specifies further that the flour is from the three sacks previously mentioned in the discourse. Maslova and Bernini summarize prior research that postposed detached phrases ‘appear to be limited to referents recoverable from the situation and/or immediate discourse context’ (Maslova and Bernini 2006:102–3). In other words, the postposed detached strategy for topic constructions appears to be limited to relatively highly accessible topic referents; we will return to this issue at the end of this section.

Some have argued for a sharp distinction between the detached strategy, with a prosodic break and a coreferential pronoun in the clause, and the “simple clause” strategies, without a prosodic break or a coreferential pronominal element. But this distinction is not as clear as it may seem. As argued in Chapter 3, there is not much of a functional difference between a pronoun and an indexation marker in languages that index arguments (neither Japanese nor Chinese index any arguments, and Russian indexes only the subject argument). And in Mandarin Chinese, the prosodic break between the topic phrase and the (rest of the) clause is optional.

The examples below from Wardaman, an unwritten language, demonstrate that there is in fact a continuum of strategies from “fully detached” to “fully integrated” in the clause (examples from Merlan 1994; the roman numeral is the text number, the arabic number is the intonation unit number; comma indicates intonation unit break):

- flagged, prosodically integrated argument phrase:

I, Ø-na-rrī yiwarṇa-gari walanja-gari
 236 3SG-see-PST **other-other(ABS)** **goanna-other(ABS)**
 ‘and she saw another goanna’

- flagged, prosodically separate argument phrase:

XXII, Ø-gi-ndi dijongdijong-ma na, legen-yi jabarda-yi
 15-16 3SG-AUX-PST play_didgeridoo-PTCL now, **one-ERG** **[subsection]-ERG**
 ‘he was playing the didgeridoo, a certain Jabarda man’

- zero-coded, prosodically separate argument phrase:

XII, wunggunburr-wo-ndi-ya, wu-wardaman
 7-8 3NSG/3NSG-give-PST-NARR WU.CL-Wardaman(ABS)
 'they gave them to them, the Wardaman'
 [wu-wardaman is the A argument, normally expressed in Ergative case]

- zero-coded (or flagged?), prosodically separate argument phrase, with coreferential subject pronoun in clause (FM = father's mother):

I, nganingga ngabobu wuluwari, mulurru yidujba,
 1-2 mine(ABS) FM(ABS) Wuluwari, old_woman(ABS) Yidujba,

I, nan-guya nganburr-ga-ndi-ya^a-marla::: buda-wu
 3 that-DU(ABS) 3SG/1SG-take-PST-NARR-ITER plum-DAT
 'my father's mother Wuluwari, old woman Yidujba, [they two] used to take me for
 black plum'

- zero-coded, prosodically integrated argument phrase, followed by a flagged, prosodically separated coreferential argument phrase:

IX, dalgan marluga nana buda Ø-ngu-ndi-ya gila,
 35 daytime old_man(ABS) that(ABS) plum(ABS) 3SG-EAT-PST-NAR indeed

IX, gegeyenma-yi
 36 Gegeyenman-ERG

'in the daytime that old man was eating plums, Gegeyenman [was]'

The first example would be analyzed as a topic phrase functioning as a prototypical subject. The remaining four examples all vary as to whether the topic/subject phrase is prosodically separate or integrated, whether the topic/subject phrase is zero coded or case-marked for the argument role, and whether there is a coreferential argument phrase. Since Wardaman allows for null expression of highly accessible referents, all of the sentences minus the topic/subject phrase can stand alone in the appropriate discourse contexts. The examples show that the two morphosyntactic properties of the detached strategy – prosodic separation and occurrence of a pronoun (or, in fact, another common noun phrase) in the clause – may occur independently. We will consider a construction with either property as an instance of the detached strategy.

11.2.3 Nonparticipant (Hanging) Topic Phrases

A special type of topic construction is found in the case when the topic is not a participant in the event. These are called **hanging topic phrases (cxn)**. Hanging topic phrases usually use either the overtly coded strategy or the zero-coded strategy. The overtly coded strategy is common in European languages; it is illustrated in example (11) by both the Russian original, from Maslova and Bernini (2006:75), and its English translation:

- (11) *Čto že do praktičesk-o-go programmirovani-ja —*
what PRT to applied-GEN programming-GEN —
 sprosite eščë, a javlajetsja li nauk-oj
 ask:IMP:2PL also CNJ constitutes INTR science-INST
 slesarnoe delo
 locksmith:ADJ profession
 ‘As for software engineering, you can just as well ask whether locksmithing is a science.’ [from an internet chat]

Russian *Čto že* and English *As for* are not very grammaticalized hanging topic phrase markers. In some languages, there are more highly grammaticalized hanging topic markers, such as in Japanese; example (12) is from Chen (1996:396; cf. Maslova and Bernini 2006:74); examples (13)–(14) are from Iwasaki (2013:242):

- (12) Nihon wa syuto ga sumi-yo-i
Japan TOP capital NOM live-good-PRS
 ‘As for Japan, its capital is a good place to live.’
- (13) zoo wa karada ga ookii
elephant TOP body NOM big:NPST
 ‘The elephant – its body is big.’
- (14) sakana wa tai ga umai
fish TOP sea_bream NOM delicious:NPST
 ‘Among fish – the sea bream is delicious.’

In Japanese (and also Russian and English), the topic marker is also used for topics that are participants (the strategy with a special topic marker is called the ‘RP-template’ by Maslova and Bernini 2006:103–5). The Japanese topic marker *wa* replaces the nominative (*ga*) and accusative (*o*) flags, but combines with oblique flags such as *ni* (*ni* is obligatory in recipient function, but optional in other oblique functions; examples from Iwasaki 2013:238):

- (15) taroo wa gakusee da
Taro TOP student COP
 ‘Taro is a student.’
- (16) sono ko ni wa jon ga hana o okuri,...
this child DAT TOP John NOM flower ACC sent:INF,...
 ‘To this child, John sent flowers,...’

The combination of *wa* with oblique markers and the replacement of core argument flags – particularly the nominative *ga* – by *wa* suggests that *wa* may be grammaticalizing to a core argument marker, or even a subject marker.

Detached hanging topic phrases may also be zero coded or coded by the typologically least marked form, e.g. nominative coding in Russian (Maslova and Bernini 2006:74):

- (17) Sobak-a – vsegda pol-y grjazn-e
dog-NOM.SG always floor-PL dirty-PL
 ‘The/a dog, the floors are always dirty.’

Well-known examples of detached hanging topic phrases are found in Mandarin Chinese (Li and Thompson 1981:92, 93, 96):

- (18) xiàng bízi cháng
elephant nose long
 ‘Elephants’ noses are long./Elephants have long noses.’

- (19) jiajù jiù de hǎo
furniture old NR good •
 ‘Furniture, old is good.’

- (20) nèi zhǒng dòuzi yi jīn sān shí kuài qián
that kind bean one catty three ten dollar money
 ‘That kind of bean, one catty is thirty dollars.’

The Mandarin Chinese detached topic may be prosodically separated or not from the rest of the clause (Li and Thompson 1981:86). It may also be used for a participant that is functioning as the topic (Li and Thompson 1981: 96):

- (21) zhèi běn xiǎoshuō Zhāngsān kàn wán le
this CLF **novel** Zhangsan read finish ASP
 ‘This novel, Zhangsan has finished it.’

The “subject” argument phrase – a single argument phrase preceding the verb – may also be a topic (Li and Thompson 1981:92; example from p. 87):

- (22) wǒ xǐhuan chī píngguǒ
I like eat apple
 ‘I like to eat apples.’

Zero-coded detached hanging topics also occur in spoken English; Lambrecht gives some attested examples (Lambrecht 1994:193):

- (23) Dade County, you just can’t believe the rise in crime.
 (24) The typical family today, the husband and wife both work.

Hanging topics can be encoded even when using an actual IP strategy, where the non-participant topic is coded in the same way as a prototypical topic, that is, as a sentence subject argument – or, rather, the preverbal phrase denotes the topic referent, which prototypically is also the subject referent. In Dinka, the subject argument phrase is preverbal, as in example (25). The nonbasic passive-inverse voice is used for more topical Ps, as in example (26): the P argument phrase is preverbal and the verb is overtly coded for the nonbasic voice (Andersen 1991:272; cf. Maslova and Bernini 2006:111; NTS = nontopic subject; note that the translations do not capture the topic status of the referent of the preverbal referring phrase):

- (25) mòc à-kuàl wén
man DECL-steal cow
'The man is stealing the cow.'

- (26) wén à-kuéz mòc
cow DECL-steal:NTS man:GEN
'The man is stealing the cow.'

The same nonbasic voice construction in (26) is also used for hanging (non-participant) topics (Andersen 1991:281, 284; Maslova and Bernini 2006:111):

- (27) ròor à-múuc mòc thíñ
forest DECL-shoot:ANTP:NTS man:GEN PRN:LOC
'The man is shooting in the forest.'

- (28) māriáal à-théet tiéenj-dé mèth
Marial DECL-beat:NTS woman-3SG child
'Marial's wife is beating the child.'

The Japanese, Mandarin Chinese, and Dinka examples indicate that both participants and nonparticipant referents may be expressed with the same range of strategies: actual IP strategy, semantic IP strategy, overtly coded detached strategy, zero-coded detached strategy.

Hanging topics, where the referent is not a participant in the event, can be topics because the sentence can be construed as 'about' the referent of the hanging topic phrase. There are certain relationships that are recurrent among hanging topics. Two of the common ones are where the topic is the possessor of the "subject" referent, as in (13), (18) and (28), or the topic is a spatial or temporal location or time, as in (12) and (23). In section 5.2.1, I described possessors and locations (i.e. grounds) as anchors (see also section 10.4). Chafe suggests that hanging topics like those in Mandarin Chinese are better described as 'the [semantic] frame in which the sentence holds' rather than 'what the sentence is about' (Chafe 1976:50–51). Chafe suggests that the subject argument in Mandarin Chinese may be better analyzed as 'what the sentence is about.' In other words, the hanging topics in a language like Mandarin Chinese are more like settings in the theater metaphor (section 3.4.1).

There are other hanging topics where the relation between the hanging topic and the subject referent (or the referent of another argument phrase) is not possessor–possessed or location (ground–figure). Such examples include (11), (14), (17), (19), (20), and (24). A variety of relations are found, such as type–subtype in (14) and (19), whole–part in (24), and entity–attribute in (20). Birner and Ward, following prior work in discourse pragmatics, propose that discourse relations such as these between referents can be analyzed as forming a partially ordered set or poset (*inf*) (Birner and Ward 1998:17–24).

The partial ordering is defined in context, but is frequently a more general relation such as whole–part (including possessor–possessed and entity–attribute), type–subtype, set–subset, and so on. These are the same relations that can hold

between a hanging topic referent and the subject or other argument referent in the hanging topic constructions. The poset relation holds between a concept evoked or inferable in the prior discourse, the **trigger** (*inf*), and the concept expressed in the current sentence, called the **link** (*inf*).

In many hanging topic constructions, the hanging topic is the trigger and the subject argument is the link. That is, the “double subject” or “topic–subject” construction contains both trigger and link. In constructions such as the Mandarin example (21) or the English construction called Topicalization, the preposed phrase is the link, and the trigger is in the prior discourse context (attested example from Birner and Ward 1998:18):

- (29) G: Do you like this album? .
 H: Yeah, **this song** I really like.

In example (29), the preposed *this song* is the link, *this album* from the preceding turn is the trigger, and there is a whole–part relation between the album and the song. Hence, in these constructions, only the link occurs in the construction.

11.3 Thetic Constructions

11.3.1 Function of Thetic Constructions, and Contexts Typically Construed as Thetic

The primary characteristic of thetic information packaging is that there is no division between topic and comment: all the information is new, including the referents. The thetic function thus differs from both the topic–comment function described in section 11.2 and the identificational function to be described in section 11.4, both of which divide the information into two subtypes (topic and comment for the former, and focus and presupposition for the latter).

The thetic function is difficult to identify because it often represents an alternative construal of information. Many scholars assume that there are certain situation types that are typically construed thematically, and if a language uses a construction distinct from the default topic–comment construction for one or more of those situation types, then it represents a thetic construction. We will follow this approach in this section.

Among the clearest thetic situation types are those that include a new referent. Of these, the “purest” expression of a new referent is the presentational construction that has already been discussed in the last chapter (see section 10.4). The presentational function is used to open a discourse file for a referent, and, to a greater or lesser extent, to simultaneously provide the hearer with some information about the referent.

The presentational construction is an example of an **entity-central** (*inf*) thetic type (Sasse 1987:526–27). Sasse later uses the term ‘introductory’ for

the presentational function (Sasse 2006:284–85), but we will continue to call it ‘presentational.’ Although both the participant and event in a presentational construction are “all new,” the interlocutors are chiefly interested in the identity of the introduced participant. The event that is included in a presentational construction is usually just the location or arrival of the participant to the scene, and in some cases is reduced to a grammaticalized form such as English *There’s* or Spanish *Hay* (see section 10.4.3).

Introducing a participant is a discourse context that is typically construed as **thetic**, and thus it is likely to be expressed by a grammatically distinct construction from the basic topic–comment construction. However, the presentational function is not always expressed by a distinct **thetic** construction, even when such a construction is available. In the English *Pear Stories* narratives (Chafe 1980), a specialized presentational construction was used only for actors (i.e. not when props were introduced). Even so, actors were introduced by the English topic–comment construction slightly under half of the time (Croft 2010:38–39).

Sasse argues that the choice of information packaging depends on how the speaker construes the hearer’s expectation (Sasse 1987:523): whether the event is being presented as a whole (**thetic**), or as being about someone or something (**topic–comment**). So, for example, even an event that has a newly introduced referent as the subject could package the information as **topic–comment** rather than **thetic/presentational**. One could alternatively argue that the default **topic–comment** construction is being recruited for **thetic** function. We will see this phenomenon for **identificational** constructions as well. Also, as we will see with both **thetic** and **identificational** constructions, sometimes the only formal expression of the distinct information packaging function is prosody, which is often not marked in grammatical descriptions.

In addition to the entity-centered **thetic** type, there is also the **event-central (inf)** **thetic** type (Sasse 1987:526–27; Lambrecht 1994 calls this type ‘**event reporting**’). In the **event-central** **thetic** type, the main focus of attention is on the newness of the event, and the referent is not as important as – or at least no more important than – the event being reported.

Perhaps the best example of a situation type that is typically construed as an **event-central** **thetic** is **weather (sem)**, as in *It’s raining*. Weather expressions will be illustrated in section 11.3.3. Another situation type that is commonly construed as an **event-central** **thetic** is bodily sensation events, described in section 7.4 (*My HEAD hurts* / Spanish *Me duele la CABEZA*; capitalization is used here and below to indicate stronger stress or accent).

In addition, four discourse contexts also invite construal as a **thetic**:

- **Explanations (inf)** (e.g. answers to ‘What happened?’): *My CAR broke down*. This is called the **explanative** function by Sasse (Sasse 2006:287). The fact that something happened is presupposed, and the statement explains or elaborates what happened.

- **Interruptions (*inf*):** Sasse also identifies a function he calls the interruptive function (Sasse 2006:285–86), for a sudden, unexpected new situation that interrupts the flow of discourse that is expressed in topic–comment form. For example, if we are talking and the phone rings, you might say, *The PHONE's ringing!* (Lambrecht 1994:143).
- **Announcements (*inf*):** Sasse describes this as the annuntiative function (Sasse 2006:281–82); he calls them ‘statements out of the blue.’ For example, in *TRUMP was elected!* (with accent on *Trump*), uttered on November 9, 2016, the most important new information is the election of Trump as President of the United States, although of course Trump’s identity as the person elected is new information as well. The surprise aspect of the meaning is described further in section 12.5.
- **Background descriptions (*inf*):** *DOGS were running in the yard.* This is called the descriptive function by Sasse (Sasse 2006:286). The descriptive function includes scene-setting or background descriptions. This appears to be the most marginal situation type to be expressed by a special, presumably thetic, construction.

Another situation type that is typically construed as thetic is the existential situation type (section 10.4.3), as in (30) (García Macías 2016:55):

- (30) There are apples in the kitchen.

In section 10.4.3, the difference between prototypical presentational locative events and existential events was briefly discussed: the former presents a specific indefinite referent with respect to a location, while the latter asserts the existence of a type. García Macías describes additional differences (García Macías 2016:54–57).

Existential statements may occur at any point in the discourse when existence is asserted, e.g. (31a). However, presentational sentences can only be used when the referent is in the discourse context: for example, pointing out the referent in the visual field as in (31b), or in a narrative, when the referent is being introduced (García Macías 2016:57):

- (31) a. There are yaks in Tibet.
 b. THERE's a yak.

Existential sentences can be negated or questioned, as in (32a) and (33a). Negation and questioning do not make sense for the presentational function, hence examples (32b) and (33b) are unacceptable (capitalization indicates a primary accent on the word). Or, to put it somewhat differently, negating or questioning what seems to be a presentational turns it into an existential sentence, or a ‘bounded’ existential, because the referent is no longer specific, but a type (Koch 2012:539–40). In contrast, a simple locative predication is felicitous, as in (32c) and (33c), but this is no longer presentational; it is a topic–comment construction.

- (32) a. There are apples in the kitchen/There aren't apples in the kitchen.
 b. THERE's John./#THERE isn't John.
 c. John isn't there.

- (33) a. Are there any apples in the kitchen?
 b. #Is THERE John?
 c. Is John there?

García Macías (2016) argues that existential situations are better analyzed as event-central thetics, where the event is the existence (or nonexistence) of the objects in question. Presentational constructions, in contrast, are entity-central, introducing the referent in the speech act situation or in a narrative. In other words, the existential situation is functionally more like weather events and bodily sensation events. García Macías' multidimensional scaling analysis, based on a 101-language sample, demonstrates that existential constructions tend to be structurally more similar to weather and bodily sensation constructions crosslinguistically than they are to presentational constructions (García Macías 2016:163–80), despite their sometimes being recruited as presentational constructions (section 10.4.3).

11.3.2 Strategies for Thetic Constructions

Thetic information packaging does not divide the semantic content in a clause in two, like the topic–comment and identificational functions. However, the morphosyntactic expression of thetically construed semantic content still generally recognizes the distinction between events and their participants. There are a great variety of strategies used for thetic constructions. Nevertheless, one can make some generalizations about the morphosyntactic structure of thetic constructions.

All of the strategies have in common one or both of the following morphosyntactic properties. First, the construction makes the phrase expressing the most salient or topical referent look less like a subject, or not like a subject, in the prototypical topic–comment construction in the language (see Lambrecht 2000, who argues that, in fact, the referent is expressed like an object; however, this is not always true as will be shown below). Second, the construction makes the form expressing the event look less like a predicate, or not like a predicate, in the prototypical topic–comment construction in the language. In other words, topic–comment and thetic strategies form a system, where thetic strategies are defined in contrast to the corresponding topic–comment strategy (Lambrecht calls the system of sentences differing in information packaging a set of ‘allosentences’; Lambrecht 1994:6).

The first strategy for thetic constructions involves not the morphosyntactic structure of the clause, but its **prosody (str)** (Chafe 1974; Schmerling 1976; Sasse 1987; Lambrecht 1994). As we observed with examples (1)–(3) in section 11.1,

differences in information packaging of a clause may be expressed solely by prosody. (Prosodic changes may also accompany morphosyntactic strategies.) For example, in English, a topic–comment construction usually has the primary accent on the predicate (Sasse 1987:520, from Chafe 1974:115):

- (34) He broke the GLASS.

Example (34) illustrates the prototypical topic–comment construction, with a high accessibility topic/subject referent (see section 11.2.2). If the topic/subject is a lower accessibility (i.e. nonpronominal) referent, then that referent is normally also accented (Sasse 1987:521):

- (35) Q: What's going on outside? •
A: HARry's SINGing. [*not*: HARry's singing.]

In English, as was seen in example (1b), the thetic function may be signalled solely by deaccenting the predicate (Sasse 1987:520–21):

- (36) Q: What's new?
A: HARry's coming. [*not*: HARry's COMing.]

The stress pattern on English thetic sentences such as (36), deaccenting the predicate, makes the predicate look less like a predicate in the prototypical topic–comment construction, where the predicate takes the accent.

A second strategy for thetic constructions is to change the word order of the elements of the topic–comment construction. A common pattern is for the subject referring phrase, which normally precedes the verb in SVO languages like English and Spanish, to be postposed after the verb. Example (37) is from the Pear Stories narratives, and example (38) is from Italian (Lambrecht 1994:137):

- (37) Along comes a man with a donkey.

- (38) (What's the matter?)
Mi fa male il COLLO.
1SG.OBJ make bad the neck
'My NECK hurts.'

In many SOV languages, the subject referring phrase occurs immediately before the verb, as in Tsez (Lambrecht and Polinsky 1997:197; SUPERESS = superessive), or postverbally as in SVO languages, as in Latin (Lambrecht and Polinsky 1997:197):

- (39) hon-λ'o fadala oqoxosi zowsi
hill-SUPERESS fool(ABS) living was
'On the hill lived a fool.'

- (40) mugit taurus
bellow.3SG.PRS.IND bull.NOM
'There is a BULL bellowing.'

Lambrecht and Polinsky argue that the immediately preverbal strategy is found in rigid SOV languages (those that do not allow anything to follow the verb), and the postverbal strategy is found in nonrigid SOV languages (although Latin is probably better described as a “discourse-governed” word order language).

In verb-initial languages, there are again two options observed by Lambrecht and Polinsky. If the only order for the topic–comment construction is for a postverbal subject phrase, then the preverbal position may be used for the subject phrase of a thetic construction, as in (41) from Biblical Hebrew (Lambrecht 2000:639, from Wehr 1984:36) and (42) from Old Irish (Lambrecht 2000:639, from MacCana 1973:107):

- (41) Iš haja
man there_was
'There was a man.'

- (42) Rí amra ro boí for Laignib
king wonderful PART be.3SG.PRET over Leinstermen
'There reigned a wonderful king over the Leinstermen.'

If the language uses SVO order as well as verb-initial order for the topic–comment construction, then the thetic construction places the subject phrase in immediately postverbal position, the mirror image of the rigid SOV language. Compare Malagasy (43), which has only a thetic interpretation, to (44), which has only a topic–comment interpretation (Lambrecht and Polinsky 1997:198):

- (43) tonga ny ankizy tao an-tsekoly
arrive ART children in OBL-school
'There arrived CHILDREN at school.'

- (44) tonga tao an-tsekoly ny ankizy
arrive in OBL-school ART children
'The children arrived at SCHOOL.'

Again, changes in word order may also accompany other morphosyntactic strategies.

The immediate preverbal strategy in rigid verb-final languages like Tsez – example (39) – and the immediate postverbal strategy in verb-initial/SVO languages like Malagasy – example (43) – indicate that the thetic construction does not only affect word order, but involves a tighter syntactic integration of the verb and the subject. A related strategy is the outright incorporation of the subject phrase in the verb. Example (45) from Boni illustrates the topic–comment construction, with an independent subject phrase and a verb prefixed by a comment marker (glossed as “verb focus”; Sasse 1987:546). In example (46), the noun/verb combination is in its incorporated form (Sasse 1987:546)¹:

¹ The analogous thetic example in Sasse (1981:274) has the noun form *áddigéé*.

- (45) áddigéé á-juudi
father:my VF-died
'My father DIED.' [categorical, "verb focus"]
- (46) áddigéé juudi
father:my died
'My Father died.' [thetic; noun + verb in incorporated form]

A morphosyntactically more complex strategy is a **split structure (str)** (Sasse 1987:538). The clearest case of a split structure strategy occurs when the predicate is expressed in a subordinate form, and the most prominent referent is expressed in a nonsubject form. In this case, both the most prominent referent and the predicate are not expressed as they would be in the corresponding topic–comment construction.

The argument phrase in the split structure strategy is often identical in form to the presentational construction (see section 10.4). For example, one French thetic construction expresses the most prominent referent in any of the presentational constructions found in French: special presentative form, 'have' possession, and a form derived from a perception verb, in examples (47)–(49) respectively; and the predicate is expressed in a relative clause construction (Sasse 1987:538–39, from Wehr 1984; | indicates the break between the parts of the split structure):

- (47) J'ai téléphoné hier au plombier. **Il y a un tuyau** | **qui fuit.**
'I called the plumber yesterday. There's a PIPE | that's leaking.'
- (48) **J'ai mon gosse** | **qui est malade.**
'My KID is sick.' [lit. 'I have my kid | who is sick.']}
- (49) **Voilà la sirène** | **qui hurle.**
'The SIREN is wailing.' [lit. 'There's the siren | that's wailing.']}

In some French thetic constructions, only the predicate is in a form different from the form in the topic–comment construction (Sasse 1987:539, from Wehr 1984):

- (50) Madame, votre broche | **qui se décroche!**
'Madame, your BROOCH is coming off!' [lit. 'your brooch | that is coming off!']
- (51) Nous avons une invitation ce soir; et ma femme | **qui est malade!**
'We are invited out this evening; but my WIFE is sick!' [lit. 'and my wife | who is sick!']

Conversely, in the colloquial English construction illustrated in (52), it is the predicate that remains in the form found in the topic–comment construction, while the referent is expressed using a presentational construction (Lambrecht 2000:654; 1988:319):

- (52) a. **There was a ball of fire** | shot up through the seats in front of me.
b. **I have a friend in the Bay Area** | is a painter.

Thus, it appears that in the split structure strategy, only one of the two parts may be expressed differently than the corresponding element in the topic–comment construction; but that is enough to make it unlike the topic–comment construction.

In example (53) from French (Sasse 1987:538, from Wehr 1984), the predicate is expressed like a relative clause, but the referent is expressed in an equational form:

- (53) Qu'est-ce qu'il y a? — C'est maman | qui me bat.
 'What's the matter? — Mom's hitting me.' [lit. 'It's mom | that's hitting me']

In example (54) from Boni (Sasse 1987:542), the referent is also expressed in an equational form, but the predicate is expressed as it would be in the topic–comment construction:

- (54) (people crowding together, *máa širii* 'What's the matter?')
 moróɔrj-a | hiléekée ki-d'ifidi
 elephant-COP | friend:my LOC-hit
 [lit.] 'It's an elephant (he) hit my friend.'

The equational strategy is the same that we will see for identificational constructions – that is, the other information packaging function that differs from the common topic–comment function. It appears that the two less common, more unusual clausal information packaging functions may share morphosyntactic strategies.

Another strategy that differentiates only the prominent referent in the thetic construction from how it is expressed in the topic–comment construction is the use of a non-nominative flag for the referent. Example (55) is from Danish (Lambrecht and Polinsky 1997:200, from Jespersen 1924):

- (55) der Er dem som tror
 there is them.OBJ who believe
 'There are those who believe.'

The accusative flag is frequently used for thetic "subjects." Japanese has a nontopic Nominative flag, *ga*, that is used for thetic constructions, in contrast to the topic marker *wa* described in section 11.2 (Kuroda 1972:160; cf. Sasse 1987:514):

- (56) inu ga hasitte iru
 dog NOM running is
 'There is a dog running.'

Still another strategy that differentiates only the prominent referent is absence of indexation that otherwise occurs in the topic–comment construction. Example (57) shows indexation of the subject in a Russian topic–comment construction, while (58) shows absence of indexation, with the Impersonal (Lambrecht and Polinsky 1997:202):

- (57) pjat' fil'mov pojavi-li-s' na èkranax
 five films appear-3SG.PST-REFL on screens
 '(The) five movies were RELEASED.'
- (58) pjat' fil'mov pojavi-lo-s' na èkranax
 five films appear-IMPR.PST-REFL on screens
 'Five MOVIES were released.'/'There were five MOVIES released.'

Finally, there may be overt coding of the thetic construction, with a particle that may be recruited from the presentational or existential construction (Sasse 1987:543–44). In the Arabic example in (59), there is a thetic particle, in combination with expressing the most prominent referent in a non-nominative Accusative case (Sasse 1987:544):

- (59) 'inna zayd-an marid-un
 PRT Zayd-ACC sick-NOM
 'ZAYD is sick.'

Table 11.1 presents the strategies described in this section in terms of whether the most prominent referent and/or the event are expressed in the same way as the topic–comment construction, or not.

11.3.3 Weather Constructions as Thetics

The situation type that is perhaps most likely to be construed as thetic is the weather. Expressions of weather are typical as something that is announced, or as a background event, or may interrupt a conversation (e.g. if it starts raining while we are talking outside). But, above all, weather as a situation does not readily allow a construal as an event happening to a participant. Weather is sometimes analyzed as a “zero valency” predicate: it simply is an ambient phenomenon (sun, rain, wind, etc.). Hence, weather is most likely to be construed as a whole, as with the thetic construal, as well as typically being expressed as “all new” information.

This is manifested in the range of strategies used to express weather, which has attracted some attention in the typological literature (Croft 1991a:141–42; Ruwet 1991:106–15; Eriksen, Kittilä, and Kolehmainen 2010, 2012). We will summarize the main strategies here, and how they relate to the thetic strategies described in section 11.3.2 (see Eriksen et al. 2010, 2012, for a similar but more detailed typological classification of weather expressions).

The first two strategies treat the phenomena as unitary. In some languages, the announcement or presentation of weather can be expressed simply by an independent referring expression, as in spoken English:

- (60) Thunder!

The second unitary strategy is to express a predicate without a subject phrase. Many languages allow for zero expression of high accessibility referents,

Table 11.1 *Thetic strategies, and how they differ from the corresponding topic–comment construction*

Strategy	Referent phrase ≠ topic phrase?	Predicate ≠ comment?	Examples
prosody	Y (accented)	Y (not accented)	36
word order – SVO, nonrigid SOV	Y (postverbal)	N	37, 38, 40
word order – rigid SOV, V-initial/SVO	Y (bound to V)	N	39, 43
word order – rigid V-initial incorporation	Y (preverbal) Y (incorporated)	N Y (includes incorporated noun)	41, 42 46
split structure – presentational/ subordinate	Y (presentational)	Y (subordinate)	47, 48, 49
split structure – subject/ subordinate	N	Y (subordinate)	50, 51
split structure – presentational/ main	Y (presentational)	N	52a–b
split structure – equational/ subordinate	Y (equational)	Y (subordinate)	53
split structure – equational/main non-nominative form	Y (equational) Y (non-nominative)	N N	54 55
non-topic form	Y (non-topic)	N	56
absence of indexation	N	Y	58
special thetic marker	Y (marker)	Y (marker)	59

especially the primary topic; but in all such languages, weather expressions also have zero expression (Gilligan 1987). However, in at least some of those languages, expression of weather obligatorily excludes any sort of subject phrase. In Spanish, high accessibility topics may or may not be expressed with a subject phrase, but weather expressions can only occur without a subject phrase, as in example (61) (Gilligan 1987:75).

- (61) (*él) llueve
 (3SG) **rain**:3SG.PRS
 ‘It is raining’

The next two strategies morphosyntactically resemble a divided topic–comment structure, but have either a subject phrase or a predicate phrase that is virtually devoid of semantic content. Many languages use an “impersonal” subject phrase – that is, an invariant pronoun that does not refer to a participant – as in German or its English translation:

- (62) es regnet
 it rain:3SG.PRES
 ‘It’s raining.’

Alternatively, the weather event is construed as an argument, but with a predicate that has minimal content, as in example (63) from Motuna (Eriksen et al. 2010:581) and example (64) from Russian (Eriksen et al. 2010:586):

- (63) **hiing ngo-w-ito-no**
 wind **happen-3SG.S.MID-PRS.PROG-LOC**
 'The wind is blowing.'
- (64) **idet dozd'**
 goes rain
 'It's raining.'

The predicate may be an existential, i.e. typically thetic, predicate, as in Gungbe (Eriksen et al. 2012:390, from Enoch Aboh, pers. comm.):

- (65) **akpokpo tin**
 cloud exist
 'It is cloudy.'

There is a strategy in which there is a predicate and a subject phrase that are both relatively contentful, as in the Korean example (66), though the predicate is not very independently informative (Eriksen et al. 2012:393, from Jae Jung Song, pers. comm.):

- (66) **chentwung-i chin-nta**
 thunder-NOM beat-IND
 'It is thundering.'

But even the weather thetics with more contentful subject and predicate display certain peculiarities that indicate that there is not really much of an information split between the subject and the predicate in the construction.

For example, the subject may be a cognate subject – that is, the lexical root of the subject is the same as the lexical root of the predicate, as in example (67) from Mwotlap (François 2001:715; cf. Eriksen et al. 2010:592), and example (68) from Toqabaqita (Eriksen et al. 2010:584, from Frantisek Lichtenberk, pers. comm.):

- (67) **na-smal me-smal**
 ART-rain PRF-rain
 'It is raining.'
- (68) **thato e thato**
 sun 3SG.NFUT (sun)shine
 'The sun is shining.'

Third, the subject phrase may denote the ambient environment, as in example (69) from Kham (Watters 2002:234; cf. Eriksen et al. 2010:577), or a deity, as in example (70) from Mari (Salo 2011:418; cf. Eriksen et al. 2012:387):

- (69) **nəm wa-ke**
 sky rain-PFV
 'It rained.'

- (70) jumo kūðərt-a
God thunder-PRS.3SG
 ‘It is thundering.’

In other words, while it is not uncommon to have a divided construal of a thematically construed weather event, the strategies found reduce or eliminate either the subject phrase or the predicate phrase, compound the two, or express the weather event with more or less semantically redundant subject and predicate. All of these strategies reduce the divided information content of subject vs. predicate, fitting the unitary thetic construal as closely as possible.

11.4 Identificational Constructions

11.4.1 The Function of Identificational Constructions, and Contexts Typically Construed as Identificational

The third and last clause-level information packaging function is the identificational function. The identificational function divides the information in a clause in two, like the topic–comment function. However, it divides the clausal information in two in a quite different way.

In order to understand the way the identificational function splits clause information in two, we return to equational sentences, the identificational subtype introduced in section 10.1.2. The equational sentence in (71a) (from section 10.1.2) tells the hearer that two entities known by different descriptions are in fact one and the same. We can describe this assertion as an equation, as in (71b).

- (71) a. The Morning Star is the Evening Star.
 b. Morning Star = Evening Star

The new information provided by (71a) is not the existence of the Morning Star or of the Evening Star. Instead, it is the fact that the two are one and the same.

Example (71a) is a type of clause, but it lacks an event as part of the clause. However, identificational information packaging may involve events, as in (72a–b). Example (72a) uses prosody only, while example (72b) uses a morphosyntactically more complex construction, called the English Cleft Construction, for (roughly) the same information packaging:

- (72) a. **JACK** stole my cookies! [not Frank]
 b. It was Jack **who** stole my cookies!
 c. the one who stole my cookies = Jack

Despite the differences between the equational construction in (71a) and the identificational constructions in (72a–b), all of these constructions equate two semantic components known from two different descriptions. For examples (72a–b), the equation holds between one semantic component of the clause, Jack, and the rest of the clause minus a specification of one part, the thief participant

role. The identificational construction is used to equate the “missing piece” of the clause (the thief) with Jack. The new information in (72a–b) is the fact that Jack fills the missing role. The fact that someone stole my cookies is, however, presupposed in the discourse context.

Thus, the two parts of identificational sentences are named and defined as follows:

- (i) A **presupposed open proposition (POP) (*inf*)**: a proposition (X stole my cookies, with an unknown part, X – hence, open proposition), which is already part of the shared knowledge of the speaker and hearer – that is, a presupposed open proposition
- (ii) A **focus (*inf*)** – here, Jack – which is identified as the “filler” for the open part of the POP: i.e. X = Jack.²

In examples (72a–b) – and, for that matter, in example (71a) – the unknown or missing piece of information in the proposition is an argument. In fact, however, an identificational sentence can focus (identify) **any** part of the information in a sentence:

- (73) I have ONE brother (not two brothers).
 (74) I HAVE finished my assignment!

In example (73), the POP is ‘I have X brother(s),’ and the numeral modifier ‘one’ is the focus, i.e. X = ‘one.’ In example (74), the unknown information is the polarity of the proposition, positive or negative, so the POP is something like ‘I finished my assignment {yes or no},’ and the focus is positive polarity, i.e. {yes or no} = ‘yes.’ This latter type of identificational sentence is called a **polarity focus construction (cpx)**, or truth-value focus construction. In the English Polarity Focus Construction, the accent usually falls on an Auxiliary that is part of the complex predicate (see section 13.4), such as *have* in (74). If the topic–comment construction lacks an auxiliary, then a form of *do* is added, as in *I DID finish my assignment!*

As the name of the polarity focus construction indicates, an identificational construction is sometimes called a focus construction. Some scholars (including Lambrecht 1994) analyze all of the clausal information packaging constructions described in this chapter as involving a division of the information into a focus and a presupposition. Lambrecht analyzes thetics – the “all new” information packaging – as ‘sentence focus,’ topic–comment as ‘predicate focus,’ and identificational as ‘argument focus.’ However, identificational sentences involve any type of information as the focus filling an open part of a POP. Even the predicate may serve as the focus of an identificational sentence. Example (75) is an

² Identificational constructions are frequently called ‘focus’ constructions in the literature. Here we will use Lambrecht’s term ‘identificational’ because ‘focus’ is also used to name the relevant part of the identificational construction. ‘Focus’ is also used for certain parts of the topic–comment and the thetic constructions, as described immediately below.

invented example, in which the predicate is the open part of the POP ‘I X’d you the book’ and the predicate ‘give’ is the focus:

- (75) I didn’t give you the book; **I LENT you the book.**

Example (76) is an attested example from a Grateful Dead discussion list, regarding a release of a compilation of live music from their Fall 1979 tour:

- (76) Road Trips Vol. 1, No. 1 - Fall 1979

tweedle dum - Jan 24, 2008 10:03 am (#38 Total: 42)

This release sounds a bit tinny to my ears. Kinda harsh to listen to, and because of that I’ve not been able to get into it much. And for the record, I **LOVE Fall 79.** DP5 is one of my favorite releases.

The first two sentences of the post might lead the reader to wonder what the writer thinks of shows from the Fall 1979 tour. Hence the discourse context sets up the POP ‘I X Fall 1979,’ with the predicate, specifically an evaluative predicate, as the open part of the POP. The penultimate sentence focuses the predicate and fills in the “missing” predicate, X = love.

As with the thetic information packaging function, certain discourse contexts are typically construed as identificational, and hence likely to be expressed by an identificational construction that is morphosyntactically distinct from the topic-comment construction (or at least prosodically distinct from it). The analysis of these contexts presented below is mostly from Dik (1997:330–35), with additions from Myhill and Xing (1996).

The prototypical discourse context that favors an identificational construal and hence a distinct identificational construction is an **information gap (inf)** in a proposition in the discourse. That is, the presupposed open proposition is available in the context. Example (77) is from Prince (1978:896):

- (77) So I learned to sew books. They’re really good books. **It’s just the covers that are rotten.** (Studs Terkel, Working, p. 409)

The speaker’s trade involves repairing books. Asserting that the books are really good evokes the POP ‘X is not good/rotten,’ since the books need repairing. The last sentence asserts that X = the covers.

Another very common discourse context with an information gap is that of questions and answers (the latter is called ‘completive’ by Dik). Questions ask the hearer to fill in the open slot in the presupposed open proposition, because the speaker cannot fill in that information. And answers fill in that information (Dik 1997:328):

- (78) WHERE is John going?

- (79) (John is going) to the MARKET.

Further discussion of questions and answers, including their typical strategies, will be found in section 12.3.

Another discourse context which can favor an identificational construal, but less so than an information gap, is **contrast (inf)**. In contrast, the context does not contain an open proposition, but it does contain a closed (or full) proposition, where the speaker wishes to contrast, correct, or challenge one of the semantic components of the proposition in the discourse context. That is, for the speaker, that semantic component corresponds to the focus, and the rest of the proposition in the context is the POP. Thus, in contrast contexts, the putative “missing piece” of the POP is not unknown but actually there, but the speaker wants to “set it aside” and “replace” it with a different filler of the open slot in the POP.

Dik divides contrast into two subtypes, counterpresuppositional and parallel. In **counterpresuppositional contrast (inf)**, the sentence rejects one component of a previously asserted full proposition, rather than a POP. The original assertion is taken to belong to the discourse context, that is, one would expect the full proposition to be presupposed; but the speaker rejects one semantic component of the original assertion.

Dik gives several types of counterpresuppositional contrast (Dik 1997:333–34):

- (80)
 - a. **Rejecting (inf):** (John bought apples.) No, he didn't buy APPLES.
 - b. **Replacing (inf):** (John bought apples.) No, he bought BANANAS.
 - c. **Expanding (inf):** (John bought apples.) He also bought BANANAS.
 - d. **Restricting (inf):** (John bought apples and bananas.) No, he only bought APPLES.
 - e. **Choosing (inf):** (Would you like coffee or tea?) COFFEE, please.

The first two types of counterpresuppositional contrast, in (80a–b), are the simplest: the speaker rejects one semantic component (in these cases, the apples); in (80b), the speaker also provides a replacement (bananas).

Counterpresuppositional contrast does not fit the analysis of identificational function as a division between a POP and a focus. There is a focus, but there is a full proposition in the discourse context, not an open proposition. A broader definition of identificational constructions would be required to include counterpresuppositional contrast. The broader definition treats the focus of an identificational sentence as being related to a set of alternative values to the focus in the common ground – that is, presupposed in the discourse context (König and Gast 2006:229; Gast and van der Auwera 2011:10; cf. Rooth 1992). That is, rather than a division between a focus and a presupposed open proposition, there is a division between a proposition containing a focus ('John bought bananas') and a presupposed **alternative proposition (inf)**, or propositions, containing a semantic value other than the focused value ('John bought apples'). The two theories of identificational function have in common that the open proposition minus the focused value or alternative values is presupposed. The difference is whether the relevant semantic component is open (unknown), or whether there are competing values for the relevant semantic component.

In example (80a), the speaker simply rejects the original assertion, without providing a focus value. The accent on *apples*, however, specifies which

semantic component is specifically being rejected by the speaker. In other words, the POP ‘John bought X’ is accepted by the speaker; all that the speaker rejects is that $X = \text{‘apples.’}$ In (80b), the speaker rejects the proposition with *No*, and asserts that $X = \text{‘bananas.’}$

The third and fourth types of counterpresuppositional contrast are more complex. In (80c), the speaker’s replacement is a superset of what was asserted: the speaker doesn’t deny that John bought apples, but considers it relevant that John bought more than apples. In (80d), the situation is the opposite. The speaker’s replacement is a subset of what was asserted: again, the speaker doesn’t deny that John bought apples, but does deny that John bought bananas. In (80e), the alternatives are explicit in the context, and the addressee chooses one of them.³

In (80c–d), the overlap between what was originally asserted and what the speaker counter-asserts is expressed using a **focus operator** (*cxn*). The term ‘operator,’ from Gast and van der Auwera (2011), is used here to generalize over any strategy used to express the focus functions in (80c–d). The focus operator in (80c) is an **additive** (sometimes also called ‘inclusive’) **(focus) operator** (*cxn*): the expanding counter-assertion includes something absent from the original assertion – in (80c), the buying of bananas. The focus marker in (80d) is a **restrictive** (also called ‘exclusive’) **(focus) operator** (*cxn*): the restricting counter-assertion excludes something present in the original assertion – in (80d), the buying of bananas.

Focus operator constructions have not been deeply explored typologically. Gast and van der Auwera (2011, 2013) propose universals of polysemy and semantic change for different functional subtypes of additive operators. König and Gast (2006) argue that ‘intensifiers’,⁴ such as *themselves* in *Writers themselves, rather than their works, should be examined for their sense of social responsibility*, are a type of focus construction, though different from additive and restrictive operator constructions. They argue that *themselves* as an ‘intensifier’ functions as a focus of identity against a set of alternative propositions (in this case, that writers’ works should be examined for their sense of social responsibility). König and Gast (2006) describe the syntactic and semantic origins of ‘intensifiers’ and their often close relation to reflexive forms (see section 7.2). However, the scope of this textbook, and the need for greater empirical research on these constructions, means that we will not explore their typology in greater detail here.⁵

³ Dik’s term is ‘selecting’; it has been changed here since ‘selecting’ is used with another meaning in this book (see section 4.1.3).

⁴ The function called ‘intensifier’ by König and Gast is a different function than ‘intensifier’ used to indicate a higher degree than normal on a property scale (see section 4.1.2). For this reason, it is used in quotes in this paragraph.

⁵ Likewise, we will not discuss selecting contrast, which has not been described typologically. Selecting contrast is like restricting contrast in that the focus is narrower; but the prior assertion presents alternatives, rather than asserting that all the alternatives hold.

Dik does not analyze parallel contrast in further detail, but Myhill and Xing (1996) present a classification of three types of parallel contrast. **Parallel contrast (*inf*)** involves two propositions that exhibit some sort of parallelism in their structure, and there is a difference in semantic components in parallel positions that is construed as a salient contrast. Example (81) is from Biblical Hebrew (Myhill and Xing 1996:314):

- (81) vayašev ?et kol-harxuš vgam ?et-lot ?ahiv
 and.he.brought.back ACC all.the.goods and.also ACC-Lot his.kinsman
 urxušo hešiv...
 and.his.goods he.brought.back
 'He brought back **all the goods**, and he also brought back **his kinsman Lot and his goods.**'

In (81), an example of **listing contrast (*inf*)**, the two propositions are identical except for the single set of contrasting parts, all the goods vs. Lot and his goods. The contrasting parts are construed as belonging in a poset relationship, defined by the poset relations described with respect to topics in section 11.2.3 (Myhill and Xing 1996:310–11 list common poset relations that they used in their analysis of Biblical Hebrew and Chinese). This is the clearest case of parallel contrast, since there is only one contrasting element and the rest of the two propositions is identical.

Myhill and Xing argue that propositions with more than one contrasting semantic component may also be examples of contrast. In what they call **verbal contrast (*inf*)**, the verbs (predicates) in the two propositions have opposite meanings, while other parallel components of the proposition are in poset relations. Types of opposite meanings are a verb and its explicit negation, such as 'eat' vs. 'didn't eat'; a verb vs. another verb that implicitly negates the first verb, as in 'accept' vs. 'reject'; verbs with opposite evaluative connotations as in 'bless' vs. 'curse'; verbs with opposite directions, literally ('arrive' vs. 'leave') or metaphorically ('buy' vs. 'sell') (Myhill and Xing 1996:315).

Example (82), also from Biblical Hebrew, illustrates verbal contrast (Myhill and Xing 1996:315–16):

- (82) vnatanu ?et-bnoteynu laxem v?et-bnoteyxem
 and.we.give ACC-our.daughters to.you and.ACC-your.daughters
 niqah lanu...
 we.take to.us
 'We will **give** our daughters to you and we will **take** your daughters for
 ourselves.'

'Give' and 'take' are opposite predicates, and their parallel object and oblique arguments each form posets: our daughters and your daughters, you and us.

Finally, there is **nonverbal contrast (*inf*)**. In nonverbal contrast, the verbs are identical or virtually synonymous, and there are at least two sets of parallel nonverbal components that are in poset relations. Example (83) from Biblical Hebrew illustrates nonverbal contrast (Myhill and Xing 1996:317):

- (83) vayiqra? yosef ?et-šem habxor mnašeh...
 and.called Joseph ACC-name.of the.firstborn Manasseh
 v?et šem hašeni qara? ?efrayim...
 and.ACC name.of the.second he.called Ephraim
 ‘...and Joseph called the name of the elder [of his two sons] Manasseh...
 And he called the name of the second Ephraim.’

Both verbs mean ‘call,’ and their parallel object and stative complex predicates form posets: the name of the first and the name of the second, and Manasseh and Ephraim, respectively (for stative complex predicates, see Chapter 14).

Parallel contrast only weakly fits even the broad definition of identificational function. The prior proposition is not really an alternative to the proposition in the identificational construction, as with counterpresuppositional contrast. That is, the proposition with the focus does not reject or replace the prior proposition. It simply adds new information that is structured in a parallel fashion to the information in the prior proposition, in the ways described by Myhill and Xing.

There is some evidence that the first sentence in a parallel contrast situation serves as the “background,” “alternative” proposition. Myhill and Xing note that the first proposition may not be in a morphosyntactically distinct identificational construction. For example, in (81)–(83), only the second clause exhibits the object–verb word order that differentiates the identificational construction from the verb–object order of topic–comment constructions in Biblical Hebrew. This shift in construction suggests that the second sentence takes on the identificational function, with a focused semantic component, in contrast to the first sentence, even though the first sentence is not an “alternative” to the second sentence.

Of the functions described in this section, parallel contrast is the function least likely to be expressed by a special identificational construction.

11.4.2 Strategies for Identificational Constructions

The range of strategies for identificational constructions has not been systematically explored across languages. Part of the difficulty in surveying identificational constructions is how they are defined and exemplified. Terms such as ‘emphasis,’ ‘focus,’ and ‘contrast’ are used, but these do not distinguish between information gap, counterpresuppositional contrast, and parallel contrast functions. The different functions (and subfunctions) of identificational constructions may use different strategies. Since the identificational function requires a presupposed proposition (open proposition or alternative proposition) in the discourse context, isolated sentence examples do not provide the context to determine what type of identificational function is intended, without a more detailed description. As a result, this section will simply survey the strategies used in identificational constructions, without proposing generalizations about their occurrence across languages.

The strategies largely overlap with the strategies for thetic constructions – the other clause-level information packaging that differs from the default topic–comment packaging. A shift in prosody from the topic–comment pattern in the language is characteristic of identificational, as well as thetic, constructions. This obviously applies to spoken languages, but may also be used in written language, such as the post from an online discussion forum in (76), where all caps was used to evoke the prosodic accent. Prosody may be the sole strategy distinguishing identificational constructions from topic–comment constructions, or it may accompany other strategies. Prosody is illustrated in examples (72a) and (73)–(75), all invented, as well as (76).

As with thetic constructions, a shift in word order is also used to distinguish identificational constructions from topic–comment constructions. In examples (81)–(83) from Biblical Hebrew, all of which are instances of parallel focus constructions, the focused element – a nonsubject argument – is placed before the verb, rather than after the verb, its normal position in a topic–comment construction. However, it does not appear that there is a typical focus position across languages. Myhill and Xing note that the correlation of parallel contrastive focus and preverbal position in Biblical Hebrew is probabilistic (Myhill and Xing 1996:306). However, Polish, which has verb–object order in its default topic–comment construction, has been described as having focused elements at the end of the clause (Dik 1997:426; see below). It has been suggested that in some languages with SOV word order for the default topic–comment construction, ‘contrastive focus’ (probably counterpresuppositional contrast) is immediate preverbal position, as in example (84) from Turkish (Miller 2006:167, from Erguvanlı 1984; gloss corrected by Bernard Comrie, pers. comm.):

- (84) parayı bir genç adama Murat verdi
money:DEF.ACC a young man:DAT **Murat** gave
'It was Murat who gave the money to a young man.'

Nevertheless, the crosslinguistic patterns for the word order of identificational constructions relative to the corresponding topic–comment constructions, if any, have not yet been established.

There are certain so-called “discontinuous” referring phrase constructions, in which the noun and its putative modifier are in separate phrases. The Polish example (41) from section 5.4 on the origins of modification constructions, repeated as (85) below, is an example of such a construction (Siewierska 1984b:60):

- (85) (Apparently they have a beautiful house.)
Nie! Piękny mają ogród. Dom mają kiepski.
no beautiful have garden house have crummy
'No! They have a beautiful garden. Their house is crummy.'
[lit. 'They have a crummy house']

In the analysis given in this chapter, the first clause in the response is counterpresuppositional to the contextual assertion in parentheses. Its focus is the final

word *ogród* ‘garden’; that is, the POP is ‘They have a beautiful X.’ The second clause could be construed as a nonverbal parallel contrast construction relative to the first clause, or as a counterpresuppositional contrast to the contextual assertion. Again, the focus is the final word *kiepski* ‘crummy’ as it represents the contrast to the first clause and the rejection of the contextual assertion. In both clauses, only part of the referring phrase is focused.

A similar analysis applies to at least some cases of so-called “discontinuous” referring phrase constructions in Australian Aboriginal languages (cf. Louagie and Verstraete 2016:51–54). Example (86) is from Wardaman (Merlan 1994:241):

- (86) [lege walanja] nga-ga-ndi go [yidinen-bi]
 one(ABS) goanna(ABS) 1SG-take-PST 3SG.DAT **whole-ART**
 ‘I took one goanna for him whole (i.e. one whole goanna)’

Merlan describes the initial element as ‘thematic,’ while the final element is the information focus (contrastive; Merlan 1994:242). In the analysis given in this chapter, the initial element is part of the POP, and only the modifier ‘whole’ is in focus. McGregor (1997) offers a similar analysis of Gooniyandi. Schultze-Berndt and Simard (2012) argue that Jaminjung uses “discontinuous” referring phrases not only for identificational constructions, but also for thetic constructions, as in example (87) (Schultze-Berndt and Simard 2012:1041):

- (87) jarndu ga-ram luba mangurn=mij!
boat 3SG-come.PRS **big** white_person=COM
 ‘There comes a big boat with white people!’

Likewise, in Babungo, a Bantu language, numerals modifying the Subject or Object referring phrase are placed toward the end of the clause when they are the focus in a counterpresuppositional contrast construction (Schaub 1985:122–23):

- (88) mè yè nyáasə ták yìbìi y᷑ sèbòɔ
 I see-PFV animals in pit that **two**
 ‘I saw TWO animals in that pit.’

In contrast, in Ngiti, the numeral is placed at the beginning of the clause (Kutsch Lojenga 1994:354–55; sc = Subject Concord):

- (89) àrà ma m-òkèrè itsu
 eight 1SG sc-cut:PFV.PRS tree
 ‘I have cut EIGHT trees.’

In all of these cases, the focus is placed in a position that separates it from the rest of the referring phrase because the rest of the referring phrase is part of the POP.

A common overt morphosyntactic strategy for the identificational construction is a **cleft strategy (str)**. The cleft strategy uses an equational copula (see section 10.1.2) to link the focused element and the presupposed remainder of

the clause. The cleft strategy clearly divides the identificational construction into its two functional parts, the focus and the presupposed open proposition. English has three different identificational constructions using the cleft strategy: the Cleft (also called *It*-Cleft) Construction in example (77) above, repeated as (90) below; the Pseudocleft (also called *WH*-Cleft) Construction in example (91) (Prince 1978:887); and the Reverse Pseudocleft Construction in example (92) (Miller 2006:171):

- (90) So I learned to sew books. They're really good books. **It's just the covers that are rotten.**
- (91) Nikki Caine, 19, doesn't want to be a movie star. **What she hopes to do is be a star on the horse-show circuit.** (*Today* magazine, October 10, 1976, 44)
- (92) That's what I've done.

In (90)–(92), the presupposed part is expressed like a subordinate clause, a relative clause in English as well as many other languages (see Chapter 18).

In Irish, the cleft strategy contains a pronoun or a general noun modified by a relative clause (Miller 2006:185, 186):

- (93) sin é atá siad a dhéanamh
that.is it REL.be they PROG do
'That is what they are doing.' [lit. 'That is it that they are doing']
- (94) sin é an rud atá siad a dhéanamh
that.is it the thing REL.be they PROG do
'That is what they are doing.' [lit. 'That is the thing that they are doing']

Examples (93)–(94) look more like the equational construction, in that the presupposed part of the identificational construction is more like a typical referring expression with a head noun or pronoun, very general in meaning, and a modifying construction.

Another construction that is similar to equational constructions is the Focus Antipassive Construction found in Mayan languages, such as Tzutujil. The Focus Antipassive forms are used when the agent or an instrument is the focus of an identificational construction. Examples (95) and (96) are examples of the Agent Focus Antipassive Construction, example (96) being a question (Dayley 1989:385, 352; INCmpl = Incompletive):

- (95) oojeer ixoqii7 n-ee-b'an-owi
before **women** INCmpl-3PL.ABS-do-FOC.ANTP
n-ee-chap-o ch'uu7
INCmpl-3P.ABS-catch-FOC.ANTP fish
'Before it was women who did it, who caught fish.'
- (96) naq x-at-sok-owi?
who/what CMPL-2SG.ABS-hurt-FOC.ANTP
'Who/what hurt you?'

The Focus Antipassive form is also used for relative clauses, and so resembles the cleft strategy where a relative clause is used to express the presupposed open proposition. The initial agent noun might appear equational, as the third singular cleft construction has a zero pronoun. But it may be better to say that the identificational construction expresses the topic phrase followed by a presupposed open proposition in a subordinate clause form that distinguishes it from the comment part of a topic-comment construction. If so, then it may represent a slightly different strategy than the cleft strategy.

Finally, there may simply be a grammaticalized overt coding of focus, either as an independent particle or as an affix, as in Rendille (Heine and Reh 1984:165):

- (97) *inam-é y-imí*
 boy-FOC he-came
 'The BOY came.'

Heine and Reh (1984:147–82) argue that grammaticalized focus marking generally comes from a copula verb – that is, the grammaticalized strategy historically evolves from the equational strategy (see also Harris and Campbell 1995:151–65 for additional examples of this diachronic process).

Further, an identificational construction with a grammaticalized focus marker may come to be recruited for all clauses. The Rendille Focus Marker *-é* is used only when an argument is the focus. Rendille uses a different affix, *á-*, when the predicate is the focus (Heine and Reh 1984:166):

- (98) *á-y-imí*
 PFOC-he-came
 'He CAME.'

However, almost every Rendille sentence requires a focus marker, either the Nominal Focus *-é* or the Predicate Focus *á-*. Hence, a construction that originated in the identificational function has been recruited for the other clausal functions as well.

Another strategy that is associated with identificational constructions but is little explored crosslinguistically is the zero coding of some or all of the presupposed proposition, usually called ellipsis (*str*):

- (99) a. (Who took the cookies?) It was JIM./JIM.
 b. (Terry took the cookies.) No, it was JIM./No, JIM did.
- (100) Ronald made the hamburgers, and SALLY Ø the SALAD.

In (99a–b) – examples of information gap and counterpresuppositional contrast, respectively – the presupposed open proposition is left unexpressed, or expressed only by a ‘pro-verb’ *did* that expresses identity of the event type with the event type in the context. In (100), a nonverbal parallel contrast construction, the identical verb is left unexpressed. This construction is traditionally called Gapping in English syntax, and is usually discussed as a special type of coordination

construction (see section 16.5). However, it may also be better considered as a special type of parallel contrast construction using the zero coding strategy for the identical – and hence presupposed – part of the second clause.

11.5 Summary

The predication or topic–comment information packaging of clauses is not the only such information packaging. There are two alternative construals or packaging of information in clauses: the thetic function and the identificational function. It is sometimes difficult to identify these two functions. However, certain situation types or discourse contexts favor thetic or identificational construal to a greater or lesser degree, and many languages have distinctive constructions for these situation types that differ from the default topic–comment construction.

Two strategies that have not played a great role in the constructions described in the textbook until now seem to be very common for information packaging at the clause level. Thetic and identificational constructions are often characterized by a distinct prosody and/or a distinct word order in comparison to the default topic–comment construction and its characteristic prosody and word order. The distinct prosody and/or word order are often found even when the thetic and identificational constructions also differ from the topic–comment construction in their morphosyntactic structure.

There are a variety of morphosyntactic strategies for thetic and identificational constructions. However, the strategies for thetic constructions generally express the topic/subject and/or the predicate in a different form from their expression in the topic–comment construction. This was taken to capture the fact that the thetic construction is maximally different from the topic–comment construction as it is an “all new” presentation of the clausal information. The strategies for the identificational construction seem to go back, at least diachronically, to an equational construction, the identificational subtype introduced in section 10.1.2. The identificational strategy divides the clausal information in half, like the topic–comment construction, but the two parts are a focus and a presupposed open proposition.

In Chapter 12, we turn to other constructions that appear to be interconnected to the information packaging constructions described in this chapter: modality, polarity, and so-called sentence type or speech act constructions.

Terms Defined in this Chapter

11.1 Introduction

topic–comment (*inf*), thetic (*inf*), identificational (*inf*), propositional content (*sem*), proposition (*sem*)

11.2 Topic-Comment Constructions

11.2.1 Function of Topic-Comment Constructions, and the Problem of Multiple Referents

topic-comment constructions (*cxn*), about(ness) (*inf*)

11.2.2 Strategies for Topics that Are Not the Most Central Participant

detached (topic phrase) (*str*)

11.2.3 Nonparticipant (Hanging) Topic Phrases

hanging topic phrase (*cxn*), poset (*inf*), trigger (*inf*), link (*inf*)

11.3 Thetic Constructions

11.3.1 Function of Thetic Constructions, and Contexts Typically Construed as Thetic

entity-central (*inf*), event-central (*inf*), weather (*sem*), explanation (*inf*), interruption (*inf*), announcement (*inf*), background description (*inf*)

11.3.2 Strategies for Thetic Constructions

prosody (*str*), split structure (*str*)

11.3.3 Weather Constructions as Thetics

11.4 Identificational Constructions

11.4.1 The Function of Identificational Constructions, and Contexts Typically Construed as Identificational

presupposed open proposition (POP) (*inf*), focus (*inf*), polarity focus (a.k.a. truth-value focus) construction (*cxn*), information gap (*inf*), contrast (*inf*), counterpresuppositional contrast (*inf*), rejecting (*inf*), replacing (*inf*), expanding (*inf*), restricting (*inf*), choosing (*inf*), alternative proposition(s) (*inf*), focus operator (*cxn*), additive (a.k.a. ‘inclusive’) operator (*cxn*), restrictive (a.k.a. ‘exclusive’) operator (*cxn*), parallel contrast (*inf*), listing contrast (*inf*), verbal contrast (*inf*), nonverbal contrast (*inf*)

11.4.2 Strategies for Identificational Constructions

cleft strategy (*str*), ellipsis (*str*)

11.5 Summary

12 Speech Act Constructions

12.1 Introduction: Speech Act Constructions and Their Relation to Modality, Polarity, and Information Packaging

In Chapter 11, we described three ways to package the propositional content of a clause. The first is topic–comment packaging, which divides the propositional content into a topic or topics and a comment, corresponding to the argument(s) and predicate that is the default assumed in the preceding chapters about other grammatical topics. The second is thetic packaging, which presents the information as a single, “all new” package. The third is identificational packaging, which divides the propositional content into a presupposed open proposition – already evoked content with a “missing piece” – and a focus that highlights or fills in the missing piece.

These different information packaging functions serve to present the propositional content in certain ways that are useful in the discourse. Although we will not explore discourse structure in this textbook, in this chapter we make a connection between the sort of information packaging described in Chapter 11 and a more explicitly interactional set of constructions. These constructions express **speech acts (*inf/cxn*)**. Speech acts signal overtly that the speaker wants or requires an explicit response from the addressee. There are many different kinds of speech acts, including questions, commands, promises, bets, christenings, marriage vows, sentencing in a trial, and so on (see, among others, Searle 1969 and Hancher 1979).

This being a textbook on grammatical constructions – that is, conventionalized pairings of morphosyntactic form and linguistic function – we will focus on the speech acts that are commonly expressed as morphosyntactically distinct constructions across languages. Typological surveys of speech act constructions (Sadock and Zwicky 1985; König and Siemund 2007) recognize three common distinct speech act constructions, plus a fourth that is less common as a distinct speech act construction but appears to be attested in many languages.

The first is the **declarative (*inf/cxn*)**, which simply asserts some propositional content. The declarative is the most common speech act construction, and is considered the default type of speech act construction. Almost all of the examples in this book so far are instances of the declarative construction. Although

the declarative construction is not usually considered to be interactional, like all utterances it is intended to engage the addressee: it invites the addressee to accept it, and if the addressee does accept it, the proposition is added to their shared knowledge (also known as common ground; Clark 1996:ch. 4).

The other most common speech acts that are expressed as distinct constructions are the **interrogative** (also described as **questions**) (*inf/cxn*), which asks a question (i.e. requests information), usually of the addressee; and the **imperative-hortative** (*inf/cxn*), which requests that an action be carried out, prototypically by the addressee but possibly by other persons. These other types of sentences require a more active collaboration on the part of the addressee for a successful outcome of the action: answering the question or complying with the request. It is this more active collaboration that is presumably encoded by distinct sentence types, at least for interrogative and imperative.

The fourth speech act, and the least common to be expressed as a distinct construction, is the **exclamative** (*inf/cxn*), which expresses a strong emotional reaction to the propositional content (Sadock and Zwicky 1985:162; see also Michaelis 2001, and section 12.5.1 for a more precise definition of the exclamative function). The emotional response does not directly demand active collaboration by the addressee, but it invites a stronger response of assent (or perhaps dissent) from the addressee than a simple unemotional declarative.

I mentioned many more types of speech acts that require active collaboration between the interlocutors, such as promises, bets, vows of marriage, and so on. Why do they not have morphosyntactically distinct constructions – or, at least, do not commonly have distinct constructions? It is possible that better cross-linguistic documentation would change this picture, but perhaps there are good reasons why distinct constructions for these types are rare or nonexistent.

It appears that languages (i.e. their speakers) make a fundamental distinction between collaboration with their interlocutors that pertains to **knowledge**, **action**, and **emotion** in differentiating speech acts grammatically (Croft 1994b). Collaboration in knowledge corresponds to interrogatives: the question and answer together fill out the information to be shared. Collaboration in action corresponds to imperatives and related types: the request and its compliance (not always accompanied by a linguistic response) together achieve the joint action. Finally, the emotional expression in an exclamative invites empathy by the addressee. These fundamental categories of shared experience may motivate the evolution of distinct constructions across languages.

The speech act functions that are expressed by the distinct constructions may also be expressed by a declarative construction. That is, the declarative construction may be recruited to express the need to fill in missing information, the need for someone to do something, or an emotional response to the information being conveyed. In fact, there is often no sharp line between a simple assertion and a speech act that invites a response from the addressee.

For example, in English at least, there are a variety of hedged assertions and biased questions that demonstrate that there is a continuum from the speaker

firmly asserting something, to degrees of uncertainty, to the speaker having no idea and inviting the addressee to complete the assertion. Example (1) illustrates the continuum from a declarative to interrogative for a polarity question – that is, a question that asks for a yes/no answer (section 12.3.1; examples from Croft 1994b:467; see also Givón 1984:250; accents indicate prosody):

- | | | |
|-----|----------------------------------|--|
| (1) | a. He's going to come. | [unhedged assertion] |
| | b. He's going to come, is hé? | [same-polarity tag question, expecting confirmation] |
| | c. He's going to come, isn't he? | [reverse-polarity tag question, requesting confirmation] |
| | d. Isn't he going to come? | [positive-biased polarity question] |
| | e. Is he going to come? | [unbiased polarity question] |

Likewise, English has different means for requesting action from the addressee, ranging from declaratives to the special imperative construction (adapted from Givón 1984:250):

- | | |
|-----|--|
| (2) | a. The door needs to be closed. |
| | b. It would be nice to have the door closed. |
| | c. It would be nice if you closed the door. |
| | d. You could/may close the door. |
| | e. You should/must close the door. |
| | f. Close the door! |

For the continuum from declarative to imperative, most of the intermediate forms involve some sort of **modality (sem)**. Modality is a grammatical semantic category that is difficult to characterize in general. Modals generally indicate that the propositional content is not simply true. In the case of the examples in (2a) and (2d–f), the propositional content – the door being closed – is not true, it is just a state of affairs desired by the speaker. The type of modality found in the examples in (2a) and (2d–f) is called **deontic modality (sem)**. (Examples [2b–c] are slightly different semantically; see section 12.4.1.)

Modality is also used to express uncertainty of knowledge; this is called **epistemic modality (sem)**. The examples in (3) show a continuum between declarative and interrogative that uses epistemic modality for the intermediate categories: a verb of uncertainty in (3b), and a modal auxiliary in (3c):

- | | |
|-----|---|
| (3) | a. He's going to come. |
| | b. I wonder if/whether he's going to come. |
| | c. He might come. |
| | d. Is he going to come? |

For this reason, modality in relation to speech act constructions will be discussed in this chapter. However, because a common strategy for modality is the employment of a complex predicate construction, most of the strategies for expressing modality will be described in Chapter 13.

The exclamative construction may also recruit a declarative construction. There is also a continuum from a declarative to an exclamative:

- (4)
- a. There's a huge tree over there.
 - b. That's a **HUGE** tree!
 - c. What a huge tree!

There is no modal category for the exclamative construction – at least according to the traditional definition – since the propositional content is asserted to be true in addition to the emotional response indicated by the exclamative. However, it has been argued that there is an intermediate function that indicates surprise at the reported situation on the part of the speaker. This function is called **mirative (sem)**. The mirative as well as the exclamative will be discussed in section 12.5.

Another important functional parameter that is sometimes categorized with modality, and certainly is central to the function of speech act types, is **polarity (sem)**: **positive (sem)** vs. **negative (sem)**. Polarity is related to modality in that the positive/negative contrast is, of course, central to the truth of the proposition being expressed. Grammatically, polarity interacts with speech act constructions in that the negative counterparts of the speech act constructions are often morphosyntactically distinct from the positive constructions.

We have alluded to the existence of morphosyntactically distinct constructions for at least the interrogative, imperative–hortative, and exclamative constructions. These distinct constructions have been called ‘sentence types.’ However, there is no clear definition of what counts as a distinct sentence type from a grammatical (structural) perspective. How different does a construction have to be in order to be considered a morphosyntactically distinct construction type? What sorts of strategies are found to distinguish different sentence types?

A survey of commonly invoked structural properties indicates that distinct sentence types are characterized by strategies that are salient properties of the clause as a whole (Clausner 1991; Croft 1994b:464):

- (i) A difference in intonation contour over the clause
- (ii) Placing a special grammatical element in a salient position in the clause: first, second, or last position
- (iii) Alteration of the head of the clause, namely the verb, via addition or removal of an inflection
- (iv) Change in word order of the main elements of the clause, e.g. the initial position of interrogative pronouns, as in *Who did you meet?* vs. *I met my great-uncle* (the most typical use of this grammatical strategy; see section 12.3.3)
- (v) Absence of a major element of the clause, e.g. the second person subject phrase or index in imperatives

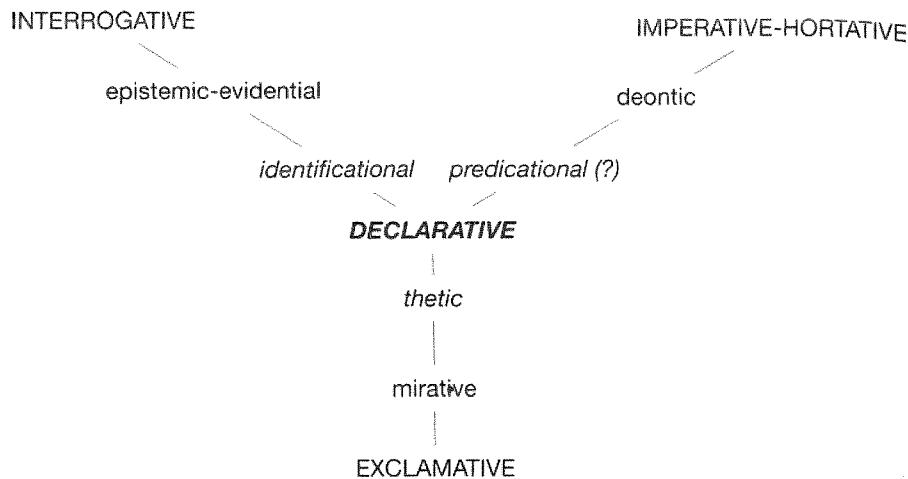


Figure 12.1 *The relationship between speech act constructions, modality, and clausal information packaging*

These strategies overlap considerably with the strategies used for morphosyntactically distinct thetic and identificational constructions: (i) is prosody, (ii) and (iv) are word order, and (iii) is a special verb form, or overt morpheme – all defined at the clause level.

The topic-comment, thetic, and identificational functions are all declarative; they pertain to the packaging of the propositional content, not how the propositional content is employed interactively in speech acts. There is some evidence, however, that these three functions are related to the three nondeclarative speech act functions and may evolve into the nondeclarative speech act constructions. The evidence is clearest for the relationship between identificational and interrogative constructions, and there is evidence for the relationship between thetic and exclamative constructions (and also mirative constructions). This leaves topic-comment and imperative-hortative constructions: the connection is plausible, but typological evidence supporting the relationship is not available.

The relationships between the declarative and nondeclarative speech act constructions, modality, and the clausal information packaging constructions are displayed in Figure 12.1. The central function in the figure is the declarative speech act type. A declarative sentence may be packaged as predicational (topic-comment), thetic, or identificational (Chapter 11). The modal types (epistemic-evidential, deontic, and mirative) express a speaker attitude that invites an addressee response; the other speech act types (interrogative, imperative-hortative, and exclamative) more strongly invite, or even require, an addressee response.

Figure 12.1 does not represent the positive-negative polarity contrast that crosscuts the categories in the figure. In section 12.2, we describe declarative negative constructions; negation of nondeclarative constructions is described with their positive counterparts in sections 12.3–12.5.

12.2

Polarity: Negation of Declaratives

Polarity is intimately tied up with speech act constructions and the modal constructions (see section 12.1). Positive polarity is overwhelmingly frequently (though not universally) zero coded, or at least serves as the default speech act construction. Negative polarity is equally overwhelmingly overtly coded with respect to positive polarity. For this reason, this section focuses on **negation constructions (cxn)** – specifically, the **declarative negation construction (cxn)**.

The strategies for encoding negation are described in some detail here. The range of strategies used for the negation construction is essentially the same as is used for modal constructions: inflection, independent word, complex predicate, and verb with complement. This section illustrates these strategies for negative constructions; they will not be illustrated for modal constructions in this chapter (but see sections 13.3.2, 18.2.2).

In a very large number of languages, negation is expressed as an overt bound morpheme affixed on the verb (Dahl 1979:84; Dryer 2005a:454). Example (5) illustrates negative inflection in Tuyuca (Barnes 1994:331), and example (6) illustrates negative inflection in Kolyma Yukaghir (Dryer 2005a:454, from Maslova 2003:492):

- (5) diayi yiː-re baka-ri-ti
dog 1SG-SPEC bite-NEG-EVID
'The dog didn't bite me (I did not feel his teeth in my flesh).'
- (6) met numə-ge el-jaqa-te-je
1SG house-LOC NEG-achieve-FUT-INTR.1SG
'I will not reach the house.'

In an equally large number of languages (Dahl 1979:84), or a significantly larger number in Dryer's (2005) sample, the overt negative morpheme is an uninflected independent word form, as in example (7) from Musgu (Meyer-Bahlburg 1972:186; cf. Dryer 2005a:454):

- (7) à sèdà cécébè pày
3SG.M know jackal NEG
'He didn't see the jackal.'

In a much smaller proportion of languages, negation is verblike in morphosyntactic structure (Dryer 2005a:454). These constructions vary in the degree of integration of the verb that expresses the action and the verb expressing the negation of the action. In example (8) from Boumaa Fijian, negation is expressed as a main verb, and the action verb is in a subordinate clause introduced by the complementizer *ni* (Dixon 1988:40; cf. Dryer 2005a:454; see also section 18.3.1):

- (8) e sega ni la'o o Jone
3SG NEG COMP go ART John
'John is not going.' [lit. 'It is not the case that John is going']

In other words, the negative construction in (8) recruits a complex sentence construction with two clauses, one of which serves as a complement of the other (the negative verblike form; see Chapter 18 for a discussion of the strategies for complement constructions).

In other languages, the negative form is in a tighter combination with the action verb. In example (9) from Finnish, the negative form inflects for verbal categories, and the action verb form is overtly coded as a ‘participle’ and does not inflect for verbal categories (Dryer 2005a:454, from Sulkala and Karjalainen 1992:115):

- (9) e-n syö-nyt omena-a
NEG-1SG eat-PTCP apple-PRTT
'I didn't eat an apple.'

In example (10) from Grebo, the negative form inflects like an action verb, while the action verb is uninflected (Innes 1966:106; cf. Dryer 2005a:454):

- (10) ne¹ yi²¹-da² bla⁴ du¹ mole
1SG.SBJ NEG-PST.BEFORE.YEST rice pound Monday
'I did not pound rice on Monday.'

The negative constructions in (9)–(10) recruit a complex predicate construction in which (at least) two independent words, one of which in turn recruits verbal form, serve as the predicate of the clause (see Chapter 13 for a discussion of the strategies for complex predicate constructions).

It is sometimes difficult to distinguish a complex sentence from a complex predicate for negative constructions (or for modal constructions, for that matter), since the former grammaticalizes into the latter. The latter in turn may grammaticalize into a particle and hence an affix:

complex sentence > complex predicate > particle > affix (inflection)

However, not all negative particles (and hence affixes) originate in verbal constructions such as complex sentence main clauses or parts of complex predicates. The second negative particle in example (11) from French (Dryer 2005a:454), *pas*, is historically from an emphatic noun form ‘step’:

- (11) je ne vois pas la lune
1SG NEG see.1SG NEG the moon
'I do not see the moon.'

In contemporary spoken French, the older negative particle *ne* is generally dropped, and *pas* is the only marker of negation. In English, the older negative particle *ne* combined with an emphatic particle *owt* to grammaticalize to the Modern English particle *not*.

This grammaticalization process occurs rapidly enough for many languages to employ a **double negation strategy (str)** (Dryer 2005a:455), as in (11) above, and (12) below, from Ma (Tucker and Bryan 1966:130; cf. Dryer 2005a:454):

- (12) tá-mù-sùbù-li nōngbō nyɔ̄
 NEG-1SG-eat-PST meat NEG.1SG
 'I did not eat meat.'

The double negation strategy may involve a negative morpheme that does not originate as a verbal form, as in French and English where the process is documented in the written record. In the case of Maori in (13), one cannot tell whether the negative form *kaahore* has a verbal origin, although it co-occurs with a tense-aspect particle *e* (Bauer with Parker and Evans 1993:140; cf. Dryer 2005a:454; T/A = Tense–Aspect particle; see also note 1):

- (13) kaahore taatou e haere ana aapoopoo
 NEG 1PL.INCL T/A move T/A tomorrow
 'We are not going tomorrow.'

In (13), neither the negative form nor predicated action words such as *haere* 'move' inflect for typical verbal categories. Even in (12), the second negative form is inflected for person and number, but may not be verbal in origin (the source calls it a "postposition," but it does not encode participant roles).

A not uncommon source of the declarative negation construction is a special **existential negation construction (cxn)** (Croft 1991b; Veselinova 2014, 2016). The grammaticalization process observed here is one where a distinct negation construction evolves for a thetic packaging function (existential) for declaratives, and then is extended to the topic–comment information packaging function.

This grammaticalization process begins with the fusion and reduction of the regular declarative negative form with the existential marker, as in Balinese (Croft 1991b:7, from the *Geguritan Calonarang*; John Myhill, pers. comm.):

- (14) asepi tan hana wong liwating awan
 deserted NEG EXST person pass_by street
 'It was deserted and there was no-one passing on the street.' (v. 151)
- (15) tanana seraya
 NEG.EXST substitute
 'There was no substitute.' (v. 219)

Next, the special negative existential form comes to be used for ordinary declarative negation, through competition, reinforcement, or partial replacement. For example, in Wintu the negative existential is used along with a negative verbal suffix to form negative verb constructions (Pitkin 1984:197–98; cf. Croft 1991b:10):¹

¹ The Maori negative form *kaahore* in example (13) may be originally a negative existential form (Veselinova 2014:1368).

- (16) ?elew-be:sken hara:-wer-mina
 NEG.EX-you.IMPF go-FUT-NEG
 'You were not supposed to go.'

Special negative existential forms are crosslinguistically the most frequent strategy, occurring in two-thirds of the ninety-five languages in a recent sample (Veselinova 2013:117), and they also arise very frequently (Veselinova 2016:173). These facts reinforce the notion that polarity is a major conceptual parameter for the grammatical expression of information structure at the clause level, to the point that a morphosyntactic distinction between negation of existence and negation of action is largely maintained, and is rapidly renewed when the distinction is lost after the negative existential comes to be used for declarative negation.

12.3 Interrogative Constructions

The functional parameters that differentiate interrogative constructions can be best understood by returning to the continuum of English constructions between declarative and interrogative in (1), repeated here as (17):

- (17) a. He's going to come. [unhedged assertion]
 b. He's going to come, is hé? [same-polarity tag question, expecting confirmation]
 c. He's going to come, isn't he? [reverse-polarity tag question, requesting confirmation]
 d. Isn't he going to come? [positive-biased polarity question]
 e. Is he going to come? [unbiased polarity question]

Examples (17b–e) vary on two functional dimensions. The first is the degree of uncertainty or doubt that the speaker has about part of the propositional content – in this case, the polarity of 'He is/isn't going to come.' The second is the degree to which the speaker is requesting confirmation, or, in the more uncertain cases, just provision of the missing information (is he or isn't he?), by the addressee. This is the interactional dimension of the interrogative function. The prototypical interrogative function, also called a question, requests that the addressee fill in the part of the propositional content that is unknown to the speaker.

In section 12.3.1, the most common functional types of questions are described. In section 12.3.2, the strategies for interrogative constructions will be described, and section 12.3.3 will describe the strategies for answer constructions. Some of these strategies are the same as the strategies for identificational constructions. This is because questions request the addressee to fill in the missing information of a presupposed open proposition. In section 12.3.4, the relation of the identificational function and epistemic modality to interrogative constructions is discussed. These modal functions are related to interrogatives in that both express degrees of uncertainty.

12.3.1

Functional Types of Questions

Questions are divided into three types based on functional differences: polarity questions, information questions, and alternative questions (Sadock and Zwicky 1985:178–80; König and Siemund 2007:290–92, among others).

In **polarity questions** (sometimes called yes/no or Y/N questions) (*inf/cxn*), the unknown piece of the propositional content requested of the addressee is the polarity (positive or negative) of the proposition:

- (18) Q: Are you coming?
 A1: Yes.
 A2: No.

In **information questions** (sometimes called content or WH questions) (*inf/cxn*), the unknown piece of the propositional content requested of the addressee is a semantic component of the proposition other than its polarity. Most languages have special interrogative pronouns for the information being requested (see section 3.4.2), and different pronouns depending on the semantic/functional type of information (human/nonhuman, place, time, modifier, etc.; see also section 3.1.3):

- (19) Q: **Who** is coming?
 A: Sandra (is coming).
- (20) Q: **What** are you eating?
 A: (I'm eating) a brownie.
- (21) Q: **When** is he coming?
 A: (He's coming) at 6:00.
- (22) Q: **Where** are we going?
 A: (We're going) to Moriarty.
- (23) Q: **Which** book is required reading?
 A: The typology book (is required reading).
- (24) Q: **How** did you do on the exam?
 A: (I did) very well (on the exam).

The third common question type is the **alternative questions** (*inf/cxn*). In alternative questions, the speaker offers a closed list of alternatives to fill in the unknown piece of information in the propositional content (König and Siemund 2007:291–92):

- (25) Q: Do you prefer **beer or wine**?
 A1: (I prefer) beer.
 A2: (I prefer) wine.

Functionally, alternative questions resemble polarity questions in that the question invites as a response one of a small, fixed number of answers. But the answers resemble the answers to information questions in that the answer chosen is not polarity but a specific piece of information (for more on the differences between polarity questions and alternative questions, see Bolinger 1978).

Alternative questions have not been explored typologically in much detail, so we will focus on polarity questions and information questions in this section.

12.3.2 Strategies for Interrogative Constructions

Polarity question constructions do not have interrogative pronouns that would identify them as questions (as opposed to assertions). The two overwhelmingly most common strategies for the expression of polarity questions are a distinct intonation contour (almost always a rising contour) and/or an overt interrogative particle (i.e. an invariant form; Ultan 1978; Dryer 2005b:470; König and Siemund 2007:292).

Intonation is not uncommon as the sole signal of polarity questions, as in example (27) from Italian, in contrast with the intonation of the declarative in (26) (König and Siemund 2007:293; \ and / indicate falling and rising intonation, respectively):

- (26) Suo marito è ancora \malato.
 her husband is still ill
 'Her husband is still ill.'

- (27) Suo marito è ancora /malato?
 her husband is still ill
 'Is her husband still ill?'

The use of an overt independent morpheme for the interrogative construction is illustrated in example (28) from Kiowa (Watkins 1984:211; cf. Dryer 2005b:470):

- (28) hó á-k'i· àn dét-mónyágóp...
 Q 2.POSS-husband HAB 2SG.OBJ-wave.IPFV
 'Does your husband wave to you...?'

Independent interrogative particles may grammaticalize into affixed interrogative morphemes, another not uncommon strategy, illustrated in example (29) from Hunzib (Dryer 2005b:470, from van den Berg 1995:112):

- (29) ēχ'e-čó-y
 go-PRS.2-Q
 'Are you going?'

Some interrogative particles are related to the forms introducing conditional clauses ('if'; König and Siemund 2007:296; see section 16.2). In Hua, the interrogative particle and the conditional marker are identical, namely *-ve* (Haiman 1978b:570–71; König and Siemund 2007:296); example (30) is from Haiman (1977:66) and (31) is from Haiman (1978b:570):

- (30) mi-ve
 give-Q
 'Did he give (it) (to him)?'

- (31) e-si-ve baigu-e
 come-3SG.FUT-Q will.stay-1SG
 'If he comes, I will stay.' [lit. 'Will he come? I will stay']

Traugott (1985:291, cited in König and Siemund 2007:296) argues that the conditional uses originate with the interrogative function.

Another type of overt interrogative marker is a **tag (str)**, such as the tag questions in (32)–(33) (Ultan 1978:224–26; König and Siemund 2007:296–97). Tags are typically positive, as in (32) from Russian (König and Siemund 2007:297); or negative, as in (33) from German (König and Siemund 2007:297; compare (17b–c), and see Ultan 1978:224 for other sources of tags):

- (32) Ty ego slyšal, pravda?
 you him heard true
 'You heard him, did you?' (lit. 'You heard him, (is it) true?')
- (33) Er ist sehr reich, nicht war?
 he is very rich, not true
 'He is very rich, isn't he?' (lit. 'He is very rich, not true?')

Are tags a plausible historical source for interrogative particles? Tags generally form biased questions, and they occur almost exclusively sentence-finally (Ultan 1978:224; König and Siemund 2007:297). Interrogative particles are frequently sentence-final, but they are also sentence-initial, especially in languages with verb-initial order (Greenberg 1966b:81; Dryer 2005c:374). It is possible that a biased question construction may lose its bias; but then a sentence-final tag form would have to move to sentence-initial position.

A rare strategy, but one common in Chinese languages and some neighboring languages, is the recruitment of a type of alternative question construction, called **A-not-A (str)** in Sinitic linguistics (Li and Thompson 1984:52–53; cf. König and Kokutani 2006:297):

- (34) tā zài jiā bu zài jiā
 3SG at home NEG at home
 'Is s/he at home?' [lit. '[is] sh/e at home, not at home?']
 (normally shortened to tā zài bu zài jiā or tā zài jiā bu zài)

The Mandarin construction suggests that polarity question constructions may also occasionally be recruited from alternative questions.

Finally, there is another rare strategy, which happens to occur in Germanic languages including English: a word order difference between declarative and polarity questions, as in the change in English auxiliary–subject order in the translations to (27)–(30).

Unlike polarity question constructions, information question constructions contain an interrogative pronoun or modifier for the entity to be identified in the answer to the question (see also sections 3.5, 11.4.2). Hence, information

questions often have a distinct interrogative form to identify them. König and Siemund suggest that this fact explains why distinct intonation and/or interrogative particles occur less often (that is, are optional or prohibited) with information questions than with polarity questions, which lack interrogative pronouns (König and Siemund 2007:299–301).

The most salient difference between information questions and declaratives in many languages is the position of the interrogative pronoun (or, more precisely, interrogative phrase, such as *which house...?*; Dryer 2005d:379). In a large minority of languages, including English, the interrogative phrase occurs obligatorily at the beginning of the sentence (Dryer 2005d:378):

- (35) a. Who did you see? •
 b. Which book do you want to buy?
 c. When are you going to leave?

Although the initial position of interrogative pronouns is widespread in European languages, the majority of languages do not obligatorily place the interrogative phrase at the beginning of the sentence. Most often, they simply occur where the ordinary phrase would occur, as in Mandarin (Li and Thompson 1984:51–52):

- (36) shéi yào mùguā
 who want papaya
 ‘Who wants papaya?’
- (37) nǐmen chī shénme
 you:PL eat what
 ‘What are you eating?’
- (38) nǐ yào něi-běn shū
 you want which-CLF book
 ‘Which book do you want?’

12.3.3 Strategies for Response Constructions

Questions demand answers or **responses** (*inf/cxn*), and there are strategies for response constructions as well as strategies for interrogative constructions.

There are a number of strategies found for answers to polarity questions. The answer to a polarity question is polar: positive or negative. The **polarity response** (*inf/cxn*) is straightforward for positive polarity questions as in (18) in section 12.3.1. In the answer to a positive polarity question *Do you have any money?*, *Yes (I do)* means both positive polarity and agreement with the polarity of the question, and *No (I don't)* means both negative polarity and disagreement with the polarity of the question. In other words, the answer matches both the polarity of the question and the polarity of the answer.

However, the polarity responses for negative polarity questions (or assertions requesting a response from the addressee) are not at all straightforward:

- (39) Q: Do you not have any money? / You don't have any money, right?
 A1: Yes (I do).
 A2: No (I don't).

In the answer to a negative polarity question such as (39), a positive polarity answer disagrees with the polarity of the question, and a negative polarity answer agrees with the polarity of the question. So the addressee of a negative polarity question can align the answer with the polarity of the answer or the polarity of the question, but not both at once. This leads to three common alignment strategies for polarity response constructions.

König and Siemund describe English as employing a **yes/no alignment strategy (str)** for the polarity response construction: the answer aligns the polarity of the answer, as in the answers to (39), not the polarity of the speaker's question. A yes/no strategy is potentially confusing when the question is negative in form and the answer is positive ("yes"), especially if no elaboration such as *I do* in A1 in (39) is included.

There is also an **agree/disagree alignment strategy (str)** in which the answer agrees/disagrees with the polarity of the question. The agree/disagree strategy in Gulf Arabic is illustrated in (40) (König and Kokutani 2006:321):

- (40) Q: maa ſindik fluus, muu chidhi
 NEG with.you money NEG like_that
 'You don't have any money, right?'
 A1: naſam
 'It is true that I have no money.' [i.e. I agree with the speaker]
 A2: bala
 'It is not true that I have no money.'
 [i.e. I disagree with the speaker – I do have money]

Another strategy is a variant of the yes/no strategy which includes a third response, basically a positive (disagreeing) response to a negative question. König and Siemund give examples of German *doch* (vs. *ja*), French *si* (vs. *oui*) and Tigrinya *?abba* (vs. *?awwa*; König and Siemund 2007:322) as instances of the disagreeing response to a negative question. We can call this a **yes/no/disagree alignment strategy (str)**.

These three polarity response alignment strategies are represented visually in Table 12.1.

Finally, there is what König and Siemund call an **echo strategy (str)** for polarity response constructions, in which part of the sentence is repeated in the answer, not unlike the English "tags" *I do* and *I don't* in the answers in (39).

Table 12.1 *Strategies for answers to polarity questions*

Yes/no strategy		
	I do have money.	I don't have money.
Do you have money?	<i>yes</i>	<i>no</i>
Do you not have money?	<i>yes</i>	<i>no</i>
Agree/disagree strategy		
	I do have money.	I don't have money.
Do you have money?	<i>agree</i>	<i>disagree</i>
Do you not have money?	<i>disagree</i>	<i>agree</i>
Yes/no/disagree strategy		
	I do have money.	I don't have money.
Do you have money?	<i>yes</i>	<i>no</i>
Do you not have money?	<i>disagree</i>	<i>no</i>

A language that uses the echo strategy in polarity response constructions is Welsh (König and Siemund 2007:321):

- (41) Q: A welwch chwi hwy?
 Q see you them
 'Do you see them?'
 A1: Gwelaf
 see
 'I see (them).'
 A2: Na welaf
 NEG see
 'I don't see (them).'

The echo answer strategy generally repeats the verb or part of the predication.

The construction for an **information (question) response (inf/cxn)** often uses the ellipsis strategy, as with other identificational constructions (see sections 11.4.2, 12.3.4); compare the possible English answers to (19), repeated as (42):

- (42) Q: Who is coming?
 A1: Sandra is coming.
 A2: Sandra is.
 A3: Sandra.

The focus – the new information added by the addressee – is always expressed, as in A3 in (42). For polarity questions, the focus is the truth value, or in the echo strategy, the predicate; polarity focus is associated with the predication (see section 11.4.1). Sometimes a “pro-verb” form is used, such as *do* in the English translation of A2 in (41), or *is* in A2 in (42).

12.3.4

Identificational Constructions, the Expression of (Un)Certainty, and Their Relation to Interrogative Constructions

In some verb-final languages in Eurasia, the interrogative pronoun is placed immediately preverbally, as in Basque (Saltarelli 1988:6; cf. Dryer 2005d:378):

- (43) aita-k Mikel no-la erama-n du etxer-a
 father-SG.ERG Mikel how carry-PFV 3ABS.3ERG.PRS house-SG.ALL
 'How has father carried Mikel home?'

The immediate preverbal position has frequently been identified as the focus position in verb-final languages (see section 11.4.2). However, Dryer observes that this position is rarely used for interrogative phrases in verb-final languages outside of Eurasia (Dryer 2005d:378).

Nevertheless, the interrogative construction is closely related to the identificational construction (section 11.4). The "missing" or unknown information is the focus, and the rest of the propositional content is presupposed – that is, it represents a presupposed open proposition (POP; see section 11.4.1). In section 11.4.2, it was noted that both an information question and its answer are considered to be typical contexts where distinct identificational constructions occur. Hence, it is not surprising that another strategy for interrogative constructions is the recruitment of an identificational construction.

In Makua, the identificational construction and information questions use the same construction: (Stucky 1979:363, 362, 364)

- (44) hiń-sepéte áhó-hán-á níváka
 Sepete SBJ.TNS-forge-ASP spear
 'Sepete forged a spear.'

- (45) hiń-sepéte aa-han-ílé nivaka
 Sepete SBJ.TNS-forge-PFV.FOC spear
 'It's a spear that Sepete forged.'

- (46) hiń-sepéte aa-han-ílé-ni
 Sepete SBJ.TNS-forge-PFV.FOC-what
 'What did Sepete forge?'

The declarative, topic-comment construction in (44) contrasts with the identificational construction and information question in (45) and (46), respectively. In the latter two examples, the focused/questioned phrase has low tone and the Perfective Focus suffix *-ílé* is used on the verb.

The identificational construction is also used for counterpresuppositional negation (i.e. a context where the speaker is saying that it was a spear, not a hoe that Sepete forged), another typical identificational context (Stucky 1979:363):

- (47) ...k^háá-han-ílé ihipa
 ...NEG.SBJ.TNS-forge-PFV.FOC hoe
 '...he didn't forge a HOE.'

Identificational constructions are also used for polarity questions. In modern spoken French, the cleft strategy for identificational sentences, as in (48), has been recruited for both information questions, as in (49), and polarity questions, as in (50) (Price 1971:138, 135; Barton and Sirich 1945:26):

- (48) C'est moi que je suis arrivé le premier
 it's 1SG REL 1SG.SBJ arrived the first
 'It is I who arrived first.'
- (49) Qu'est-ce qu'il dit?
 what'is-that REL'3SG.SBJ say
 'What is he saying?'
- (50) Est-ce que Joseph les lui a donnés?
 is-it REL Joseph 3PL.DO 3SG.IO have given?
 'Did Joseph give them to him?'

In section 12.3, it was said that a central part of the question function is that the speaker does not know, or is uncertain of, part of the propositional content of the utterance. The question function also possesses an interactional dimension: the addressee is requested to fill in the missing or uncertain information. We may then compare questions to expressions of uncertainty that do not explicitly ask the addressee to fill in the uncertain information (although they certainly invite the addressee to do so). Examples (51) and (52) do this for polarity questions and information questions, respectively:

- (51) a. Sandra might come.
 b. I wonder if Sandra is coming.
 c. Is Sandra coming?
- (52) a. Someone took the books.
 b. I wonder who took the books.
 c. Who took the books?

Example (51a) expresses epistemic modality – specifically, it expresses a neutral epistemic stance toward the propositional content ‘Sandra is coming’ (she might come, she might not come; see section 17.2.1 for discussion of epistemic stance). Example (51a) represents **subjective (sem)** epistemic modality, roughly in the Cognitive Grammar sense of ‘subjective’ (Langacker 1987:128–29; 2008:77): the judgment of uncertainty is grounded in the speech event, representing only the speaker’s judgment, and only that judgment at the time of the speech event. Epistemic modality is commonly expressed by a complex predicate construction, and modal constructions will be discussed in Chapter 13 on complex predicates (see section 13.3.2).

Example (51b) also expresses speaker uncertainty, because the subject referent of ‘wonder’ is the speaker. But the construction could also express the uncertainty of another person and another time. In *Sam wondered whether Sandra was coming*, the judgment is Sam’s, not the speaker’s, and it took

place prior to the speech event. This type of epistemic modality is **objective (sem)**, also roughly in the Cognitive Grammar sense (Langacker 1987:129–30; 2008:77): it is not grounded in the speaker and the speech event, and describes the epistemic judgment of anyone at any time. Example (51b) is made up of a predicate that takes the propositional content as a complement, and will be discussed in Chapter 17 on complement constructions (see section 17.3.1).

Example (52a) expresses the uncertainty or ignorance of the speaker via an indefinite pronoun for the “missing” part of the propositional content. Indefinite pronouns and their function have been described in section 3.5. Unlike the epistemic modal construction, the uncertainty is associated with a part of the proposition other than its polarity (its truth/falsity). Example (52b) is an instance of a propositional complement construction, not unlike example (51b).

In some languages, a ‘dubitative’ or ‘non-affirmative’ verbal inflection is used with interrogative constructions, as well as epistemic modal constructions and propositional complement constructions. Arapaho has a Non-Affirmative Order of person indexation (glossed NA in the following examples) that is used in all of these constructions, accompanied by other markers of uncertainty and interrogativity. Examples (53)–(56) illustrate the Non-Affirmative Order verbal forms for polarity question, information question, propositional complement of uncertainty, and epistemic modal constructions, respectively (Cowell with Moss 2008:82, 242, 254, 255; NA = Non-Affirmative, AI = Animate Intransitive, TA = TransitiveAnimate, TI = Transitive Inanimate):

- (53) koohenéetéih?
koo=e-neeteihi
Q=2SG.NA-tired(AI)
'Are you tired?'
- (54) heihtou'no'kóó?
e-ih-tou'u-no'ukooohu
2SG.NA-PST-when-arrive(AI)
'When did you arrive?'
- (55) 'oh né̄hoowóó'iinóóno'éítino'
'oh ne-ihoowu-e in wohoe'=inono'eiti-no' iiwoonhehe'
but 1SG.NA-NEG-know(TI) DUB=speak_Arapaho(AI)-3PL.NA now
'I don't know whether they still speak Arapaho today.'
- (56) hé'eito'oówuun.
e'=e-ito'oowuuni
DUB=2SG.NA-possess_house(AI)
'You probably have a house.'

The English indefinite pronoun construction in (52a) is different from the English interrogative pronoun construction in (52c). But, in many languages, the indefinite pronoun (usually the specific indefinite pronoun; see section 3.5) is identical to the interrogative pronoun, as in the Crow examples in (57)–(58),

apart from the determiner on the pronoun in the indefinite function (Graczyk 2007:422, 421; INACT = Inactive):

- (57) John iichiili-m ma-koo-sh sapée-lak ataalí-k
 John horse-DET 1.INACT-give-DET who-DET steal-DECL
 'Someone stole the horse John gave me.'
- (58) John iichiili-m ma-koo-sh sapéen ataalí-?
 John horse-DET 1.INACT-give-DET who steal-INT
 'Who stole the horse John gave me?'

Finally, in his typological survey of mood and modality, Palmer describes systems where a category of particles or inflections appears to combine epistemic modality, **evidentiality (sem)** (a related category which indicates the epistemic justification for believing a proposition), and interrogativity. For example, Ngiyambaa has a series of clitics that indicate degrees of (un)certainty (Hypothetical *-gila* in [59]), evidence for an assertion (Sensory Evidential *-gara* in [60]), and utterances that can be construed as a question (Ignorative *-ga:* in [61]; Palmer 2001:17, from Donaldson 1980:256, 275, 259–60; CARIT = Caritative, CM = Conjugation Marker, IGNOR = Ignorative):

- (59) gali:-njinda-gila njiyau balu-y-agá
 water-CARIT-HYPOTH we.PL.NOM die-CM-IRR
 'We'll probably die for lack of water.'
- (60) gabuga:-gara=lu ñamumiysi
 egg.ABS-SENS.EVID=3ERG lay.PST
 'It's laid an egg by the sound of it.'
- (61) guy-a-ga:=ndu dha-yi
 fish.ABS-IGNOR=2NOM eat-PST
 'Did you eat a fish?'/You ate a fish, I don't know.'

The fact that all these forms occur in the same morphosyntactic category in Ngiyambaa illustrates the close relationship between epistemic modal, evidential, and interrogative functions.

12.4 Imperative–Hortative Constructions

Imperatives are intended to cover 'all attempts [by the speaker] to get or advise the hearer to do something, i.e. speech acts such as orders, requests, suggestions, prescriptions, appeals, etc. ... invitations, the giving of advice, warnings, wishes, instructions, etc.' (König and Siemund 2007:277, 303). Languages may, of course, have multiple distinct constructions that perform these functions, such as admonitive (for warnings). Unfortunately, no typological generalizations have been identified for a conceptual space of different functional types of imperatives treated by König and Siemund.

König and Siemund's definition specifically refers to the addressee. However, van der Auwera, Dobrushina, and Goussov (2005a) argue that all of the sentences in (62) should be treated together (see section 12.4.1):

- (62) a. Sing!
 b. Let's sing!
 c. Let her sing!
 d. Let the party begin!

Example (62a) is universally described as an imperative: it is a direct appeal to the addressee for the addressee to do something. Examples (62b–d) differ from (62a) in that it is someone other than the addressee who is urged to do something, or at least some group including participants other than the addressee, as in the case of (62b). Nevertheless, all of (62b–d) involve appeals to the addressee to at least help get the event to take place (van der Auwera, Dobrushina and Goussov 2004:56). Some linguists use the term 'hortative' and/or 'jussive' for the first person and/or third person types (van der Auwera et al. 2004:49–52). Following van der Auwera et al. (2004), we will use the term **imperative–hortative (*inf/cxn*)** for the sum total of types in (62a–d) (see section 12.1).

The functional parameters that differentiate imperative constructions can best be understood by returning to the continuum of English constructions between declarative and imperative in (2), repeated here as (63):

- (63) a. The door needs to be closed.
 b. It would be nice to have the door closed.
 c. It would be nice if you closed the door.
 d. You could/may close the door.
 e. You should/must close the door.
 f. Close the door!

The declarative forms in (63b–c) are instances of what is called a *commentative predicate* taking a complement clause (Noonan 2007:116–18; see section 18.2.2). *Commentative predicates* express an evaluation of the event in the complement clause (in this case, closing the door). Expressing a positive evaluation of an event is at least suggestive that the hearer should bring the event about.

The declarative forms in (63a) and (63c–e) are instances of *deontic modality* (section 12.1). *Deontic modality* characterizes an event as something whose occurrence or non-occurrence the speaker has (or thinks s/he has) some influence over. We will take a broad view of deontic modality, ranging from expressions that indicate the exercise of the speaker's influence, such as instructions to the hearer in (63d–f), to neutral expressions of desire such as *I want you to close the door*. We also take a broad view of modality to include not only when the influencer is distinct from the agent of the action, as in *I want you to close the door* (sometimes called 'external'), but also when the influencer is also the agent, as in *I want to close the door* (sometimes called 'internal'). Finally, we further take a broad view of deontic modality as being either subjective, as in (63a) and

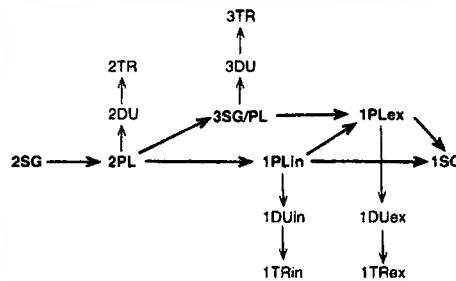


Figure 12.2 *Conceptual space for distinct imperative–hortative constructions based on person*

(63d–f) where it is the speaker’s expression of deontic modality at the time of the speech event, or objective, as in *Carol told him to close the door*, where it can be anyone’s expression of deontic modality at any time. The prototypical instance of deontic modality is the exercise of external influence subjectively construed, as in *You have to close the door*; but deontic modality may be just expression of desire, may be internal, and may be objective.

All deontics are **future-oriented (sem)** – that is, the event in question is a future event from the reference time of the deontic modal event. For subjective deontic modal constructions such as the English Auxiliaries *may* and *must*, the event is in the future from the speech act time (that is, simple future). For objective deontic modal constructions such as *Carol intended to close the door*, the event is in the future from the reported deontic modal event time. In this case, closing the door is projected to a future from the past event of Carol’s intention (also called a future-in-the-past).

In section 12.4.1, three topics that affect the strategies used for imperative–hortative constructions are discussed: expression of person as in example (62) above; the relationship to politeness; and the sometimes distinct strategies used for prohibitives (negative imperatives). In section 12.4.2, the relationship between deontic modality and imperative–hortative constructions is briefly expanded upon.

12.4.1 Person, Politeness, and Prohibitives

The imperative–hortative category involves the speaker exhorting any speech act participant – speaker, hearer, other, or a combination of these participants – to bring about (or prevent, in the case of prohibitives) the event expressed in the propositional content. Nevertheless, there is crosslinguistic variation as to whether there is a morphosyntactically distinct imperative–hortative construction for a particular category of person – that is, speech act participant.

Van der Auwera et al. (2004) propose a conceptual space for the existence of distinct imperative–hortative constructions for different person types. The full conceptual space is given in Figure 12.2 (van der Auwera et al. 2004:56).

The dual and trial types represented in the conceptual space are, of course, very rare, since the dual and trial categories are themselves rare.

The conceptual space represents two typological universals about imperative–hortative constructions. The first is represented by the arrows in the figure. The arrows represent a partial hierarchy of distinct imperative–hortative constructions: if there is any distinct imperative–hortative construction, it will be for second person singular, and so on following the arrows. The second universal is represented by the structure of the conceptual space itself. The actual network (graph) structure of the conceptual space constrains the range of imperative–hortative person types that can be expressed by a single construction. A single construction can only range over a connected set of person functions in the conceptual space.

In some languages, distinct constructions are used for different persons of the imperative–hortative – often very different constructions. For example, the English bare imperative construction (*Dance!*) is used only for second person singular and plural, which are linked in the conceptual space in Figure 12.2. A second English imperative–hortative construction, the *Let me/us/her/him/them...* construction, is used for first person and third person functions, which are also all connected together in the center and right of the conceptual space.

On the other extreme, K'ichee' has a full verbal paradigm, parallel to the present and past tense paradigms, for imperatives–hortatives. The K'ichee' imperative–hortative verbal paradigm uses the prefix č-/k-, which covers the entire conceptual space of person (Mondloch 1978:36; note that third person prefixes are used with the postposed polite second person imperative forms, and the *k-* prefix for the second person familiar forms is identical to the present declarative prefix):

(64)	ch-in-uxlan-ok IMP-1SG.ABS-rest-FNL 'Let me rest'	c-uj-üxlan-ok IMP-1PL.ABS-rest-FNL 'Let's rest'
	c-at-uxlan-ok IMP-2SG.ABS.FAM -rest-FNL 'Rest' [familiar]	qu-ix-üxlan-ok IMP-2PL.ABS-rest-FNL 'Rest' [familiar, plural]
	ch-Ø-uxlana la IMP-3SG.ABS-rest FRM.SG 'Rest' [formal]	ch-uxlan a'lak IMP-3PL.rest FRM.PL 'Rest' [formal, plural]
	ch-Ø-uxlan-ok IMP-3SG.ABS-rest-FNL 'Let him/her rest.'	ch-u'xlan-ok IMP-3PL.rest-FNL 'Let them rest.'

Van der Auwera et al. (2004) give a number of examples of sets of imperative–hortative constructions that are restricted in person, but whose range of person functions conforms to the structure of the conceptual space in Figure 12.2.

The structure of the conceptual space in Figure 12.2 is clearly motivated. In the case of second person forms, the addressee is both the one appealed to and

the one who can carry out the action. This is the sense in which second person is the most direct target of this speech act, and serves as the prototype for the imperative–hortative construction. In the first person and third person situations, the addressee has less control over the successful execution of the action, since s/he is not the agent of the action.

Most typological surveys of the imperative–hortative construction focus on the form of the second person variant, since it is the most likely to be distinct from an ordinary declarative construction. The most distinctive strategy used in imperative–hortative constructions, particularly the second person, is reduction in form. The most common reduction in form is the absence of a second person subject form, including the absence of second person indexation on the verb (Sadock and Zwicky 1985:173; König and Siemund 2007:304). One also finds the absence of other verbal inflections (König and Siemund 2007: 304), leading to the common use of just the **bare verb stem (str)** for imperatives, as in English *Dance!* (König and Siemund 2007:307).

On the other hand, there are also overt imperative–hortative morphemes, free forms, or verbal affixes, found in many languages. The strategies that imperative–hortatives employ are extremely varied, partly due to the fact that the different person types often have quite different constructions, as we noted above for English bare verb form vs. the *Let's ...* construction. Some imperative–hortative forms appear to be archaic (König and Kokutani 2006:311), particularly second person types (Aikhenvald 2010:362). Another reason for the variety of imperative–hortative strategies is the variety of sources from which they are recruited. Aikhenvald lists sources of imperative–hortative forms in volition and desire, futurity, ability, and supposition or suggestion (Aikhenvald 2010:363).

But perhaps the most likely reason for the diversity of imperative–hortative construction types is politeness. Asking or ordering the addressee to do something is a face-threatening act to the addressee (Brown and Levinson 1987). Speakers use a range of linguistic strategies to mitigate face-threatening acts. The choice of strategy is dependent on how threatening the face-threatening act is, and on the social relationship between the speaker and the addressee. Even declarative verbs and personal pronouns frequently distinguish second person forms by degree of politeness. The minimal distinction is usually called ‘familiar’ and ‘formal,’ as in the distinctions between *tu* and *vous* in French, *du* and *Sie* in German, and *ty* and *vy* in Russian; but other languages have a more elaborate system of forms of address, and even European languages employ titles and surnames vs. given names vs. nicknames to signal the social relationship between speaker and addressee.

In imperative–hortative constructions, again with second person forms in particular, more elaborate distinctions in politeness may be found, in comparison to declarative or interrogative constructions. For example, in Lakhota, normal commands are expressed by the sentence-final particles *yo/wo* (used by men) or *ye/we* (used by women); softened or familiar commands are expressed by *yethó* (men) and *nithó* (women), and entreaties are expressed by *ye* (both sexes; Rood and Taylor 1976:7–11, 7–13).

Speakers also are more likely to employ indirect expressions to mitigate imperatives; these are the so-called indirect speech acts such as the conventionalized *Can you pass the salt?* or *It would be nice if you opened the door for me*. Brown and Levinson (1987) describe the wide range of indirect strategies for making requests of an addressee to do something, and show that the same strategies are found in Tzotzil (a Mayan language of Guatemala) and Tamil (a Dravidian language of India), as well as English and other European languages.

For example, one strategy that is used in all three languages is called ‘pseudo-agreement’ by Brown and Levinson. Pseudo-agreement is an example of positive politeness – that is, acting in such a way as to maximize solidarity or agreement between speaker and addressee. In this case, one uses a form indicating a prior agreement, even when there hasn’t been one. For example, one use of the English discourse marker *then* is to indicate finalization of a prior agreement, as in *I'll meet you in front of the theatre just before 8, then* (Brown and Levinson 1987:115). But it is also used when there is no prior agreement in order to act as if there is agreement and, hence, the request should be carried out:

- (65) Take this radio off my hands for 5 quid **then**?

Example (65) was uttered when the speaker walked up to an acquaintance, and hence more strongly encouraged the addressee to agree to the request (Brown and Levinson 1987:115).

The Tzotzil particle *φ'in* has essentially the same function as English *then*, and can also be used when there is no prior agreement (Brown and Levinson 1987:115; no IMT provided):

- (66) mančuk hal φ'in hnae?
 ‘My house would be OK **then**?
 (a request to see that my house is OK while I leave for a few minutes)

Tamil *appuram* appears to be similar, and is used, for instance, in a conventional leave-taking expression. Initiating the end to a conversation is a face-threatening act, and it is softened by acting as if there were prior agreement for its end, as in the Tamil example in (67) and its English translation (Brown and Levinson 1987:115; no IMT provided):

- (67) appuram naam pooyTTu vaareenka.
 ‘I'll be seeing you **then**.’

Thus, between the extension of deontic modal constructions to imperative–hortative function, the use of bare forms and other reduced expressions, and the conventionalization of indirect speech acts, the crosslinguistic and also within-language range of imperative constructions is very wide.

Finally, negative imperatives are also frequently formed in a distinct way – distinct from positive imperatives and also distinct from negative declaratives (see section 12.2). This phenomenon is so widespread that the term **prohibitive** (*inf/cxn*) has come to be generally used for negative imperatives. Prohibitive strategies

include a distinct negative marker compared to the declarative negative; a distinct verb form, compared to the positive imperative; or both at once (van der Auwera and Lejeune 2005b; see also Sadock and Zwicky 1985:175; König and Siemund 2007:308–11; Aikhenvald 2010:ch. 5).

In Vietnamese, a special prohibitive negator is used, with an invariant verb form also used for negative and positive declaratives and positive imperatives (van der Auwera et al. 2005b:290; examples from Thompson 1965:211; cf. König and Siemund 2007:309):

- (68) tôi không hiểu
I NEG understand
'I don't understand.'

- (69) chớ uống rượu
NEG.IMP drink alcoholic
'Don't drink alcohol!'

In Spanish, the negative marker in prohibitive constructions is the same as the declarative negative morpheme; but the prohibitive verb form is Subjunctive, unlike the Indicative form in the positive imperative (van der Auwera et al. 2005b:290; see section 12.4.2):

- (70) Pedro no canta
Pedro NEG sing:IND.PRS.3SG
'Pedro does not sing.'

- (71) Canta!
sing:IMP.2SG
'Sing!'

- (72) No cantes!
NEG sing:2SG.SBJV
'Don't sing!'

Finally, in Zulu, the prohibitive in (73) uses a negative morpheme distinct from the declarative negative inflection in (74), and the Infinitive instead of the positive imperative form as in (75) (Poulos and Bosch 1997:21, 20; cf. van der Auwera et al. 2005b:290; SC = Subject Concord):

- (73) mus-aní uku-dl-a
NEG.IMP-IMP.PL INF-eat-INF
'Don't eat!'

- (74) USipho a-ka-fund-i
Sipho NEG.IND.PRS-SC-learn-NEG
'Sipho is not learning.'

- (75) dl-anini ukudla!
eat-IMP.PL food
'Eat the food!'

In sum, the variety of strategies used for imperative–hortative constructions across the world’s languages is primarily due to the different participants (in terms of person) who are asked to carry out the action; politeness, as determined by the degree to which the act of the request is face threatening, and the social relations between speaker and addressee; and whether the speaker is attempting to get an action performed or attempting to prevent an action from being performed.

12.4.2 The Relation of Deontic Modality and Predication to Imperative–Hortative Constructions

At the beginning of section 12.4, the semantic relationship between deontic modality and the imperative–hortative function was discussed. Both functions characterize the speaker’s attempt to bring about a future event relative to the time of the speech act (subjective deontic modality) or the reported deontic mental state (objective deontic modality). Indeed, the imperative–hortative speech act can be considered a special case of deontic modality, broadly construed. In this section, we describe strategies for the imperative–hortative construction that are recruited from deontic modal constructions and other related constructions.

The future orientation of deontic modality and imperatives–hortatives leads to simple recruitment of the future construction for imperative–hortative. In Modern Hebrew, the future form is an alternative construction for the imperative (second person), and the sole construction for the prohibitive, accompanied by a special negative imperative form *'al* (Sadock and Zwicky 1985:176–77; see also König and Siemund 2007:312; Bybee, Perkins, and Pagliuca 1994:273–74):

- (76) tešev
 sit.FUT.2SG.IND
 ‘Sit down!’ [lit. ‘You will sit down’]

- (77) 'al tešev
 NEG.IMP sit.FUT.2SG.IND
 ‘Do not sit down!’

There is little evidence that a form with a deontic modal verb is recruited directly to express the imperative–hortative function. Bybee et al. suggest that some such verbs grammaticalize into imperatives after having grammaticalized into future forms (Bybee et al. 1994:213). If so, this appears to be another case of future forms being recruited for imperatives–hortatives.

However, a very common phenomenon is the co-expression of the complement verb form of a deontic modal verb – the complement of a verb meaning ‘want,’ ‘intend,’ or ‘order’ – and the form of the verb in the imperative–hortative construction. The co-expression is clearest when the deontic complement verb and the imperative–hortative verb are different from the declarative verb form (otherwise there is no special co-expression relationship between the deontic complement verb and the imperative–hortative verb).

The complement verb form of a deontic modal verb is typically called the ‘subjunctive,’ in traditional Western grammar, or the ‘irrealis,’ in descriptions of languages from other parts of the world. These are somewhat problematic concepts as comparative concepts, and will be replaced by a new comparative concept of deranking (Stassen 1985), which will be briefly introduced here and again in section 14.2, and discussed in greater detail in Chapter 15 (see section 15.2.3).

Roughly, the ‘subjunctive’ or ‘irrealis’ is a strategy in which the verb form inflects for at least some of the categories of a declarative main clause verb, but with distinct forms for those inflectional categories compared to those of the declarative main clause verb. For example, Spanish verbs inflect for person, number, and tense in both the Indicative (declarative main clauses) and Subjunctive. Example (78) contrasts the person and number forms for the Spanish verb *hablar* ‘speak’ in the Present Indicative and Present Subjunctive (Butt and Benjamin 2004:199, presented in 1st/2nd/3rd singular, then 1st/2nd/3rd plural):

- (78) *Indicative*: *habl-o*, *habl-as*, *habl-a*, *habl-amos*, *habl-áis*, *habl-an*
Subjunctive: *habl-e*, *habl-es*, *habl-e*, *habl-emos*, *habl-éis*, *habl-en*

Since the ‘subjunctive’ inflects for categories more or less like the declarative main clause verb, in traditional grammar these two have been grouped together as ‘finite’ verb forms. ‘Finite’ verb forms contrast with ‘nonfinite’ verb forms, which do not inflect for declarative main clause verb categories and also may have an overt morpheme. Examples of Spanish ‘nonfinite’ verb forms include the Infinitive *habl-ar*, the Gerund *habl-ando*, and the Past Participle *habl-adó* (Butt and Benjamin 2004:196).

In a broader crosslinguistic perspective – including imperatives–hortatives and deontic modality – the more important distinction is not between ‘finite’ and ‘nonfinite’ verb forms, but between the form of the declarative main clause verb and any verb form that differs from that. This latter distinction groups together the ‘finite’ ‘subjunctive’/‘irrealis’ forms with the ‘nonfinite’ forms. The term coined by Stassen for the latter set of forms is **deranked (str)**, while the declarative main clause form is called **balanced (str)**. The balanced–deranked distinction is discussed in detail in section 15.2.3 (see also section 14.2).

We may now generalize the above remark about ‘subjunctive’ and ‘irrealis.’ Bybee et al. observe that many languages in their sample have ‘subjunctive’ forms for complements of deontic verbs covering the meanings of order, command, wish, and desire; but many other languages in the sample also used ‘non-finite’ forms for the complement verbs (Bybee et al. 1994:219). In other words, a deranked verb strategy is often used for the complement verbs of deontic modal verbs.

Moreover, these same deranked verb forms are also recruited for the imperative–hortative construction. It is likely that this usage originates with the dropping of a main clause expressive objective deontic modality such as ‘I ask that you ...’ or ‘I order that you ...’. Palmer observes that languages described as having a ‘subjunctive’ or an ‘irrealis’ verb form may recruit the form for the

imperative–hortative construction (see Palmer 2001:136–42, 179–83 for numerous examples in many languages). In Hungarian, the suffix *-j* is used for both the imperative–hortative in (79) and as a deranked form in the deontic modal construction in (80) (Kenesei, Vago, and Fenyvesi 1998:20, 32; cf. König and Siemund 2007:312–13):

- (79) Másol-j egy kulcs-ot
copy-IMP a key-ACC
'Copy a key!'

- (80) Nem szükséges, hogy Péter meg-tanul-j-a
NEG necessary that Peter CMPL-learn-SBJV-3SG.DEF
a vers-et
the poem-ACC
'It isn't necessary for Peter to learn the poem.'

Spanish presents an interesting example of the recruitment of deranked forms from deontic modal constructions to imperative–hortative constructions. The Formal (more polite) Imperative forms, associated with the Formal Pronouns *Usted* and plural *Ustedes*, are identical to the Third Person Subjunctive forms: singular *habl-e*, plural *habl-en* (Butt and Benjamin 2004:198). Subjunctive forms are also used for negative second person imperative–hortatives, as in (73) above; first person plural imperative–hortatives as in (82), and third-person imperatives accompanied by the subordinator *que* as in (83) (Butt and Benjamin 2004:291, 292):

- (81) Empec-emos
start-1PL.SBJV
'Let's start.'

- (82) Que nos cuent-e qué política económica querría
that us tell-3SG.SUBJ what policy economic like-3SG.COND
que hicíeramos
that make-1PL.IMPF.SUBJ
'Let him tell us what economic policy he'd like us to follow.' [El País
newspaper]

The Familiar Plural Imperative form in Peninsular Spanish, associated with the pronoun *vosotros* is a special form, as in *dad* 'give [familiar plural]', but in the spoken language the Infinitive, here *d-ar*, may be used (Butt and Benjamin 2004:175). More generally, the Spanish Infinitive is used for imperatives in public notices and instructions: *Empujar* 'Push' (notice on doors) (Butt and Benjamin 2004:293).

Other constructional forms that are recruited by imperative–hortative constructions appear to be more indirectly related semantically to the imperative–hortative function. Expressions of possibility, usually analyzed as a type of modality distinct from both epistemic and deontic modality, may come to be used for admonitives (warnings). The Slave particle *sáná~sóné* is used for both possibility (83) and admonitive (84) functions (Rice 1989:412; cf. Bybee et al. 1994:211–12):

- (83) wqt'ée sána
2SG.OPT:burn PROH
'You might get burned.'
- (84) goqts'i sóné
2SG.OPT:lie PROH
'Don't ever lie.'

Rice glosses the particle as 'prohibitive,' but Bybee et al. argue that the possibility meaning is the source meaning. Also, the possibility example suggests a deleterious outcome, but Bybee et al. note that, in Slave and Chepang in their typological sample of languages, the possibility meaning is not necessarily deleterious, though in other languages in their sample the possibility meaning is deleterious (Bybee et al. 1994:211–12).

Aspectual forms may also be recruited for imperative–hortative constructions. Bybee et al. (1994:212) note that either perfective (telic) or imperfective (atelic; see section 6.2.1) forms may be recruited. The meanings of both forms can be plausibly explained in terms of indirectness of the request.

For example, Rapanui uses a declarative form in the present tense (hence imperfective) combined with a temporal adverb meaning 'now' or 'just' to express an imperative–hortative of any person (Du Feu 1996:37; cf. König and Siemund 2007:312):

- (85) ka amo te 'arija
now clean.PRS the face
'Wipe your face!'

To state a present event that is not yet realized, like the future describing an event that will be realized according to the speaker, implies that the speaker wants or requests that the event come about.

In contrast, German uses the Perfect Participle for a 'rather impolite' command (König and Siemund 2007:312):

- (86) Jetzt aber aufgestanden!
now but get_up.PRF.PTCP
'Get up!'

To state that an action that is not yet realized is in fact completed at least as strongly implies that the speaker wants or requests that the action come about.

Finally, we can return to the question of the relationship, if any, between the imperative–hortative speech act and clausal information packaging. It seems plausible to link the imperative–hortative speech act with the topic–comment clausal information packaging function. The person requested to carry out the action is the topic referent. The prototypical person is the second person, and, as noted above, a common strategy is to drop expression of the second person, and express the imperative with a bare verb form. In this respect, a common strategy for the prototypical imperative–hortative resembles a common strategy for

the prototypical topic–comment function with a prototypical highly accessible topic: zero expression of the topic argument, and just a predicate form. It is also a prototypical predication in that the predicate must denote an agentive action – that is, an action under the agent's control.

12.5 Exclamative Constructions

12.5.1 Function and Strategies for the Exclamative Construction

Both Sadock and Zwicky (1985:162) and König and Siemund (2007:316) consider the exclamative to be a ‘minor sentence type.’ This evaluation reflects aspects of both the form and the function of exclamative constructions. In terms of form, it appears that it is less common to find a morphosyntactically distinct exclamative construction than it is to find morphosyntactically distinct interrogative or imperative–hortative constructions. Also, the function of the exclamative construction is relatively narrow in what it conveys, in contrast to the wider range of propositional content conveyed by interrogative and imperative–hortative constructions.

Michaelis (2001) provides both a precise definition of the exclamative function and a survey of different strategies used for the exclamative construction within and across languages. Her definition will be illustrated with the English construction in (87) (Michaelis and Lambrecht 1996:380):

- (87) It's amazing how fast the WEATHER can change.

Example (87) contains a presupposed open proposition (POP; see section 11.4.1), in this case ‘the weather can change at X rate,’ where X is the open or “missing” part of the propositional content. The open part of the POP expresses a scalar degree – in this case, the rate at which the weather changes. The scalar degree has an affective force, specifically surprise, defined by Michaelis as ‘a judgement by the speaker that a given situation is noncanonical’ (Michaelis 2001:1039) – that is, not predicted or expected (see section 12.5.2). That affective force is subjective as defined in section 12.3.4 above – that is, it is grounded in the speaker's perspective and the speech act time. Finally, in addition to the fact that the proposition apart from the scalar degree is presupposed, the referent in the POP that the scalar degree applies to (in this case, the weather) must be identifiable (see sections 3.2, 3.4).

In the English construction in (87), one of several English exclamative constructions, most of the functional features of the exclamative are overtly expressed. The POP is expressed as a type of subordinate clause (*how fast the weather can change*). The scalar degree is expressed by the interrogative phrase *how fast*. The affective force is manifested both in the overt phrase (*It's*) *amazing* and the prosody, with the accent on *weather* (represented in [87] by small caps). The subjectivity is normally implicit, but it can be made explicit as well: *I'm amazed how fast the WEATHER can change*.

However, many of these elements may be expressed differently, or absent entirely. In the Malay example in (88), and its English translation, there are several differences compared to (87) (Michaelis 2001:1045):

- (88) Saya tidak percaya banyak sangat duit dia dah guna
 I NEG believe much so money s/he PST use
 'I can't believe she spent so much.'

Instead of a directly affective expression like *It's amazing*, an expression of incredulity (*tidak percaya* 'can't believe') is used. Instead of an interrogative expression of degree like *how fast*, an anaphoric degree expression *sangat* 'so' is used to express the surprising degree. Michaelis argues that use of an anaphoric degree expression is appropriate because it refers back to the presupposed open proposition (Michaelis 2001:1045). There is also overt reference to the speaker in (88) with *Saya* 'I' instead of an implicit expression of subjectivity.

In the German example (90), and its English translation, the affective meaning is expressed by an interjection (*Mein Gott*); the POP is expressed as a main clause, and the affective meaning and surprising degree is implicitly expressed through the change in word order (copula *ist* and subject *es* are reversed from the typical declarative order) as well as prosody (Michaelis 2001:1042):

- (89) Mein Gott, ist es heiss!
 my god, is it hot
 'My God, is it hot!'

In the Turkish example (90) and its translation, the affect is expressed by an interjection, the POP is expressed in a main clause, and degree is expressed by an anaphoric degree word (Michaelis 2001:1045):

- (90) Öyle zenga ki!
 so rich.3SG.PRS EXCL
 'He is so rich!'

In (91)–(93) and their English translations, there is no clausal construction, only a referring phrase. In the Setswana example in (91), a modifying (relative) clause conveys much of the propositional content, and in the Korean example in (92), the affective meaning is also conveyed by an interjection; the French example in (93) consists of only a simple referring phrase (Michaelis 2001:1048; INTERJ = interjection; OM = Object Marker [?]):

- (91) mo-dumo o ba o dirang!
 CLF-noise REL they OM make.PROG
 'The noise they are making!'

- (92) ah, cheo sori!
 INTERJ the sound
 'The noise!'

- (93) [child looking at a man's large stomach]
Le bide!... Le gros bide comme ça!... Le plus gros bide de l'année.
The stomach!... A stomach like *this* [gestures]!... The biggest stomach of the year!
 (Reiser, *Les oreilles rouges*)

In sum, there are different strategies for expressing each of the different parts of the exclamative function in the exclamative constructions illustrated in (87)–(93). The POP may be expressed as a subordinate clause, a main clause, or only as the referring phrase to which the scalar degree applies. The affective meaning may be expressed by an affective predicate, a clause expressing incredulity, or an interjection; or only implicitly, via a distinct prosody and, possibly, word order. The scalar degree may be expressed by an interrogative form, an anaphoric degree form, or only implicitly, via the referring phrase to which the scalar degree applies. Most of these strategies may combine with each other, although the referring phrase strategy is associated with nonexpression of degree, and the subordinate clause strategy usually combines with a main clause expression of affect. These different combinations may be found in a variety of languages.

12.5.2 The Relation of Mirativity and Thetic Constructions to Exclamative Constructions

The exclamative construction can be considered “minor” in two respects. The variety of strategies illustrated above, all of which are clearly motivated by the exclamative function, indicates that the exclamative construction is typically not very grammaticalized, and so may not always be morphosyntactically distinct from the declarative construction. And the function itself, with its restriction to the affective expression of surprise at an unexpected scalar degree associated with presupposed propositional content, means that it is perhaps not frequent enough to develop a distinct morphosyntactic construction in contrast to the declarative in very many languages.

However, the exclamative construction is not the only construction in which surprise contributes to the meaning. DeLancey (1997) proposes that some languages have a distinct grammatical construction that expresses the mirative function. DeLancey defines the mirative as a function which conveys a proposition ‘which is new to the speaker, not yet integrated into his overall picture of the world’ (DeLancey 1997:36). An example of a mirative construction from Lhasa Tibetan is given in (94) (DeLancey 1997:44; MIR = mirative [here and in subsequent examples]):

- (94) nga-r dngul tog=tsam 'dug
 1SG-LOC money some exist.MIR
 ‘I have some money!’ (e.g. I just found some in my pocket)

There are two major differences in function between the mirative and the exclamative. The mirative asserts the entire proposition, whereas the exclamative proposition is presupposed except for the degree. The mirative also expresses surprise at the whole proposition; it is not restricted to surprise at a degree associated with the proposition.

A significant number of languages have distinct mirative constructions, though fewer than have distinct exclamative constructions, as far as can be inferred from grammatical descriptions. A small number of languages have more than one mirative construction, usually two distinct mirative morphemes. García Macías (2016) compares the semantic contrast in languages with multiple mirative constructions from his 101-language sample, and additional languages with multiple mirative constructions cited in Aikhévald (2012). García Macías argues that the semantic distinction between the mirative constructions in these languages is similar: one form indicates general surprise at an ‘out of the blue’ new event, while the other indicates that the new event is contrary to a specific previous expectation (García Macías 2016:184–98).

For example, Balti has two mirative particles, *le* and *suk* (Bashir 2010:17–19, discussed in García Macías 2016:189). The first particle, *le*, expresses surprise at a newly perceived event (Bashir 2010:18):

- (95) gilít bazaar iŋ.nu xlan̩.pho.čho čik yod le
 Gilgit bazaar inside elephant INDF is MIR
 ‘There is an elephant in Gilgit bazaar!’ [surprise at seeing such a sight]

The second particle, *suk*, expresses ‘deferred realization, by which the speaker expresses that her previous assumptions about the situation were incorrect’ (Bashir 2010:18; cf. García Macías 2016:189; Bashir suggests that the first clause has the mirative meaning even without the second clause that makes the mirative meaning explicit):

- (96) ahmad matpa yot-suk, ɻa-la ma tshor
 Ahmad ill be-MIR me-to NEG aware
 ‘Ahmad was ill, but I was not aware of it.’

García Macías argues that the general surprise subtype of the mirative function represents surprise contrary to general background knowledge, whereas the counterexpectational mirative subtype represents a surprise response to a more specific expectation in the context (García Macías 2016:199).

García Macías further compares the mirative construction to the thetic construction described in section 11.3. Thetic constructions are similar to mirative constructions in that they present events as all new. To some extent, the thetic function may express a surprising new event, particularly the presentative and annuntiative functions. However, the all-new character, including possibly surprise, in thetic constructions belongs to the addressee – or, more precisely, the speaker presents the information in the thetic construction as all new and possibly surprising to the addressee. García Macías further links the general surprise

mirative to the existential thetic function, and the counterexpectational mirative to the presentational thetic function (García Macías 2016:198–99).

These similarities in function between exclamative, mirative, and thetic constructions are reflected in similar strategies among the three construction types, including recruitment of one construction for one or both of the other functions.

In section 11.3.2, we argued that the strategies for the thetic construction have in common making the ‘subject’ look less like the subject in the topic–comment construction, the ‘predicate’ look less like a predicate, or both. One strategy was the use of just a referring expression with the predicate expressed in a modifying (relative) clause, as in examples (50)–(51) in section 11.3.2. This strategy is also used for exclamative constructions; compare examples (91)–(93) in section 12.5.1.

García Macías describes other strategies that are similar in both constructions. A common thetic strategy is the use of an existential form to introduce the ‘subject’; see examples (47)–(49) and (52a–b) in section 11.3.2. A related strategy for thetics is nominalization of the predicate, accompanied in some cases by an existential form. The Hausa exclamative example in (97) uses a current existential form (García Macías 2016:209, from Newman 2000:179):

- (97) àkwai tà dà ban mämäkñ
 EXST her with real amazement
 'She is really amazing.'

The Tagalog exclamative example in (98) uses an etymological existential form found across Austronesian languages (García Macías 2016, from Kaufman 2011:723):

- (98) kay ganda ni Maria!
 EXCL beauty GEN Maria
 'How beautiful Maria is!' [lit. 'Her beauty!']

Another common thetic strategy is word order change, particularly use of VS order instead of SV order; see examples (37)–(38) in section 11.3.2. In Arvanitika, VS order is used for both the annuntiative thetic function in (99) and exclamative function in (100) (García Macías 2016:214, from Sasse 1991:423, 372; capitalization indicates accent):

- (99) u-prif mehajía
 broke machine
 'The maCHIne broke.'
- (100) fúmø e-máðe fþepíá
 very_much big house
 'What a big house!'

The relationship between exclamatives and miratives is more complicated but also more interesting. García Macías notes that, in some languages, the same morpheme encodes both mirative and exclamative – for example Cavineña =*taa* (García Macías 2016:216–17, from Guillaume 2008:651).

More interestingly, miratives as well as exclamatives use interrogative forms. In particular, miratives share their form with an 'echo question' – that is, a question used in response to an assertion, for clarification of part of the assertion (*Ira is going to dance – Who is going to dance?*). An echo question is used because the speaker of the echo question needs confirmation. For example, the Sochiapan Chinantec morpheme *má?*^L is used for an echo question, as in (101), where the speaker is using the question to express surprise that the addressee was able to speak Spanish (Foris 2000:373, cited in García Macías 2016:221; STI = State Transitive Inanimate):

- (101) ?í^H má^M tí^M má?^L nú^M hú^Hmij?^{MH}
 Q PRF be_able.STI.2 EXCL 2SG Spanish
 'Are you REALLY able to speak Spanish?'

In a declarative construction, the use of *má?*^L produces a more typical mirative (Foris 2000:372; IA = Intransitive Animate):

- (102) hău^L rē?^M nú^M la^L tí^L mi?^M kău^M má?^L
 return_home.IA.3SG.FUT relative.2 2SG even at year next EXCL
 'Not until next year will your brother/sister return.'

García Macías suggests that the close relationship between miratives and echo questions is because echo questions are often used when the speaker of the question is sufficiently surprised to question the situation (García Macías 2016:219).

The same morpheme in Sochiapan Chinantec is also used for exclamatives (Foris 2000:373; EXCM = exclamation, II = Intransitive Inanimate):

- (103) ?e^L ma^L ka^L-sō^M ?ma?^{MH} ká^Mfe^{MH}
 EXCM EXCL PST-lower.II value.3 coffee
 'Wow, the value of coffee has (sure) fallen!'

Finally, the same morpheme is also used for negative polarity focus (Foris 2000:372):

- (104) tiá^M hí^{BL} má?^L cō^{LM} cū^M né^{LM}
 NEG be_possible.II.FUT EXCL go_nonhome.IA.3SG.FUT 3 today
 'It is not possible that s/he go today!'

Examples (102)–(104) illustrate a relationship between exclamatives, miratives, and polarity focus that is found in other languages as well (García Macías 2016:224–38). García Macías argues that polarity focus is used to assert that an entity is (or is not) in a category, often contrary to expectation and hence surprising. He notes that forms used to identify an entity as belonging to a category often develop into intensifiers, as English *really* and *truly* have become; and the intensifiers may develop into exclamatives, which express surprise at a scalar degree. For example, Khwe *tcé̄m(xa)* 'real' is used to assert category membership but also as an exclamative, not unlike English *real(l)y*. Example (105) asserts category membership, while example (106) is an exclamative (Kilian-Hatz 2008:214; cf. García Macías 2016:230–31):

- (105) tcá tcéñ(-xa) khwé rè?
2SG.M **real**(-GER) Khwe Q
'Are you really a Khwe [lit. a real Khwe]?'

- (106) tcéñ ngú à.
real house COP
'That's a real [i.e. well-built] house.'

García Macías concludes, 'in some languages polarity focus markers can also establish category membership, which in turn can also express exclamativity' (García Macías 2016:231).

García Macías uses the psychological theory of surprise to analyze the relationship between thetic, mirative, and exclamative functions (García Macías 2016:240–53). The psychological theory of surprise represents the process of surprise as a series of phases: starting with awareness of the surprising situation, proceeding to detection of schema discrepancy (that is, recognizing that the surprising situation does not fit with schemas of normal expectations), and concluding with an evaluation of the surprising situation. Thetic, mirative, and exclamative constructions encode the three phases of awareness of a new situation, schema discrepancy, and evaluation, respectively.

Terms Defined in this Chapter

12.1 Introduction: Speech Act Constructions and Their Relation to Modality, Polarity, and Information Packaging

speech act (*inf/cxn*), declarative (*inf/cxn*), interrogative (a.k.a. question) (*inf/cxn*), imperative–hortative (*inf/cxn*), exclamative (*inf/cxn*), modality (*sem*), deontic modality (*sem*), epistemic modality (*sem*), mirative (*sem*), polarity (*sem*), positive (*sem*), negative (*sem*)

12.2 Polarity: Negation of Declaratives

negation construction (*cxn*), declarative negation construction (*cxn*), double negation strategy (*str*), existential negation construction (*cxn*)

12.3 Interrogative Constructions

12.3.1 Functional Types of Questions

polarity question (a.k.a. yes/no question, Y/N question) (*inf/cxn*), information questions (a.k.a. content question, WH question) (*inf*), alternative question (*inf/cxn*)

12.3.2 Strategies for Interrogative Constructions

tag (*str*), A-not-A (*str*)

12.3.3 Strategies for Response Constructions

response (*inf/cxn*), polarity response (*inf/cxn*), yes/no alignment strategy (*str*), agree/disagree alignment strategy (*str*), yes/no/disagree alignment strategy (*str*), echo strategy (*str*), information (question) response (*inf/cxn*)

12.3.4 Identificational Constructions, the Expression of (Un)Certainty, and Their Relation to Interrogative Constructions
subjective (sem), objective (sem), evidentiality (sem)

12.4 Imperative–Hortative Constructions
imperative–hortative (inf/cxn), future-oriented (sem)

12.4.1 Person, Politeness, and Prohibitives
bare verb stem (str), prohibitive (inf/cxn)

12.4.2 The Relation of Deontic Modality and Predication to Imperative–Hortative Constructions
deranked (str), balanced (str) .

12.5 Exclamative Constructions

12.5.1 Function and Strategies for the Exclamative Construction

12.5.2 The Relation of Mirativity and Thetic Constructions to Exclamative Constructions

13.1

Introduction

13.1.1

Complex Predicates and Information Packaging

A **complex predicate** (*cpx*) is a construction in which two concepts combine to constitute a single predication. Complex predicates contrast with simple predicates, the expression of a predicate by a single element in the clause. In Chapters 6–9, where we introduced predicates and focused on the argument phrases that combine with predicates, we generally assumed that predicates were expressed as simple forms, although some examples of complex predicates were introduced in section 7.4 regarding the expression of experiential events.

In this book, complex predicate constructions are defined very broadly, and hence cover a wide range of morphosyntactic structures and semantic categories. Complex predicates are not recognized as a grammatical type in traditional grammar, and have only been broadly discussed in linguistics in the past twenty years or so. This is in part because many of the elements that make up complex predicates do not look like verbs in many languages, including Western European languages. In fact, complex predicates subsume a quite diverse set of morphosyntactic strategies. The different strategies are given different names, some from traditional grammar, some more recent. A few examples are given in (1), where the elements of the complex predicate are given in boldface and common grammatical names for the element are given in brackets (cf. Hopper 1991, an early article on the topic that calls them ‘dispersed verbal predicates’):

- (1)
 - a. They **had a drink**. [light verb, support verb]
 - b. You **paid attention** to me at last! [light verb, support verb]
 - c. They **are dancing**. [auxiliary, auxiliary verb]
 - d. He **will sing**. [modal, auxiliary, auxiliary verb]
 - e. She **is a professor**. [predicate nominal, copula, copula verb]
 - f. She **is smart**. [predicate adjective, copula, copula verb]

- | | |
|--|--|
| g. He popped his clogs. | [verb-object idiom (Northern British for 'die')] |
| h. John left the room angry . | [secondary predicate] |
| i. John left the room angrily . | [manner adverb] |
| j. We looked up . | [directional, particle, adverb] |
| k. The bus broke down . | [particle, adverb] |
| l. She cut it up . | [particle, adverb] |

A second problem in defining the complex predicate construction is that complex predicates are an intermediate type in a path of grammatical change. Many types of complex predicates originate in complex sentences. It is not always easy to identify a single predication, even in conceptual terms. And complex predicates may end as simple predicates – that is, the elements that form a complex predicate may ultimately fuse into a single word. This last stage of the process may be an instance of grammaticalization or of lexicalization (see section 13.1.2). It is not always clear when two separate clauses collapse into one, or when a syntactic unit loses its independent status. Finally, some typologists include single words as complex predicates, if they can be analyzed as the compounding or incorporation of two morphemes. Thus, the entire process can only arbitrarily be divided into distinct stages:

complex sentence > complex predicate > compound/incorporated predicate > simple predicate

A third problem in defining complex predicates is that they often do not form a syntactic unit, even if they form a conceptual unit. For example, in (1h,i,l) the two elements are interrupted by an argument phrase. The elements in examples (1c–f) are contiguous, but they do not have to be in certain other constructions, as can be seen in (2):

- (2) a. Are they **dancing**?
 b. Will he **sing**?
 c. Is she a **professor**?
 d. Isn't she **smart!**

In contrast, argument phrase heads and their modifiers do generally form syntactic as well as conceptual units. In those cases where argument phrases appear to be syntactically discontinuous, a good case can be made that in fact they are distinct referring phrases with different discourse functions that happen to refer to the same referent (see section 5.4). For this reason, it is reasonable to talk about argument phrases (a syntactic unit) because they cohere syntactically, but one cannot talk about "predicate phrases" because they do not cohere syntactically. The term 'complex predicate' allows us to talk about a complex syntactic structure (i.e., consisting of multiple elements) that is not necessarily a syntactic unit (i.e., the elements need not be contiguous).

A possible explanation for this difference between a complex referring phrase and a complex predicate may lie in the nature of the verbalization

process – that is, how speakers take an experience and verbalize it into a linguistic utterance (see section 4.1). Chafe (1977) proposes a model in which verbalization involves several distinct processes. A speaker focuses her/his consciousness on a subchunk of the experience – roughly, something that will be verbalized as a single clause. The speaker identifies entities in that subchunk that are persistent and will recur across subchunks. These are the referents (arguments). The remainder of the experience to be verbalized in the subchunk is what is predicated. That remainder may not be conceptually as cohesive as the referents, and so it may be verbalized as a discontinuous complex predicate rather than a simple one.

13.1.2 Semantics and Evolution of Complex Predicates

In section 13.1.1, we described the complex predicate strategy in terms of information packaging – predication – and morphosyntactic form – complex. We now turn to the semantics of complex predicates – that is, the types of meanings that are expressed in the components that are expressed by the syntactic elements of the complex predicate.

Complex predicates almost always have one component that denotes an action – that is, a process in which change occurs. The primary division of types of complex predicates is based on the semantics of the other component of the complex predicate, or at least the semantics before the construction undergoes grammaticalization (see section 2.3) and lexicalization (see below). This division is also motivated by the range of strategies found in the two types of complex predicate constructions. We will call these two types eventive complex predicates and stative complex predicates.

Eventive complex predicates (cxn) are those in which both elements of the complex predicate denote processes. Eventive complex predicates, and constructions that have mostly evolved from eventive complex predicates, are the primary topic of this chapter. In an eventive complex predicate, the elements of the predicate denote subevents of a single event (see section 13.2.1).

Eventive complex predicates may evolve into a number of different constructions, which are not always considered to be complex predicates. This happens when there is a change in meaning in one of the elements of the complex predicate, either by grammaticalization or by lexicalization.

In one common grammaticalization process, one component changes meaning to express an oblique argument or a nonbasic voice. These constructions have been discussed in Chapters 6–9. The grammaticalization process from eventive complex predicate to argument structure and voice constructions is briefly discussed in section 13.3.1.

Perhaps the most common grammaticalization process involving eventive complex predicates is when one of the elements of the complex predicate comes to express tense, aspect, modality, or polarity. This set of meanings is

abbreviated as **TAMP** (*sem*). These constructions are generally called auxiliary constructions and we will use that term here. Auxiliary constructions are described in section 13.3.2. It will be seen there that auxiliary constructions use the same range of strategies as basic eventive constructions. Auxiliary constructions are likely to have originated in complement constructions (see Chapter 18).

Eventive complex predicates may also **lexicalize** – that is, the two (or more) semantic components combined in a complex predicate may develop an idiosyncratic meaning. This process will eventually lead to an unanalyzable meaning, and ultimately to a simple predicate. But, before that happens, there is usually a stage where the elements of the complex predicate have an identifiable meaning, even if the meaning of the whole is idiosyncratic. The lexicalization of eventive complex predicates is described in section 13.4.

Two other constructions are related to eventive complex predicates. The first, support verb constructions, consist of two elements, both of which are verbal in origin. However, one of them, the support verb, no longer denotes an event. The support verb construction is partly productive, like the TAMP categories resulting from grammaticalization, but partly idiosyncratic, resembling lexicalization. Support verb constructions are described in section 13.5.

The second related construction is the result of lexicalization of a predicate and its argument, typically the P argument of the predicate, as in *pull strings* (meaning ‘exercise influence,’ for instance to help someone to get a job). In this case, one of the elements of a complex predicate historically denoted an object (a participant), not an event. But the participant has lost its independent semantic status and serves to characterize an event, in combination with the other, eventive element of the complex predicate. These will be called argument complex predicate constructions, and are described in section 13.6.

Stative complex predicates (*cxn*) are those in which the other component of the complex predicate denotes a state. Stative complex predicates are the primary topic of Chapter 14. Stative complex predicates are often divided into ‘secondary predicates,’ in which the stative predicate expresses a state of one of the participants in the event as in example (1h), and ‘manner adverbs,’ in which the stative predicate expresses a property of the event itself as in example (1i). However, ‘secondary predicates’ and ‘manner adverbs’ share the same strategies, and hence there is justification to group them all together as stative complex predicates. These are discussed in section 14.2. The strategies found for stative complex predicates suggest that they originate in coordinate or possibly adverbial subordinate complex sentence constructions (see Chapter 15).

The concept of ‘manner’ in events is rather more complicated. Manner is not always conceptualized as a ‘property’ of events. For example, in section 7.3.2, predicated events were divided into ‘manner’ and ‘result’ predicates. Another linguistic phenomenon associated with ‘manner’ is ideophones. Ideophones and the analysis of ‘manner’ are discussed in section 14.3. Finally, we return to ‘manner’ as a component of motion events, and revisit the Talmy typology of motion events (see section 7.3.1) in section 14.4.

13.2**Eventive Complex Predicate Constructions****13.2.1****Semantics of Eventive Complex Predicates:
One Event or Two?**

Eventive complex predicates conceptualize the semantic combination of elements as a single event: otherwise the construction would be analyzed as two separate clauses forming a complex sentence. In practice, however, what is conceptualized as a single event is sensitive to semantic context, discourse context, and cultural context.

What counts as a ‘single’ event? Several criteria have been proposed in the literature. These criteria all describe necessary, not sufficient, conditions for construing a combination as a single event. That is, a combination of events may satisfy the conditions and yet not be construed as a single event.

The first criterion is that the combination of events share the same tense, aspect, and modality values. In a study of what counts as a single motion event, Bohnemeyer et al. (2007) use the occurrence of temporal location expressions (their ‘time-positional adverbial’) as a criterion for event segmentation. Interpreted semantically, this means subevents construed as occurring together (simultaneously or in tight temporal sequence) at a single temporal location can be conceptualized as a single event.

For example, the sitting and sewing events in the English construction in (3a) share the same temporal location, but the events in (3b) do not have to share the same temporal location, and do not in that example:

- (3) a. She sat sewing in the living room.
 b. She sewed the patch on this morning, and now is sitting in the living room.

A combination of events construed as a single event also have the same aspect and modality values (Durie 1997:291).

Another criterion is that a single event has a single argument structure – that is, a single configuration of interacting participants, each with their own semantic role in the event (Durie 1997). Durie writes that ‘this seems to be a universal requirement that applies in the most diverse range of serial verb languages’ (Durie 1997:341; the serial verb strategy is a very common strategy for eventive complex predicates; see section 13.2.2).

For example, in the Paameese sentence in (4), there is a single event with two participants, the agent and the patient, expressed in a transitive construction (Crowley 2002:55):

- (4) inau nuas vuas he:mat.
 inau ni-uasi vuasi hee-mate
 1SG 1SG:DIST.FUT-hit pig 3SG:DIST.FUT-die
 ‘I will hit the pig to death’ (i.e. ‘I will kill the pig’)

In the Paamese sentence in (5), however, the situation is conceptualized as two events in sequence; and there are two distinct argument structure constructions, a transitive construction with *uasi* 'hit' and an intransitive construction using a subject pronoun *kaie* with *mate* 'die' (Crowley 2002:56):

- (5) inau nuas vuas kai he:mat.
 inau ni-uasi vuas kaie hee-mate
 1SG 1SG:REMFUT-hit pig 3SG 3SG:REMFUT-die
 'I will hit the pig and it will die.'

— Yet another criterion is that a single predication is a single assertion – i.e. it is a unitary predication in information packaging terms. Evidence that a construction constitutes a single event (and hence is an eventive complex predicate) is that one cannot negate one event expressed in a complex predicate without also negating the other (on negation as a criterion for a single assertion, see Cristofaro 2003:32; Bohnemeyer et al. 2007:501; Haspelmath 2016:299). For instance, examples (6) and (7) from Paamese illustrate the contrast between assertion as a single event and assertions of two separate events (Durie 1997:293, from Crowley 1987:45, 47):

- (6) kail aromuastei vuas vomat.
 kaile a-ro-muasi-tei vuasi voo-mate
 3PL 3PL.RL-NEG-hit-NEG pig 3SG:IMMFUT-die
 'They didn't kill the pig by hitting it.' [complex predicate]
- (7) kail amuas vuas ro:mattei.
 kaile a-muasi vuasi Ø-roo-mate-tei
 3PL 3PL.RL-hit pig 3SG:RL-NEG-die-NEG
 'They hit the pig but it didn't die.' [sequence of two clauses]

Example (6) is a complex predicate, in which negation negates the entire complex predicate ('hit' + 'die'): neither the hitting nor the dying happened. Example (7) is a sequence of two clauses, each of which is asserted separately and therefore can be negated separately – in (7), the hitting happened but the dying didn't.

If unity of negation is definitional of a single assertion, which is a reasonable conclusion (see section 12.2), then unity of negation is an indicator of a single clause since we have defined 'clause' as a way of packaging information in terms of a single predication. In this view, unity of negation is an indicator that the construction in question is a predicate made up of a single complex event.

The assertion/negation criterion also excludes adverbial subordinate clause constructions (see section 15.3.1). In adverbial clause constructions, one event is asserted and one is not asserted. In the English adverbial subordinate clause construction in (8a–b), negating the main clause ('the pig died') does not entail that the event in the adverbial clause didn't happen either:

- (8) a. The pig died **after/because** they hit it.
 b. It is not the case that the pig died **after/because** they hit it.
 [i.e. they hit the pig but it didn't die]

Hence, most scholars do not consider adverbial subordinate clause constructions to constitute complex predicates.

Likewise, the semantic criteria (single tense/aspect/modality, single set of participants) and the information packaging criterion (single assertion, hence single negation) indicate that complement subordinate clause constructions (see section 17.2.1) do not represent a construal as a single event. Using the temporal unity criterion, the two events in (9a–d) do not constitute a single event because they are not temporally unified (Noonan 2007; Cristofaro 2003):

- (9)
 - a. I know [that he graduated in 1974].
 - b. I believe [that the economy will collapse after the next presidential election].
 - c. I am glad [that you came last night].
 - d. I want [to go to France next summer].
 - e. I talked her into [going to Bulgaria next year].

Examples (9a–d) are examples of knowledge, belief, commentative (evaluative), and desiderative predicates, respectively, in the main clause. But in all of (9a–d), the knowledge, etc., events in the main clause are in the present, while the events in the complement clause in brackets may have any time reference. Example (9e) is an example of a manipulative predicate in the main clause. But the event in the main clause is in the past, and the event in the complement clause is in the future.

The single argument structure criterion means that most scholars do not consider perception verbs with their complements to be complex predicates either, even though they satisfy the temporal unity criterion:

- (10) I saw the alligator [snap the paddle].

In (10), the seeing and the snapping happened at the same time, but the perceiver is not a participant in the event perceived.

Although unity of temporal location and shared participants are necessary conditions for construal as a single event, they are not sufficient conditions. Not all of the event combinations that are temporally unified and share participants may be conceptualized as a single event. For example, some actions are not likely to be combinable as single events for cultural reasons, as in the Yorùbá examples below (Bamgbosé 1974:28; cf. Durie 1997:327):

- (11) ó ra/*ta isú wá
3SG buy/sell yam come
'She bought/*sold the yams and came.'

Durie argues that in societies with local markets, one buys something and returns home with it; but when the seller sells something, that is the end of the event as far as the seller is concerned. Hence the former combination is conceptualized as a single event in Yorùbá while the latter is not.

In other cases, cultural conceptualization of events interacts with context, as in the examples in (12)–(14) from Alamblak (Bruce 1988:29–30; cf. Durie 1997:329):

- (12) miyt ritm muh-hambray-an-m
tree insects climb-search_for-1SG-3PL
'I climbed the tree looking for insects.'
- (13) *miyt guñm muh-hëti-an-m
tree stars climb-see-1SG-3PL
'I climbed the tree to see the stars.'
- (14) miyt guñm muh-hiti-marña-an-m
tree stars climb-see-well-1SG-3PL
'I climbed the tree (and) saw the stars clearly.'

Example (12) represents a typical sequence of actions for Alamblaks, and so is expressible in a complex predicate construction. Example (13) is not, and so is unacceptable in that construction. However, if the context is changed so that climbing the tree is more relevant to observing the stars, the complex predicate construction, as in (14), is now acceptable.

Another phenomenon that is relevant to the conceptualization of a combination of events as a single event actually represents a more general pattern of crosscultural variation in the verbalization of events. In Kalam, certain types of events are conventionally verbalized by a complex predicate representing the sequence of subevents that make up the single event, typically including motion to the scene of the action, manipulation of an object in the action, and motion away from the scene (Pawley 1993:111):

- (15) (A sees B return home after an absence of an hour or so, and asks, 'What have you been doing?')
am wog-day okok kpł g-ab-yn o-p-yn
go garden here_and_there weeding do-REC PST-1SG come-PFV-1SG
'I've been weeding in the garden.' [lit. 'I went to the garden, weeded here and there, and came back']

Cultural conventions about verbalizing events are also relevant for the expression of events as simple predicates (Croft 2001:239–40). That is, there is also crosscultural variation regarding which single subevent is typically verbalized to describe an entire event. For example, in Ojibwa, only the first subevent of a traveling event is typically verbalized, whereas in English one normally describes the means of transport (Rhodes 1977:508):

- (16) A: a:ni:-š ga:-ži-bi-dgašn-an ma:npis?
how-then PST-like-come-arrive-2 here
'How did you get here?'

B: n-gi:-bi-bo:z
1-PST-come-embark
'I set out.' [vs. English *I got a ride.*]

In sum, the phenomenon illustrated in example (15) from Kalam and (16) from Ojibwa has to do with which subevents are expressed in verbalizing a single event. This is certainly an important aspect of the grammar of predication, but one that cuts across the simple predicate – complex predicate contrast.

Although many event sequences are not expressed as eventive complex predicates, certain event sequences are commonly expressed in that way, and can be said to lend themselves to conceptualization as a ‘single event.’ Durie observes that motion + action, as in (12) above, is the first event combination to be expressed in a complex predicate construction. Even English has a more tightly integrated motion + action construction which is a type of complex predicate construction: *Run go get me a newspaper* (Payne 1997:307; for me, *Go run get me a newspaper* is more acceptable). Another common combination is cause + result, as in (5), ‘hit’ + ‘die.’ The periphrastic causative strategy described in section 9.2 is an example of a cause + result complex predicate strategy (see section 13.3.1). Commonly, the result in a cause + result event combination is a stative expression, as in ‘hit’ + ‘dead’; these will be discussed in sections 14.2–14.3 (they are described there as resultative secondary predicates).

In motion + action and cause + result, not all participants are shared: the yam in (11) is a participant only in the buying event, and the agents in (4) are participants only in the hitting event. But in motion + action events, if the agent (actor) is shared, that seems to be sufficient to allow construal as a single event even if a prop such as the insects in (12) is not a shared participant. Finally, the tight causal connection in cause + result events appears to be sufficient to allow construal as a single event in some cases.

13.2.2 Strategies for Eventive Complex Predicates: Serial Verbs and Related Strategies

Eventive complex predicates are often equated with the most common strategy for expressing them, namely the **serial verb strategy (str)** (for a recent survey of serial verbs, see Aikhenvald 2018). In this section, the serial verb strategy – actually a family of strategies – is described, along with other strategies for eventive complex predicates.

Haspelmath offers five criteria for defining the serial verb strategy (Haspelmath 2016:296):

- (17)
 - a. “constructions”
 - b. monoclausal
 - c. made up of independent verbs
 - d. no linking element
 - e. no predicate–argument relation between the verbs

Some of Haspelmath’s criteria describe the function of eventive complex predicate constructions, particularly (b) and (e). Only (d) describes a feature of the morphosyntactic strategy that distinguishes the serial verb strategy from other strategies.

Criterion (a) is that serial verb constructions are “constructions,” by which Haspelmath means productive patterns (Haspelmath 2016:296). This criterion excludes the lexicalized eventive complex predicates. However, Haspelmath’s use of “construction” as applying only to productive patterns is different from the term used in construction grammar and followed in this textbook, where constructions are any pairing of form and meaning. Hence, we will not use criterion (a); see section 13.3.2 for discussion of lexicalized eventive complex predicates.

Criterion (b), being made up of a single clause, was discussed in section 13.2.1. This is, of course, what makes a complex predicate a single predication. Haspelmath treats unitary negation as the primary criterion for determining a single clause across languages, since all languages have a means to negate clauses. This is, of course, one of the criteria given in section 13.2.1 for construal as a single event, so criterion (b) essentially fits our definition of eventive complex predicates.

Criterion (c) is that serial verb constructions are made up of multiple independent verbs. Haspelmath defines verbs as denoting processes, so his definition excludes stative complex predicates (see Chapter 14). Eventive complex predicates are defined as consisting of two (or more) elements that denote processes, so criterion (c) fits our definition of eventive complex predicates. Criterion (c) also excludes eventive complex predicate constructions that have grammaticalized to express argument structure constructions, voice, and tense–aspect–modality–polarity (TAMP) (see section 13.3).

Criterion (e) excludes complements – that is, constructions in which the event denoted by one verb in the eventive complex predicate is an argument of the event denoted by another verb in the complex predicate. Complements are also excluded by the temporal unity and unity of argument structure criteria described in section 13.2.1.

Thus, Haspelmath’s criteria (a), (b), (c), and (e) essentially define eventive complex predicates. There remains criterion (d), the absence of a “linking element.” This criterion restricts the strategies for eventive complex predicates to zero coding.

In this section, we will first survey the serial verb strategy – or, more precisely, the family of strategies making up the zero-coded serial verb strategy. Then we will turn to constructions that use an overt coding strategy, and whether they are also instances of the eventive complex predicate construction.

The serial verb strategy actually consists of a set of strategies for expressing eventive complex predicates without a linking element (Durie 1997). Durie’s classification of these strategies is summarized in Table 13.1.

All possible combinations of contiguous/noncontiguous and incorporating/non-incorporating strategies are attested. Example (18) from Jeh illustrates the prototypical serial verb strategy, in which the serial verbs are contiguous and separate words (Gardin 1976:53; cf. Durie 1997:303):

Table 13.1 *The family of serial verb strategies*

Contiguity	<i>contiguous</i>
Incorporation (morphological boundness)	<i>not contiguous, separated by an argument phrase</i>
Locus of predicate inflection	<i>form a single word</i> <i>separate words</i> <i>inflection on first verb</i> <i>inflection on last verb</i> <i>same inflection on all verbs</i> <i>split inflection</i> <i>separate inflection</i>

- (18) ěn loh chièu reng rǔp bùh cha chǒl 'wan
 3SG exit go search catch roast eat pig they
 'He went out and got somebody's pig and roasted and ate it.'

Example (19), from Sranan, illustrates a common strategy typically found when the first verb is transitive and the P participant is also the S participant of the second verb (Sebba 1987:92; cf. Durie 1997:302). The two verbs are not contiguous, being separated by the argument phrase.

- (19) kofi naki amba kiri
 Kofi hit Amba kill
 'Kofi hit Amba dead.' [= Kofi killed Amba]

Durie considers verbs that are morphologically bound to be instances of the serial verb strategy. Again, they are more commonly contiguous, as in example (20) from Alamblik (Bruce 1988:26; cf. Durie 1997:303; ELEV = Elevational):

- (20) yěnt mi-ak-tita-r-t
 girl ELEV-get-carry_on_shoulders-3SGM-3SGF
 'He carried the girl down there on his shoulders.'

Example (21) from Sakao illustrates a morphologically bound serial verb combination separated by an incorporated argument ('coconut'; Durie 1997:303, from Guy 1974):

- (21) ya-βœt-nœð-p-ri-lam l-aðay
 3PL-pluck-coconut-PFV-DIR-come to-baskets
 'They plucked coconuts hither into the baskets.'

There are several different strategies attested for the locus of verbal inflection, since there is more than one verb in the eventive complex predicate (serial or not). Durie groups the attested possibilities into five strategies. The inflection may occur only on the first verb, as in example (22) from Paameese (Crowley 2002:89; cf. Durie 1997:299):

- (22) samsen muŋal va:s vela:sen laian
 semsene Ø-mugalil vaasi velaase-ne laiane
 Samson 3SG:RL:rip_open split jaw:CONST lion
 'Samson ripped apart the lion's jaw.'

The inflection may occur on the last verb as in example (23) from Kalam (Pawley 1993:95; cf. Durie 1997:290):

- (23) b ak am mon p-wk d ap ay-a-k
 man that go wood hit-break get come put-3SG-PST
 'The man fetched firewood.'

The same inflection may occur on all verbs, as in example (24) from Òbòlò (Durie 1997:299, from Uche Aaron, pers. comm.):

- (24) é-gwén èmì é-nû
 PL-call 1SG PL-come
 'Let them call me to come.'

The plural index on 'come' matches the index on 'call' even though the person coming is singular, which demonstrates that there really is doubling of the same inflection, not independent inflections that happen to be the same. This double inflection is possible in Òbòlò for imperative–hortative inflection (Faraclas 1984:108).

There may also be split inflection, such as a prefix on first verb and a suffix on last verb, as in example (25) from Yimas (Foley 1986:114; cf. Durie 1997:300):

- (25) panmal uraŋk ki-n-ŋa-yara-ŋa-t
 man:CLI coconut:CLV.SG CLV.SG-CLI.SG.A-1SG.U-get-give-PFV
 'The man gave me a coconut.'

In (25), the argument indexes are prefixed to *yara* 'get,' but the aspect marker is suffixed to *ŋa* 'give.'

There may be separate inflection pertaining to each verb, where the inflections may semantically differ, as in example (26) from Paameese (Crowley 2002:58; cf. Durie 1997:300):

- (26) inau namuas vuas emat.
 inau na-muasi vuasi Ø-emate
 1SG 1SG.RL-hit pig 3SG.RL-die
 'I hit the pig to death'/I killed the pig by hitting it.'

In (26), the mood matches, as it must in an eventive complex predicate; but indexation does not, because the one who dies (the pig) is different from the one who does the hitting.

A similar example with different argument indexation on each verb is example (27) from Mískitu (Hale 1991:10; cf. Durie 1997:301):

- (27) yang truk kum atk-ri wa-n
 I car a sell-DS.1 go-3PST
 'I sold a car off.' (I sell car; it went.)

The first verb has a nonfinal different-subject inflection (see section 15.2.3) that indexes the speaker, and the second verb has a final person–tense inflection that indexes the car, since it is the car that is going.

Thus, the serial verb (zero-coded) strategy for basic eventive complex predicates allows for variation in the position of the serial verbs with respect to each other and to their argument phrases, in whether the serial verbs are incorporated or not, and in how the serial verbs are inflected for typical verbal categories such as person indexation, tense, and modality.

We now turn to constructions that have an overt linking element and appear to be eventive complex predicates according to the semantic and information packaging criteria discussed in section 13.1. Many linguists exclude an overt linking element in defining serial verb “constructions.” The primary reason for doing so is to exclude clauses with subordinating conjunctions such as example (8a) in section 13.2.1 (*The pig died after they hit it*), and clauses with coordinating conjunctions such as the English translation of (7) in section 13.2.1 (*They hit the pig but it didn't die*). These examples are also excluded by the single clause criterion: there is a single assertion, which implies that there can only be a single negation of the entire assertion. However, Schiller analyzes the Mooré construction in (28) as a “serial verb” (in our terms, an eventive complex predicate) construction although it optionally takes a conjunction (Schiller 1990:38):

- (28) a iku s̥ugā (n) wāg nemdā
 he took knife (CNJ) cut meat
 'He cut the meat with a knife.'

The semantic relation between the events in (28) is a typical example of a manipulate + action combination which is usually construed as a single event. In fact, *iku* ‘take’ is likely to have grammaticalized further to an oblique flag, encoding ‘knife’ as an instrument, as indicated by the English translation (see section 13.3.1). Diachronically, Mooré probably represents a transition from a coordination construction to an eventive complex predicate construction (see section 13.1.1), since the conjunction is optional. This is one of the few examples of direct evidence of the evolution of coordination constructions into eventive complex predicates.

Another possible type of overt coding of eventive complex predicates is when the overt morpheme is not an independent conjunction but an affix on one or more of the verbs. This type of construction goes under a number of names; the forms that we will describe here usually go under the name of ‘converb’ (see section 15.3.2). These constructions are usually considered to be biclausal constructions, and so will be discussed in detail in Part IV of this textbook, although they will also make an appearance in Chapter 14 on stative complex predicates.

For now, we will simply focus on the fact that there is overt coding of the relation between the two subevents expressed by the two verbs.

Although converb constructions are usually used to express semantic relations between events that are agreed to be biclausal, Bisang (1995) shows that they are also used for the types of events that are considered to be ‘single events,’ as in example (29) from Tamil (Steever 1987:16; cf. Bisang 1995:158):

- (29) pāpu avalai orumurai nimir-ntu pār-tt-ān
 Babu she:ACC strangely lift-CVB look-PST-3SG.M
 ‘Babu looked up at [lit. ‘lifting (up), looked’] her strangely.’

Bisang also gives examples of the converb used for more grammaticalized eventive complex predicates where one of the verbs is used as a flag (see section 13.3.1). In example (30) from Khalkha Mongolian, the verb ‘give’ is used for the R role of the communication (mental transfer) event (Street 1963:151; cf. Bisang 1995:170):

- (30) tūunijg duuda-ž ög-öörej
 him phone-CVB give-IMP
 ‘Please call him [to the phone] for [me].’

Bisang also gives examples of the converb construction used for more lexicalized eventive complex predicates, where the two verbs combine to produce an idiomatic meaning (see section 13.4). In example (31) from Khalkha Mongolian (Street 1963:144; glossed in Bisang 1995:168) and example (32) from Tamil (Steever 1987:45; glossed in Bisang 1995:158), two different verb combinations are found that have come to mean ‘understand’:

- | | | | |
|------|-------------------|------|----------------------|
| (31) | sonso-ž med-ex | (32) | teri-ntu kolla |
| | hear-CVB know | | know-CVB hold-INF |
| | ‘to understand’ | | ‘to understand’ |

These more grammaticalized and lexicalized instances of eventive complex predicates suggest that the less grammaticalized or lexicalized example in (29) is an example of an overtly coded eventive complex predicate. Haspelmath acknowledges this possibility, and writes, ‘It may well be that it would be useful to have a new comparative concept ... that comprises constructions fulfilling criteria ([17]a–c) and ([17]e)’ (Haspelmath 2016:305). This is the conclusion we have drawn: this comparative concept is the basic eventive complex predicate.

The analytical problem here is that both the zero-coded strategy and the overtly coded strategy for linking verbs are used not only for eventive complex predicates (and stative complex predicates as well, for that matter), but also for constructions that are generally agreed to be biclausal and hence not instances of complex predicates. Bisang cites the following Vietnamese example (Thompson 1965:231; cf. Bisang 1995:139):

- (33) muốn biết được thua phải đi hỏi
 want know win lose must go ask
 '[If you] want to know [whether you] won [or] lost, [you] have to go ask.'

Example (33) is a series of verbs without any linking element – that is, it uses a zero-coded “serial” strategy. But some of the relations between verbs are verb–complement relations ('want [to know]', 'know whether [you won or lost]', 'have [to go ask]'); another relation is coordination ('won or lost'); and yet another relation is adverbial subordination (the conditional: [if you want to know whether you won or lost], [you have to go ask]). The only relation between verbs that is likely to be an eventive complex predicate is 'go ask.' One could construct a similar example with a set of verbs in converb constructions.

In other words, simply observing the morphosyntactic strategy, zero coded or overtly coded, will not indicate whether the function of the construction using that strategy is a complex predicate in a single clause, or multiple predicates in a multiclausal (complex sentence) construction. This is due to the fact that the complex sentence constructions may evolve into complex predicate constructions (see section 13.1.1), without changing their morphosyntactic form. We conclude that it is likely that there are overtly coded eventive complex predicates, although one would have to demonstrate unity of predication (via unitary negation) in order to confirm this in particular cases.

Finally, there is the order (sequence) of serial verbs, discussed here since word order represents another type of morphosyntactic strategy for a construction. The order of serial verbs in the serial verb strategy is fixed. The order of serial verbs is determined by causal ordering of the subevents (Durie 1997:330). Since cause temporally precedes effect, the causal ordering also implies a temporal ordering of the subevents. The temporal order of the serial verbs reflects the causal and temporal order of the subevents they express.

In this respect, the zero-coded serial verb strategy is more rigid than at least some examples of the overtly coded converb strategy. For example, in Tamil, the order of the two verbs in the converb construction in example (29) above may be reversed without change in meaning (Steever 1987:16):

- (34) papu avalai orumurai păr-tt-ān nimir-ntu
 Babu she:ACC strangely look-PST-3SG.M lift-CVB
 'Babu looked up at her strangely.'

Hence there are some significant typological differences between the zero-coded serial verb strategy and at least some examples of the overtly coded eventive complex predicate strategy. The difference described here suggests a greater integration of the subevents in the serial verb strategy than in the overtly coded strategy. It also suggests that some sources of eventive complex predicates may be adverbial subordination constructions, since adverbial subordination constructions may reverse the temporal and causal order of the events they express, while coordination constructions do not (see Chapter 15).

13.3 Grammaticalization and Lexicalization of Eventive Complex Predicates

13.3.1 Grammaticalization into Argument Structure Constructions and Voice

Another category of commonly cited eventive complex predicates are action + effect on a beneficiary/maleficiary, usually in the form of [action] + ‘give’; and manipulation of instrument + action carried out using that instrument, usually in the form of ‘take’ + [action]. In these cases, the relationship between the action and the role of the participant introduced with ‘give’ or ‘take’ is so tight that these forms are interpreted as expressing a peripheral participant role in a single event: beneficiary/maleficiary in the case of action + effect, and instrument in case of manipulate + action.

This construal leads to grammaticalization of the ‘give,’ ‘take,’ etc. verb as an oblique flag, as is happening in Mandarin (Li and Thompson 1981:358, 356, 358):

- (35) māma gěi wǒ zuò jiaǒzi
mother **for** 1SG make dumpling
'Mother made dumplings for me.' (beneficiary, from 'give')
- (36) wǒ yào gēn tā shuō-huà
1SG want **with** 3SG talk-speech
'I want to talk with him/her.' (comitative, from 'follow')
- (37) tā bǎ shū fàng-xia
3SG **OBJ** book put-descend
'S/He put the books down.' (object marker, from 'take, hold'
[etymologically])
- (38) wǒ bì tā zhuī-le sān tiān
1SG **by** 3SG chase-PFV three day
'I was chased by him/her for three days.' (oblique agent of passive, from
'receive')

In the case of Mandarin, this has led to grammatical category debates as to whether the elements in (35)–(38) are “verbs” or “prepositions.” In our constructional approach, rather than the word-class-based approach, the issue is formulated differently. The issue is whether the verb that grammaticalizes into expressing a peripheral participant role should be analyzed as combining with the main verb to form a complex predicate, or analyzed as combining with the argument phrase as a flag. This issue arises because of the gradualness of grammaticalization and the semantic shift it involves.

The best analysis is that the semantic component of a situation that encodes the relationship between a participant and an event may be expressed either as part of the argument phrase or as part of the predication. We will see this phenomenon again with motion events in section 14.5.

This phenomenon was already observed in section 9.3, on applicative constructions. Applicative constructions represent a different endpoint of this grammaticalization process, where the semantic component in question becomes affixed to the predicate. We introduced the periphrastic applicative strategy in section 9.3 – namely, complex predicates used to encode peripheral participants. The Mandarin examples in (35)–(38) are instances of the periphrastic applicative strategy. Another example of a complex predicate applicative, the Yorùbà example (27) from section 9.3, is repeated below as (39):

- (39) ó ra iṣu fún mi
he buy yam give me
'He bought yams for me.'

More generally, the expression of the semantic relationship between a participant and an event may be grammatically associated with either the argument phrase referring to the participant or the predicate – or expressed on both.

In addition to the periphrastic applicative, we also described the periphrastic causative in section 9.2; the French example (6) from section 9.2 is repeated below as (40):

- (40) J'ai fait manger le pain au/par le chat
I have made eat the bread to/by the cat
'I made the cat eat the bread.'

Finally, in section 8.3, passive-inverse voice constructions with a second verb were introduced; the Vietnamese example (26) from section 8.3 is repeated below as (41):

- (41) Nam bị Nga đánh
Nam suffer Nga beat
'Nam was beaten by Nga.' [negative effect on Nam]

In all of these cases, an eventive complex predicate comes to be used to express a nonbasic voice: more salient P for the passive-inverse voice, or more salient peripheral participants for causative and applicative constructions.

It is plausible that the argument structure constructions grammaticalizing from eventive complex predicates originated in coordinate complex sentences – that is, a structure like [she take knife cut meat] for 'she cut the meat with the knife' originated in something like *She took a knife and cut the meat*, and a structure like [he bake cake give mother] for 'he baked a cake for his mother' originated in something like *He baked a cake and gave it to his mother*.

13.3.2 Lexicalization of Eventive Complex Predicates

Another common process affecting eventive complex predicates is the development of semantic idiosyncrasy so that the combination of verbs that originally denoted two clearly distinct subevents making up the whole event instead

denotes the whole event in an unanalyzable way. This is an example of lexicalization (see section 13.1.2), a process by which a productive syntactic construction spawns specific combinations that develop a unitary, unanalyzable lexical meaning. We have already observed the lexicalization process in the modification–reference continuum in section 5.2, where typifying (non-anchoring) object and property modifiers, combined with the nouns they modify, came to denote simple object categories with, at best, an etymological and figurative connection to the original meanings of the modifier and the head noun. We also have given examples of lexicalization of eventive complex predicates with the overtly coded converb strategy, in examples (31) and (32) in section 13.2 ('hear' + 'know' = 'understand' in Khalkha Mongolian, and 'know' + 'hold' = 'understand' in Tamil).

The phenomenon of lexicalization of eventive complex predicates using the serial verb strategy is frequently reported in language descriptions (Durie 1997:322). Durie gives a number of examples including those in (42)–(44) from Yorùbà (Sebba 1987:199), Alamblak (Bruce 1988:33) and Vanimo (Ross 1980:92), respectively:

- (42) rí gbà
see take
'receive'
- (43) tu-fènah
throw-arrive
'spear (v.)'
- (44) hé húj ha
he 3sg.M:drink 3sg.M:go
'he laughs'

Lexicalized eventive complex predicates are intermediate between true eventive complex predicates and simple predicates. Semantically, they express a simple event that is not made up of the events denoted by the individual verbs. But, morphosyntactically, they remain two verbs, often used individually with their original meanings, and containing multiple inflections even in their idiosyncratic meanings, as in (44) from Vanimo.

Section 13.5 and section 13.6 describe two other constructions which are complex predicates in that they are made up of two elements, at least one of which etymologically expressed an event – but the meanings have lexicalized to some degree.

13.4 Grammaticalization of TAMP: Auxiliary Constructions

Perhaps even more common than the grammaticalization of an eventive complex predicate to express argument structure and/or voice, one of the verbs in an eventive complex predicate may grammaticalize to the point that it expresses tense, aspect, modality/evidentiality, or polarity (TAMP).

For example, in Lahu, certain eventive complex predicate combinations are ambiguous between a less grammaticalized meaning (a) and a more grammaticalized aspectual or modal meaning (b) of the first element (Matisoff 1969:104; cf. Croft 1990a:186; Payne 1997:310):

- (45) l̥s ch̄e
 be_there beg
 a. 'beg to be there'
 b. 'is begging'

- (46) ḡa k̄i
 get be_busy
 a. 'be busy getting'
 b. 'must be busy'

Examples (45b) and (46b) are instances of **auxiliary constructions (cxn)**. The form expressing TAMP meaning is generally called an 'auxiliary verb,' or simply **auxiliary (cxn)**; we will use the latter term since it is nothing like the category 'verb' as defined in section 2.2.3. Historically, auxiliaries are overwhelmingly likely to be derived from verbs (Bybee et al. 1994).

The (b) translations in (45)–(46) indicate that what was originally a complex predicate with two events, albeit tightly semantically integrated, has also been grammaticalized to a construction where one of the predicate elements now denotes an aspectual category (45) or a modal category (46). The less grammaticalized meanings in (45a) and (46a) do not correspond to the meanings of eventive complex predicates, however.

Most semanticists would analyze (45a) and (46a) as cases in which one event is an argument of the other event. This would make the constructions more like complement constructions, a complex sentence construction (see Chapter 17), than an eventive complex predicate construction. Indeed, TAMP + event constructions are often categorized as complement constructions. Complement constructions are a common origin for complex predicates expressing TAMP (see Bybee et al. 1994). Why, then, do we introduce auxiliary constructions here, rather than in Chapter 18?

Complement constructions represent two separate events: one event functions as an argument of the other event (section 18.1). The two events have different argument structures and may differ in their TAMP values (see sections 13.2.2, 18.2.2). Auxiliary constructions, like eventive complex predicates, represent a single event. There is only a single TAMP value in an auxiliary construction, because the auxiliary expresses that TAMP value. Finally, typologically, auxiliary constructions exhibit the same strategies that are found with the basic eventive complex predicates described in section 13.2.2, even though eventive complex predicates and auxiliary constructions are not diachronically related. Auxiliary constructions do use complement clause construction strategies (see Chapter 18), because historically they often originate in complement clause constructions with two events in a predicate–argument

relation. Semantic change leads to their standing for a single event with its TAMP value, and grammatical change leads to their expression like an eventive complex predicate.

The strategies for auxiliary constructions (Anderson 2006, 2011a) are defined along essentially the same parameters as the strategies for basic eventive complex predicates: contiguity, boundedness (incorporation), and location of verb-like inflection. The attested strategies are very similar to those found for basic eventive complex predicates; compare Table 13.2 to Table 13.1.

With respect to contiguity, the strategies include contiguous (preceding or following the event verb) or noncontiguous. Example (47) illustrates a contiguous preceding auxiliary in English, and example (48) a contiguous following auxiliary in Huallaga Quechua (Weber 1989:18; cf. Anderson 2006:25):

- (47) She **might** win the lottery.

- (48) Pillku-man aywa-sha ka-shaq
Pillku-GOAL go-PTCP AUX-1FUT
'I will have gone to Pillku.'

The auxiliary may be noncontiguous, as in example (49) from Kisi (Childs 1995:250):

- (49) falà có léléñndó yikpàá
Fala AUX machete **sharpen**
'Fala is sharpening the machete.'

Another option that is not found in basic eventive complex predicates is positioning the auxiliary in a fixed position in the clause as a whole, typically **second position (str)** (also called Wackernagel's position), as in example (50) from Tohono O'odham (Zepeda 1983:31):

- (50) a. huhu'id 'o g ban g cu:wí
chase AUX DEF coyote DEF jackrabbit
'The coyote is chasing the jackrabbit.'
b. ban 'o g cu:wí huhu'id
coyote AUX DEF jackrabbit chase
'The coyote is chasing the jackrabbit.'

The greater flexibility of position between auxiliary and event verb compared to basic eventive complex predicates is due to the fact that the sequence of verbs has a more fixed order, at least in the serial verb strategy, than the combination of the TAMP form and the event verb. Of course, the TAMP form does not encode a separate subevent which can be ordered causally and temporally relative to the other verb subevent.

With respect to incorporation (morphological boundedness), a TAMP form bound to the event verb is usually considered to be an inflection of that verb. For example, modal concepts are also expressed by verbal inflections, often

Table 13.2 *The family of auxiliary construction strategies*

Contiguity	<i>contiguous, preceding</i> <i>contiguous, following</i> <i>noncontiguous</i>
Incorporation (morphological boundness)	<i>second position</i> <i>form a single word</i> <i>separate words</i>
Locus of predicate inflection	<i>inflection on auxiliary</i> <i>inflection on event verb</i> <i>same (doubled) inflection on auxiliary and event verb</i> <i>split inflection</i> <i>split and doubled inflection</i>

grammaticalized from modal verbs (the inflections are often glossed as “subjunctive” or “conditional”), as in Abkhaz (Hewitt 1979:192, 195; cf. Bybee et al. 1994:195):

- (51) s-cà-r-o-w+p'
1SG-**go**-COND-be-STAT
'I must go.' [deontic]
- (52) a-y^onè də-q'a-za+r-ò-w+p'
ART-house 3SG-PREV-**COND-be**-STAT
'He must be at home.' [epistemic]

In some languages, the TAMP form may cliticize onto something other than the event verb, as can happen in Warlpiri (Laughren 1989:333; note that the auxiliary clitic is in second position in the clause):

- (53) wati-ngki=ipa-lu-nyanu pakarnu
man-ERG=IPFV-3PL.SBJ-REFL hit
'The men hit each other/themselves.'

Finally, and most strikingly, the strategies for locating verbal inflection in the auxiliary construction are defined very similarly to the same classification for eventive complex predicates, at least for the serial verb strategy. The main difference is that, when the inflection occurs on just one form, the contrast is between auxiliary and event verb instead of between first verb and last verb.

The inflection may occur only on the auxiliary, as in example (54) from Iatmul (Staalsen 1972:64; cf. Foley 1986:144; Anderson 2006:25):

- (54) kla-ka li-ka-wun
get-DEP AUX-PRS-1SG
'I am getting it.'

The inflection may also occur only on the event verb, as in example (55) from Mödö (Persson and Persson 1991:19; cf. Anderson 2006:26):

- (55) tí mókònyì yi
 FUT 1:rescue you
 'I will rescue you.'

The inflection may occur on both auxiliary and the event verb (this is called 'doubled' by Anderson), as in example (56) from Gorum (Aze 1973:279; cf. Anderson 2006:26):

- (56) ming ne-gaʔ-ru ne-laʔ-ru
 1SG 1-eat-PST 1-AUX-PST.
 'I ate vigorously.'

There may also be split inflection, as in example (57) from Jakaltek (Craig 1977:60; cf. Anderson 2006:26):

- (57) xk-ach w-ila
 CMPL-2.ABS 1.ERG-see
 'I saw you.'

In (57), the absolute person index is on the auxiliary and the ergative person index is on the event verb.

There may also be split and doubled inflection as in example (58) from Buru-shaski (Berger 1998:161; cf. Anderson 2006:27):

- (58) jáa a-yúgušanc̄ moó-y-a bá-a
 1SG.GEN 1-daughter.PL 2PL-give-1 AUX-1
 'I herewith am giving you my daughters.'

In (58), the subject person index occurs on both auxiliary and event verb, but the object person index is only on the event verb.

Anderson (2011b, 2017) observes another auxiliary construction strategy that occurs in a number of African languages and also in English. In this strategy, which Anderson calls a **STAMP strategy (str)**, the tense-aspect-mood-polarity (TAMP) auxiliary form is morphologically bound with the subject pronoun (S) form. For example, in the Tarok examples in (59) and (60), *n* and *mi* express both the first person subject pronoun argument and aspect and modality, respectively (Sibomana 1981/82:238; cf. Anderson 2017:514):

- (59) n wá ù-dinj
 1.PFV drink CLF-water
 'I have drunk the water.'

- (60) mi wá a-tí ipín
 1.IRR drink CLF-tea tomorrow
 'I will drink tea tomorrow.'

This phenomenon occurs widely in African languages, as documented by Anderson, but also in English, as contracted forms of the Auxiliary with the Subject Pronoun:

- (61)
- a. I'll think about it.
 - b. I'm thinking about it.
 - c. I've thought about it.

Essentially what has happened is that morphological fusion of the personal pronoun with an auxiliary has taken place before double expression of the (unstressed) pronoun and a common noun phrase denoting the subject referent (see section 3.3.2) has been allowed. If double expression had taken place first, or at around the same time, it would simply be an instance of subject indexation by the auxiliary. But the two grammaticalization processes (morphological fusion and double expression) do not always occur in the same order, leading to constructions with a single morpheme combining argument and predicate functions.

In many languages, TAMP categories are expressed by an uninflected (or little-inflected) form that is therefore not verblike, although in many cases it has derived historically from a verblike form. In the case of negation, an uninflected form is far more common than an inflected form (see section 12.2). We treat these non-verblike tense-aspect-mood forms, including negators, as an instance of the auxiliary construction, although their historical source is different from most of the examples described in this section.

13.5 Support Verb Constructions: Between Grammaticalization and Lexicalization

Support verb constructions (cxn) are complex predicates in which one of the elements – the **support verb (cxn)** – has undergone semantic change, specifically semantic generalization, such that it makes a minimal semantic contribution to the meaning of the whole complex predicate – in fact, it no longer denotes a separate subevent of the whole event. The other element more contentfully describes the event. The other element also frequently recruits a nominalization construction. The verb forms in a support verb construction are also in a relatively idiosyncratic semantic relationship to each other, in terms of both form and function. For this reason, support verb constructions are somewhere in between grammaticalization and lexicalization.

The term ‘support verb’ is used here in essentially the same way as it is used in the FrameNet project (Fillmore, Johnson, and Petrucc 2003:244; Ruppenhofer et al. 2010:31). FrameNet focuses on the fact that the other element in the support verb construction is not generally inflected like a simple verb, but instead is in a nominal form – that is, it is an action nominal (see section 2.2.5). An example of a support verb + action nominal construction is given in (62) (Ruppenhofer et al. 2010:31):

- (62) Frances Patterson **underwent an operation** at RMH today and is expected to be hospitalized for a week or more.

In (62), the support verb *undergo* is combined with the action nominal *operation*. The support verb – action nominal combination is conventionally determined. The support verb itself is quite general in semantic content.

Last, but not least, the action nominal combined with the support verb defines the argument structure of the complex predicate – that is, the semantic roles of the allowable participants in the clause: in the case of (62), the patient subject and the location of the action. This last point indicates that the nominalized verb form is part of the complex predicate: the combination of support verb and action nominal has a single argument structure, like eventive complex predicates and also auxiliary constructions.

This situation contrasts with a main verb that allows an action nominalization as a participant (Ruppenhofer et al. 2010:31). Example (63), which expresses perception + action, is not considered to form a single event, as discussed in section 13.2.1, and so is not an example of a support verb construction:

- (63) A senior nurse observed the **operation**.

Another type of construction that we will argue involves a support verb contains a form that is identical to the verb form but is in a phrase resembling a referring phrase, as in the example in (61) (see Wierzbicka 1982 for detailed discussion of the semantics of this subtype in English):

- (64) They **had a drink/a snack**.

The strategy for a support verb construction illustrated in (62) and (64) – inflected support verb + uninflected, often overtly coded, event form in a nominalization construction – is also called a ‘light verb’ construction (see Anderson 2011a:811–13 and references cited therein; Fillmore et al. 2003:250, n. 5). This strategy also strongly suggests an origin of support verb constructions in complex sentence constructions, specifically complement constructions, since complements are event arguments of the main verb event. Examples (65)–(66) illustrate support verb / light verbs in Hindi complex predicate constructions (Mohanan 1994:200). The English translation of (66) is also an example of a support verb construction.

- (65) raam-ne mohan-par b^harosasaa kiya
Ram-ERG Mohan-LOC **reliance-NOM do:PF**
'Ram relied on Mohan.'

- (66) niinaa-ne kahaanii-par d^hyaan diyaa
Nina-ERG story-LOC **attention-NOM give:PF**
'Nina paid attention to the story.'

One important observation about support verb constructions is that the argument phrase-like part of the complex predicate is usually found in one of the core argument roles such as the Hindi Nominative (actually an absolute flag

in the perfect aspect construction). As a consequence, the semantic participants in the event usually, but not always, are expressed in other argument roles. For example, Mohan in (65) and the story in (66) are expressed as locative arguments, and *story* in the support verb construction in the English translation in (66) is expressed as an oblique phrase with *to*.

Support verb constructions are also used to integrate borrowed verbs – action words – into a language. For example, in K'ichee', the native verb *b'an~?an* combines with Spanish borrowed verbs in their infinitive form (Norman 1976:53; borrowings italicized; translation original; interlinear gloss added):

- (67) *ko:ma la? š-u-?an pensar, na xe: ta či*
 since that PF-3SG.ERG-do think, NEG like NEG COMP
 u-b'i:ši:k š-u-b'i:x, ko:ma max u-kunab'a:l
 3SG.POSS-saying PF-3SG.ERG-say since no 3SG.POSS-medicine
 ri? r-a:čih, šaq enga:ñ š-u-b'an ka:nog
 the 3SG.POSS-man, just deceive PF-3SG-do back
 'Since he did thinking, not like its saying he said it, since that man had no
 medicine, he just did deception.'

Another instance of the support verb construction is what is called the ‘coverb’ construction, found in some Northern Australian languages including Wardaman (Merlan 1994), Wagiman (Wilson 1999), and Jaminjung (Schultze-Berndt 2000). In these languages, only a small number of predicates take the typical inflectional categories of “verbs” and are called such (i.e., they are labeled by the language-specific name “Verb”). Wilson lists around forty-five such Verbs for Wagiman (Wilson 1999:24). These Verbs have typical “light” meanings such as *-di-nya* ‘come,’ *-ge-na* ‘put,’ *-ya-yi* ‘say/do/become,’ and *-ra-ndi* ‘throw’ (Wilson 1999:24). An example of a complex predicate in Wagiman is given in (68) (Wilson 1999:64). Some of these Verbs frequently combine with another word class, called Coverbs in Wagiman and other typologically similar Australian Aboriginal languages, to form complex predicates.

- (68) *bewh-ma nga-bu-ni boran*
 cross-ASP 1SG-hit-PST river
 'I crossed the river.'

The coverb class is a large class and the meanings that members of the class denote are actions or properties that are typically expressed by fully inflecting “verb” forms in other languages. The Verb–Coverb complex predicate constructions in these languages are support verb constructions essentially the same as the English, Hindi, and K'ichee' examples in (62)–(67). That is, a semantically “light” element that inflects for typical verbal categories – the Verb – combines with a more contentful element that does not inflect like a verb but largely determines the argument structure of the clause – the Coverb. The only difference is that the Coverb in these languages has limited inflection

and does not generally take nounlike inflections either. In Wagiman, the Coverb takes two suffixes, *-ma/-Ca* and *-yan* that appear to be aspectual (Wilson 1999:54); in Wardaman the presumed cognate suffix *-ma* does not appear to have any semantic value (Merlan 1994:264). Wagiman and Jaminjung take some nominal suffixes but not all of them (Wilson 1999:57–8; Schultze-Berndt 2000:73).

Thus, Coverbs are at best only partly nounlike in their morphosyntax, and are chiefly defined by their combination with inflecting “verbs” to form complex predicates without taking verblike inflection themselves. If we broaden the definition of this type of complex predicate in this way, other languages that reportedly have a very small number of “verbs,” and combine them with other forms to express meanings expressed by simple predicates in most languages, have support verb constructions that use the same strategy.

At least some cases of “support verbs” may be better analyzed as making a consistent semantic contribution to the meaning of the whole complex predicate. This meaning usually involves aspect or voice, categories that substantially alter the semantics of the event (cf. Bybee’s [1985] concept of semantic relevance). In Hindi, some support verbs are associated with systematic aspectual and causal (voice) differences (Mohanan 1994:201):

- (69) kamre-kii safaaii hui
 room-GEN clean:NOM happen/become:PFV
 ‘The room got cleaned.’
- (70) raam-ne kamre-kii safaaii kii
 Ram-ERG room-GEN clean:NOM do:PF
 ‘Ram cleaned the room.’

Other cases are more difficult to analyze in this way. Wierzbicka (1982) argues persuasively for a basically aspectual analysis of the *have a V* construction illustrated in (64) – approximately ‘do a little while’; but she identifies a large number of subtypes of the *have a V* construction with more specific, somewhat idiosyncratic variations on the aspectual meaning. The support verbs in the coverb constructions in the Australian languages cited earlier appear to make less systematic contributions to the meaning of the complex predicate.

Other types of support verb constructions are more clearly lexicalized, such as the Spanish example in (71) (example from Dumont 2011:8; interlinear gloss added):

- (71) y se da cuenta que a lado de él están
 and 3REFL give:3SG account COMP at side of him be:3PL
 parados tres niños
 standing three boys
 ‘and realizes that standing next to him are three boys’

The complex predicate in (71) consists of the support verb *dar* ‘give’ combined with the noun *cuenta* ‘account’ derived from *contar*; the complex predicate now means ‘realize.’

The range of semantic function of support verbs goes from quite general meanings that usually express voice or TAMP, and hence look like the auxiliary constructions described in section 13.4, to more idiosyncratic combinations of (former) event verbs that look more like the lexicalized eventive complex predicates described in section 13.3.2. Support verbs – at least, some of them – appear to have fairly general meanings. Even when this is the case, however, support verbs combine with event verbs in at least partly unpredictable ways, which is more reminiscent of lexicalization. Thus, we have to say that support verb constructions are neither clear cases of auxiliary constructions, nor clear cases of lexicalization. They are in between these two constructions, and it is difficult to sharply distinguish them from the other constructions.

In all of the examples of support verb constructions presented so far, the support verb is combined with a predicate that denotes an action. Ruppenhofer et al. (2010) suggest that copulas in object and property predication also count as support verbs, as in (72):

- (72) a. Sally **is a professor.**
 b. Sally **is smart.**

That is, the support verb construction includes examples where the support verb combines with a predicate that may denote an object category or a property as well as an action. In other words, copulas (section 10.2) are analyzed as support verbs, and copulas combined with their nonprototypical predicates are analyzed as support verb constructions (and, hence, as complex predicates). We will use Ruppenhofer et al.’s broader definition of a support verb construction as well.

The examples in (72a–b) are simple stative assertions of object and property predication. Ruppenhofer et al. also extend the support verb construction to include inchoatives and evidential modulation of object/property predication, as in (73) (all from Ruppenhofer et al. 2010:31–32):

- (73) a. One of them **became my successor** in the professorship in the University of Michigan and the presidency of Cornell.
 b. This **seemed a rather redundant effort** to many.
 c. Tom **appears smart enough.**
 d. Massu **looked without energy**, he looked defeated seated with the towel on his face.

The analysis of copulas becomes more challenging with certain strategies for locative and possessive clauses, such as example (74) from Acehnese (Durie 1985:126; cf. Stassen 1997:141) or example (75) from Tyvan (Anderson and Harrison 1999:24; cf. Stassen 2009:145):

- (74) abang di=keude=geuh
elder_brother **at=town=3SG**
'Elder brother is in the town.'
- (75) men diis-tiy men
1 **cat-HAVING** 1
'I have a cat.'

The discussion of these constructions in Chapter 10 analyzed the locative predication in (74) to include the ground object (the town), so that the predicate in the English translation is *is in the town*. Example (74) is an instance of presentational possession, so there is no division of the clause into topic (subject) and comment (predicate; see Chapter 11).

However, when the putative "support verb" is more contentful, as in *My older brother lives in town* or *I am holding the cat*, then the ground and the possessum are more clearly argument phrases. Here also, there is no sharp dividing line between "support verbs" combined with a noun to form a complex predicate and more contentful action verbs that are simple predicates accompanied by arguments.

Analyzing copulas as support verbs deviates from the constructions described so far in this chapter, including the other support verb constructions, in that one of the elements of the complex predicate does not denote an action, not even etymologically, but instead an object or a property. In other words, it is more like an argument, as suggested in the preceding paragraph. The final type of complex predicate construction to be discussed in this chapter is clearly made up of a predicate and argument phrase that has lexicalized into a complex predicate.

13.6 Argument Complex Predicate Constructions: Verb + Argument "Idioms"

Most of the support verb constructions illustrated in section 13.5 use the strategy of a support verb inflected like a verb combined with an event form that is nominalized – that is, that recruits at least some of the morphosyntactic structure of an argument phrase, in particular the flag, for example, the Hindi Nominative forms in (69)–(70). Although the support verb construction therefore resembles a predicate-argument construction, the "argument phrase" denotes an event, not an object.

However, there are other predicate-argument constructions in which the 'argument phrase' denotes an object, at least etymologically – but the construction has lexicalized to denote a unitary event concept. And there are cases in between, in which it is not entirely clear what the "argument phrase" denotes. We will call these **argument complex predicate constructions (cxn)**.

The first strategy for argument complex predicates that we will describe here is what is called a cognate object – or, more generally, the **cognate head-dependent strategy (str)** (Bond and Anderson 2014). These are constructions

in which an inflected form is combined with a phonologically related argument phrase form. This is a rather unusual strategy in that it is the phonological form, not (just) the morphosyntactic form, which defines the strategy; we will see a similar type of strategy with ideophones in section 14.4.

In Maale, the cognate head-dependent strategy is used with a small class of events (in fact, the cognate dependent [argument] form is optional; Amha 2001:112; ADCL = affirmative declarative):

- (76) ɻízi seefi jéék'k'-á-ne
 3SG.M.NOM urine.ABS urinate-IMPF-ADCL
 'He is urinating (urine).'

In the case of an emission verb such as 'urinate,' there is a relatively small semantic difference between the action and the emission, which probably motivates the use of the cognate head-dependent strategy for this event: the semantic closeness of predicate and "argument" leads to the use of cognate forms. The same is even more true of action + performance combinations, as in *They sang songs*.

Another use of the cognate head-dependent strategy is not for lexicalization but to express semantic categories, such as intensification, that are also expressed using verbal inflections, auxiliary constructions, or uninflected elements. Example (77) illustrates this use of the cognate head-dependent strategy in Lango (Bond and Anderson 2014:225, from Noonan 1992:176):

- (77) cèmmì ràc à-rác-â
 food.DEM be_bad.HAB GER-be_bad-GER
 'This food is really bad.'

Argument complex predicates differ from ordinary argument structure constructions in that although the "argument phrase" denotes an object, that object is not really a participant in the event. The Spanish example in (78) is not literally about the sun; it is expressing a weather condition (Dumont 2011:11):

- (78) pero está haciendo bastante sol
 but it_is making a_lot_of sun
 'But it's really sunny.'

Although the noun in the complex predicate *hacer sol* 'make sun' literally denotes an object concept, it is not that different in structure from Spanish support verb constructions with nouns that denote an action or a state such as *hace calor* [it.makes heat] 'it's hot.' In this case, one would say that an idiomatic interpretation of the action + object combination has emerged.

There is no sharp division between examples like (78) and verb – argument phrase idioms in which the meaning of the complex predicate is not predictable from either the verblike element or the nounlike element, but both parts equally contribute to the meaning of the whole. Two English examples of verb–argument idioms / complex predicates are given in (79), and a third example from Lezgian in (80) (Haspelmath 1993b:288):

- (79) a. They were **shooting the breeze** all afternoon.
 b. He finally **made the grade**.
- (80) čara-da-n šej?ini-z ġil jargi awu-r-la
 alien-NR.SG-GEN thing-DAT hand long do-AOR.PTCP-TEMP.CVB
 xalq'di-n wilik bejabur že-da
 people-GEN before disgraceful become-FUT
 'When one steals [lit. 'do long hand'] someone else's things, one disgraces oneself before the people.'

Example (80) shows that argument complex predicates may include complex argument phrases with modifiers ('*long hand*') that form part of the complex predicate. In some cases, however, the modifier is a property of the event denoted by the complex predicate. When a simple predicate paraphrase is available, the modifier takes the form of a manner expression. Example (81) is a support verb construction illustrating this phenomenon, while example (82) is more like an argument complex predicate (the modifier in both constructions is italicized):

- (81) a. He gave a *loud shout*.
 b. He shouted *loudly*.
- (82) a. She heaved a *deep sigh*.
 b. She sighed *deeply*.

Such "modifiers" of events are components of the complex predicate, whether they are in the form of a nominal modifier as in (81a) and (82a), or in a form more typically associated with a verb as in (81b) and (82b) (for the latter, see section 14.2).

A participant of the event denoted by an argument complex predicate may be a possessive modifier of the noun in the argument phrase (italicized in the examples):

- (83) a. She lost *her cool*.
 b. You're pulling *John's leg*.

In (83a), the possessive modifier *her* is a pronoun that refers to the same individual as the subject argument phrase. The whole noun phrase *her cool* could be analyzed as part of the complex predicate, because *her* just indexes the subject referent. But in (83b), the possessive modifier *John's* introduces a second participant distinct from the participant referred to by the subject argument phrase. Example (83b) can be paraphrased with a transitive construction with two argument phrases, *You're fooling John*. That is, semantically (83b) is a bivalent event. The possessor is not really part of the argument complex predicate, but instead is a genuine argument of the complex predicate.

The phenomenon of an argument of a predicate being expressed grammatically as the possessor of another argument phrase is particularly common with situations involving a person and a body part of the person. One common type

is found with experiential complex predicates; the Wolof example (80) from section 7.4 is repeated here as (84):

- (84) sama xl dafa tàng
 POSS.1SG **heart** SBJ.3SG **be_hot**
 'I am angry.' [lit. 'My heart is hot']

The support verb construction may also have semantic arguments as genitive dependents, as illustrated in (85) and the Japanese example in (86) (Matsumoto 1996:64; see also the Hindi examples [69]–[70] in section 13.5 above):

- (85) a. We **caught sight** of the parade.
 b. He **took note** of the car's license plate.

- (86) Seifu wa koogai e honbu no
 government TOP suburb GOAL **headquarters** GEN
 idoo o shita
movement ACC **did**
 'The government moved the headquarters to the suburbs.'

Finally, the argument complex predicate may become incorporated, as we observed also in eventive complex predicate strategies. That is, the nounlike form is incorporated into the verblike form, leading to a single complex predicate word. We already encountered noun incorporation in section 8.4, as a strategy for a low-topicality referent. In some cases, it can be argued that the referent is so generic in nature that it is not a participant in the discourse, as in the following incorporation construction in Comanche (Charney 1993:123; RPT = Repetitive):

- (87) pukumakwI?eti urii
 puku-makwih=?e-tii=utii
horse-chase,herd-RPT:ASP-GNR:ASP=3PL
 'They're chasing horses.'

In English, we do not use a compound for this activity, which is not as culturally salient for most English speakers; but we do have noun–verb compounds to express activities such as *berrypicking*, *babysitting*, and so on (Mithun 1984a:849). Comanche also uses noun–verb compounds for verb–argument idioms, which are much clearer cases of argument complex predicates (Charney 1993:124–25):

- (88) puku-tsaka
horse-pull,lead
 'to witness, testify (e.g., in court)'

In the case of noun incorporation, just as with the case of locative and possessive predication discussed in section 13.5, there is a question of when the object word is being used to refer to a participant and when it forms part of a complex predicate. Grammatical form is not a consistent guide. Mithun 1984a) shows that, in some languages, incorporated nouns are still best thought of as

participants, albeit less salient ones (her Types III and IV incorporation, and possibly also Type II incorporation; see section 8.4). On the other hand, in a language like English, low-salency props are expressed as independent argument phrases, but they may not really be functioning as participants. In cases such as *Jill was sitting in the living room reading the paper*, *the paper* is a conventional expression (it is definite even though it has not been mentioned before, and there may be multiple newspapers that Jill could be reading), and *read the paper* is probably better analyzed as an argument complex predicate.

A little-discussed subtype of the argument complex predicate construction uses personal pronouns instead of common nouns (Singer 2011; Shenhar 2013). Some pronominal argument complex predicates express TAMP concepts, not unlike the cognate head-dependent strategy described at the beginning of this section. An example is the Modern Hebrew Progressive construction in (89) (Shenhar 2013:5):

- (89) hu yashav l-o b=a-sifriya
 he sit.3SGM.PST to-3SGM in=EF-library
 'He was sitting in the library.' [lit. 'he sat to-him in the library']

Other pronominal argument complex predicates express idiomatic combinations, not unlike the (common noun) argument complex predicates described earlier in this section. In Mawng, the combination of the Land gender index (glossed LL) with a general verb for poking events (*arnake* 'pierce with short narrow object,' glossed "poke" in [90]) means to hunt by poking a stick into the ground (Singer 2011:633):

- (90) k-angp-arnake-n k-iwu-ma-Ø mangili
 PRS-3PL/3LL-poke-NPST PRS-3PL/3.MACLF-get-NPST freshwater_tortoise
 'They look for and get tortoises.'

Since the "object" of this verb is part of the idiom, the tortoise cannot be expressed as an argument phrase of *arnake*, but must be expressed as the argument phrase of another verb in the complex predicate, namely *ma*.

The Mawng complex predicate forms a single word. English also has a number of **pronominal argument complex predicates (cxn)** (Shenhar 2013:9) using independent (or, more precisely, encliticized) pronoun forms; common noun argument complex predicate paraphrases given in the (b) sentences:

- | | | |
|------|---------------------|-----------------------------------|
| (91) | a. Beat it! | b. Hit the road/the trail! |
| (92) | a. I'm losing it. | b. I'm losing my mind/my marbles. |
| (93) | a. Don't push it. | b. Don't push my buttons. |
| (94) | a. He made it home. | b. He made his way home. |
| (95) | a. I get it. | b. I get the point/the picture. |

The same phenomenon occurs in Modern Hebrew; again, a common noun argument complex predicate paraphrase is given in (96b) (Shenhar 2013:16–17):

- (96) a. Xatafti ota
grab.1SG.PST her
 ‘Something bad happened to me.’
- b. xatafti shapafat / maka
grab.1SG.PST flu(F) / hit(F)
 ‘I got the flu/I got hit.’
 [lit. ‘I grabbed a flu/hit’]

Another type of pronominal argument complex predicate is derived from a reflexive construction (Shenhar 2013:13–14):

- (97) Complex trading infrastructure **lends itself** to costly booking errors
 (article headline)
www.wallstreetandtech.com/trading-technology/complex-trading-infrastructure-lends-its/240164213; accessed 25 January 2014)
- (98) 'azov otxa!
leave.2SGM.IMP you.ACC
 ‘Be serious!’ [lit. ‘leave you!’]

These idiomatic pronominal argument complex predicates are comparable to the more general verb + reflexive pronoun (“middle voice”) strategy for monovalent events described in section 7.2. Once the pronoun is no longer representing an independent participant (a process Shenhar calls ‘dereferentialization’), then it is construed as an element of a complex predicate denoting a single event.

The reflexive pronominal argument complex predicate strategy arises from the reflexive construction, as described in section 7.2. Both Singer (2011:634–36) and Shenhar (2013:11–12) argue that the pronominal argument complex predicate strategy arises from common noun argument complex predicates through the use of a pronoun form instead of the noun form. The origin of the Modern Hebrew pronominal argument complex predicate for expressing TAMP meaning, on the other hand, is more mysterious.

13.7 Summary

The complex predicates discussed in this chapter are quite varied in their form, function, and historical origin. All but the last type discussed in section 13.6 originate in constructions with two verbs – that is, two elements denoting actions that combine to form a single predication. The eventive complex predicate construction appears to originate in a coordination construction – or possibly, in some cases, an adverbial subordination construction (see Chapter 15). These constructions may further grammaticalize into argument structure / voice constructions (section 13.3.1). They may also lexicalize into idiosyncratic verb–verb combinations (section 13.3.2).

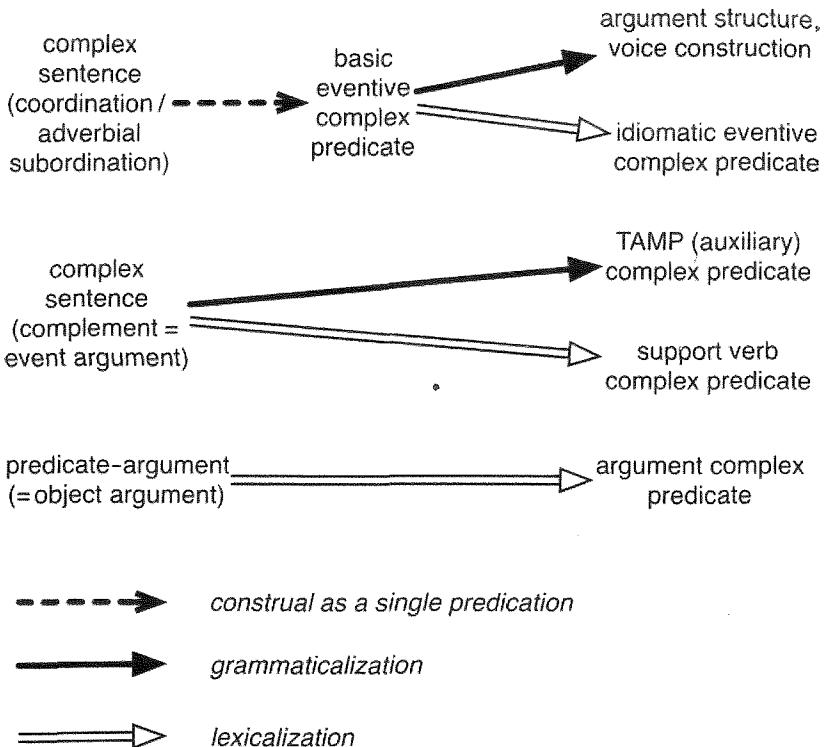


Figure 13.1 *Paths of evolution for eventive complex predicates and related types*

Other eventive complex predicate constructions appear to originate in complement constructions, some grammaticalizing into auxiliary constructions (section 13.4), and others turning into support verb constructions through a more idiosyncratic type of grammaticalization or lexicalization (section 13.6). The line between the latter two types of constructions is not sharp: some support verb constructions express partly productive TAMP meanings, while others are more idiosyncratic.

In complement constructions, one event is an argument of the other event. This predicate–argument relation is, of course, similar to the prototypical predicate–argument relation where the argument is an object concept. Prototypical predicate–argument relations may also lexicalize into complex predicates where the argument loses its status as a participant in the event; these were described in section 13.6.

Figure 13.1 summarizes the paths of evolution of the types of complex predicates discussed in this chapter. All of the constructions to the right of the leftmost constructions (complex sentences of any type, predicate–argument combinations) are analyzed as complex predicates in this textbook since they express a single predication.

Terms Defined in this Chapter

13.1 Introduction

13.1.1 Complex Predicates and Information Packaging

complex predicate (*cxn*)

13.1.2 Semantics and Evolution of Complex Predicates

eventive complex predicate (*cxn*), TAMP (*sem*), lexicalize/lexicalization, stative complex predicate (*cxn*)

13.2 Eventive Complex Predicate Constructions

13.2.1 Semantics of Eventive Complex Predicates: One Event or Two?

13.2.2 Strategies for Eventive Complex Predicates: Serial Verbs and Related Strategies

serial verb strategy (*str*)

13.3 Grammaticalization and Lexicalization of Eventive Complex Predicates

13.3.1 Grammaticalization into Argument Structure Constructions and Voice

13.3.2 Lexicalization of Eventive Complex Predicates

13.4 Grammaticalization of TAMP: Auxiliary Constructions

auxiliary construction (*cxn*), auxiliary (*cxn*), second position (*str*), STAMP strategy (*str*)

13.5 Support Verb Constructions: Between Grammaticalization and Lexicalization

support verb construction (*cxn*), support verb (*cxn*)

13.6 Argument Complex Predicate Constructions: Verb + Argument “Idioms”

argument complex predicate (*cxn*), cognate head-dependent strategy (*str*), pro-nominal argument complex predicate (*cxn*)

13.7 Summary

14 Stative Complex Predicates, including Manner

14.1 Stative Complex Predicates: Semantics

In **stative complex predicates (cxn)**, a stative concept is not being used to modify a referent (as with (attributive) adjectives; section 4.1.2). Nor is it being used as the primary predication (as in property predication; section 10.3). Instead, it is functioning as a part of a complex predicate.

Three broad semantic types of stative complex predicates are recognized (Himmelmann and Schultze-Berndt 2005; Loeb-Diehl 2005; van der Auwera and Malchukov 2005; Verkerk 2009a,b), illustrated in (1)–(3):

- (1) *Resultative complex predicates:* We **painted** the door **red**.
- (2) *Depictive complex predicates:* I **ate** the carrots **raw**.
- (3) *Manner complex predicates:* We **crawled** down the slope **slowly**.

In **resultative complex predicates (cxn)** (also called resultative secondary predicates or simply resultatives), the stative predicate describes a state that results from the performance of the event denoted by the main predicate. Hence, the stative event temporally follows the main predicate event. The resulting state is the state of one of the participants, namely the door in (1). In other words, the stative predicate is **participant-oriented (sem)**: it is asserted of one of the participants in the events.

In **depictive complex predicates** (also called depictive secondary predicates or simply depictives) (*cxn*), the stative predicate describes a state that holds at the same time as the event denoted by the eventive predicate. It is difficult to describe exactly what sort of semantic relationship, if any, must hold between the eventive predicate and the stative predicate. It is definitely less than a causal relationship, but it appears that there are some constraints, at least in English (Himmelmann and Schultze-Berndt 2005:9). The stative predicate is also participant-oriented: it is asserted of one of the participants, namely the carrots in (2).

In **manner complex predicates (cxn)** (also called manner adverbs or, here, simply manner), the stative predicate describes a property of the event denoted by the main predicate, such as the speed of the event in (3). The property is therefore necessarily simultaneous with the main predicate event, as with depictive complex predicates. Unlike depictive or resultative complex predicates,

Table 14.1 *Semantic properties of stative complex predicate constructions*

Construction	Temporal relation	Orientation
resultative complex predicates	sequential	participant-oriented
depictive complex predicates	simultaneous	participant-oriented
manner complex predicates	simultaneous	event-oriented

manner is not participant-oriented; it is **event-oriented (sem)**, since it describes a property of the event.

Thus, manner and depictives are both simultaneous with the main predication event, while resultatives are sequential; and resultatives and depictives are participant-oriented, while manner is event-oriented. These differences are enumerated in Table 14.1.

In this perspective, event orientation is taken to be a defining feature of manner. Manner forms are modifiers of events and hence describe properties of events. For this reason, manner forms are not usually categorized as so-called secondary predicates, which are participant-oriented. Manner is often not treated as a complex predicate. But there is also near complete overlap in the strategies used for resultatives, depictives, and manner. Also, in a language like English, even the distinct strategy used for manner complex predicates is also sometimes used for participant-oriented predicates, as in *They ate the fish willingly* (Bernard Comrie, pers. comm.). For these reasons, and because manner is a stative predicate like resultatives and depictives are (another reason why they are treated alike), manner is treated here as a subtype of stative complex predicates. In addition, as will be seen in section 14.3, stative complex predicates are related to other constructions, including (attributive) adjectives.

The term ‘manner’ was used differently in section 7.3.1, as a semantic term to describe specific qualitative features of how an action is performed. This is also what is meant by Levin and Rappaport Hovav (2013) when they describe ‘manner verbs’ (see section 7.3.1). In this chapter, we use the term ‘manner’ to describe a stative property of an event, prototypically speed – ‘fast/quick(ly),’ ‘slow(ly)’ – and quality – ‘well,’ ‘bad(ly).’ Both of these uses of the term ‘manner’ are widespread in linguistic description and analysis. In other words, manner appears to be construed as stative in manner stative complex predicates, but construed as dynamic in manner verbs – that is, actions. In another strategy used by languages to express manner, ideophones, the stative/dynamic contrast in the construal of manner may not be as great (see section 14.4).

Resultative complex predicates have been discussed extensively for English (Rappaport Hovav and Levin 2001), but less has been done on the cross-linguistic study of resultative complex predication (Verkerk 2009b:115; but see Verkerk 2009a). Hence the description of resultative complex predication here is brief and focused on basic classification of the semantic types of resultatives.

Resultative complex predicates can describe the resulting state of either the P argument, as in (1) above, or the undergoer type of S argument:

- (4) The pond **froze solid**.

However, there are some resultatives that are predicated of A arguments. Some possible English examples are discussed in Rappaport Hovav and Levin (2001:770) and Croft (2012:303–7); but indubitable examples are found in some Southeast Asian languages such as Lao, illustrated in example (19) below.

Resultative expressions in English fall into two grammatical and semantic subtypes (Rappaport Hovav and Levin 2001), only one of which is acceptable in Japanese (Washio 1997; the examples are from Washio 1997:5, 6, 20; the suffix *-ni* on the resultative secondary predicate is not glossed by Washio but is identical to the Dative):

- (5) boku-wa aisu kuriimu-o katikati-ni koorase-ta.
I-TOP ice cream-ACC solid freeze-PST
'I froze the ice cream solid.'

- (6) kare-wa teeburu-o kirei-ni hui-ta.
he-TOP table-ACC clean wipe-PST
'He wiped the table clean.'

- (7) *uma-ga maruta-o subesube-ni hikizut-ta.
horse-NOM log-ACC smooth drag-PST
Intended meaning: 'The horses dragged the logs smooth.'

- (8) *karera-wa kutu-no soko-o boroboro-ni hasit-ta.
they-TOP shoe-GEN sole-ACC **threadbare** pull-PST
Intended meaning: 'They ran the soles of their shoes threadbare.'

The English and Japanese constructions in (5)–(6) involve simply adding the resultative expression to the transitive verb construction (*freeze the ice cream*, *wipe the table*). The English construction in (7)–(8) is somewhat different. Among other things, the construction in (8) adds an argument phrase that is not normally present – *run* is intransitive – and the result state is predicated of that added argument. The English construction in (8) is called the Fake NP Resultatives ("fake" because the typical argument structure of the verb does not include the argument in question); there is also an English Fake Reflexive construction, as in *They laughed themselves silly*, which does not exist in Japanese either. Hence the English construction in (7)–(8) is somewhat different from the English construction in (5)–(6).

The situations in (5)–(6) represent actions that end in a result state.¹ For this reason, there are a limited number of resultative complex predicates that can

¹ There is another interpretation of *wipe* where one can *wipe the table* without it becoming fully clean, but the change-of-state interpretation of *wipe* in (6) leads to the table being clean.

combine with particular verbs in this type of resultative construction. On the other hand, the situations in (7)–(8) do not normally end in a resulting state (Washio 1997; Iwata 2006). Any further crosslinguistic survey of resultative complex predicates should examine the two types of resultatives in (5)–(6) in order to compare their grammatical expression. Washio notes that not even all of the resultative types in (5)–(6) are acceptable in Italian or French, though judgments vary (Washio 1997:28–32).

Washio also identifies a semantic type that he calls ‘spurious resultatives,’ illustrated in (9)–(10) (Washio 1997:16–17):

- (9) He **tied** his shoelaces **tight/loose**.
 (10) He **spread** the butter **thick/thin**.

Washio argues that, in spurious resultatives, there are different possible resulting states of the event, but the resulting state is the way it is because of the manner in which the action is carried out. More precisely, the resulting state in (9)–(10) is due to a change in the configuration or distribution of the component parts or material of the participant, which can equally be described as the manner in which the participant is affected by the action. Hence the stative predicate can be construed as either predicated of a participant who undergoes the change (participant-oriented), or predicated of the event (event-oriented). In English, this allows for either the construction in (9)–(10), which resembles the construction used for resultative complex predicates in (1); or the construction in (11)–(12), which resembles the construction used for manner complex predicates in (3) (Washio 1997:16–17):

- (11) He **tied** his shoelaces **tightly**.
 (12) He **spread** the butter **thinly**.

Washio notes that this semantic type is acceptable in a resultative construction in both Japanese and French (Washio 1997:18, 29).

- (13) kare-wa bataa-o atuku/usuku nut-ta
 he-TOP butter-ACC **thick/thin** spread-PST
 ‘He spread the butter thick/thin.’
- (14) J’ai noué les lacets de mes chaussures bien serré
 I have **tied** the laces of my shoes **very tight**
 ‘I have tied the laces of my shoes very tight.’

The ‘spurious resultative’ has not been examined typologically, to my knowledge.

14.2 Strategies for Stative Complex Predicates

Stative complex predicate strategies are quite varied, and this section can give only a brief overview. Nevertheless, the same strategies are found for depictive complex predicates, for manner complex predicates, and in at least some cases for

resultative complex predicates (Verkerk 2009a,b). In addition, some of the strategies used for stative complex predicates are also used for property modification within referring phrases, and for the primary predication of properties (van der Auwera and Malchukov 2005). The fact that property concepts and similar stative concepts are involved in all of these constructions appears to lead to the recruitment of property/state constructions used in one information packaging function for property/state concepts occurring with other information packaging functions. In fact, they reveal a continuum of information packaging functions from modification (of referents) to predication (of arguments), described in section 14.3.

The most detailed typological classification of strategies in this domain is Loeb-Diehl's classification of manner strategies (Loeb-Diehl 2005). We will therefore begin with Loeb-Diehl's classification, and then compare it to the typological classification of depictive complex predicate strategies of Schultze-Berndt and Himmelmann (2004).

Loeb-Diehl identifies ten strategies for manner expression. She organizes eight of the strategies by three morphosyntactic parameters. One parameter is the contrast between balanced and deranked predicates noted in section 12.4.2 and described in more detail in the next chapter (see section 15.2.3). The second parameter is a system of strategies: the element denoting the state in the complex predicate recruits the action predication construction ('verby'; cf. section 10.3), or an adjectival phrase or nominal phrase (called 'nouny' by Loeb-Diehl).

The third parameter is described by Loeb-Diehl with the same terms for the semantic distinction between participant-oriented and event-oriented stative complex predicates (see section 14.1). Loeb-Diehl's "participant-oriented" strategy involves indexation of one of the participants in the event by the stative predicate. In Loeb-Diehl's "event-oriented" strategy, the stative predicate does not index any of the participants in the event, or uses some sort of default or "impersonal" index, such as 3rd person singular. Loeb-Diehl takes the lack of indexation (or default indexation) as a symptom of a stative predicate being predicated of the event or "event-oriented." We will use the terms **indexed (str)** and **non-indexed (str)** instead of Loeb-Diehl's "participant-oriented" and "event-oriented" for these stative complex predicate strategies since the latter terms are semantic.

Two other strategies differ from the first eight in other ways, to be described below. All ten strategies are listed in Table 14.2 (adapted, and added to, from Loeb-Diehl 2005:52, table 2.12). The names of the ten strategies are retained from Loeb-Diehl. An eleventh strategy that is attested for depictives only at this point, called 'adpositional personal' in conformity with Loeb-Diehl's names for the other ten strategies, has been added to Table 14.2. Most, if not all, of the strategies in Table 14.2 are also found with depictive complex predicates. Thus, Table 14.2 can be treated as a classification of strategies for stative complex predicates in general, not just manner complex predicates. Less is known about the typology of resultative complex predicates; but some strategies found with manner complex predicates appear to be historically derived from resultative strategies, and will be described toward the end of this section.

Table 14.2 *Strategies for stative complex predicate constructions, including manner*

		indexed	non-indexed
"Verby"	balanced	coordinate personal	coordinate impersonal
	deranked	participial	converb
	balanced	adjective personal	adjective impersonal
	deranked	copular participle; adpositional personal [*]	adpositional
Primary predication More grammaticalized			predicational
			adverbial

* not described by Loeb-Diehl, but described for depictives by Schultze-Berndt and Himmelmann (see below)

In the **coordinate personal strategy (str)**, the stative predicate is actually packaged as a separate predication coordinated with the event predication using a **balanced strategy (str)** (coordinate constructions are described in sections 15.1–15.2). A balanced complex predicate strategy is a strategy in which the stative predicate is expressed like the predicate in a simple predication, inflections and all. Example (15) from Muna illustrates the coordinate (balanced) personal strategy (van den Berg 1989:185; cf. Loeb-Diehl 2005:22):

- (15) ne-rimba no-tende
 3SG.RL-be_fast 3SG.RL-run

'He runs fast.' [lit. 'He is fast (and) he runs']

In addition to being coordinate, the manner property ('fast') is grammatically predicated of a participant – that is, it indexes the runner. In this respect, the morphosyntactic structure reflects a semantic structure that is characteristic of depictives rather than manner expressions. A plausible hypothesis is that this strategy, and other indexed strategies in the same column of Table 14.2, actually originated with depictive complex predicates, and then was recruited by the manner complex predicate construction.

Since the coordinate personal strategy involves essentially two separate predictions rather than a single complex predication, Schultze-Berndt and Himmelmann (2004) do not consider such constructions as depictive complex predicates. However, Loeb-Diehl also includes the serial verb strategy, both non-incorporated and incorporated (see section 13.2), under the coordinate personal strategy. The non-incorporated strategy is illustrated in example (16) from Hawaiian (Elbert and Pukui 1979:49; cf. Loeb-Diehl 2005:59):

- (16) ua pā‘ani hau‘oli nō lākou
 PFV play be_happy quite 3PL

'They played quite happily.'

The serial verb strategy is a common "across-the-board" strategy for all three types of stative complex predicates (Verkerk 2009a:35–56). Obviously, this involves the broadening of the definition of the serial verb strategy to apply to

stative as well as eventive complex predicates. A language that uses the serial verb strategy for all three types of stative secondary predicates is Lao. Examples (17)–(19) illustrate the Lao serial verb strategy for manner, depictive and resultative complex predicates, respectively (Verkerk 2009a:51, from Enfield 2007:398, 404, 412; 0 = unstressed; CT = Class Term):

- (17) man₂ kin₃ paa₃ nii₄ vaj₂
3 eat fish DEM fast
'He ate this fish fast.'
- (18) man₂ maw₂ maa₂ huan₂
3 drunk come house
'He came home drunk.'
- (19) khooj₅ kin₃ mak_{0-muang}₁ qim₁ leew₄
1 SG eat CT-mango full PF
'I've eaten my fill of mangoes.' [lit. 'I eat mangoes full']

The property predication in the coordinate personal strategy recruits the action predication – that is, verb – construction. Loeb-Diehl, following Stassen (1997), characterizes this pattern as a “verby” strategy for property predication (see section 10.3). The following three strategies also involve “verby” stative complex predicate forms.

The **coordinate impersonal strategy (str)** also treats the manner element as a separate, coordinated predication, but in this case the manner property is predicated of the event, not the participant, as in example (20) from Koasati (Kimball 1991:488; cf. Loeb-Diehl 2005:25):

- (20) ca-conoska-k palk-á:ho:si-n bókl
1 SG.POSS-heart-SBJ be_fast-ADV-DS beat
'My heart is beating very fast.' [lit. 'My heart is fast and beats']

In (20), the different-subject marker (glossed DS) on ‘be fast’ indicates that speed is predicated of an entity different from the subject of ‘beats’ (see section 15.2.3); that is, ‘be fast’ is predicated of the beating event, not the person’s heart. Hence, this strategy does match the event-oriented semantics of manner adverbials. A plausible hypothesis, then, is that this strategy – and the other non-indexed strategies in the same column of Table 14.2 – originates with manner complex predicates, and their use with other stative complex predicates with participant-oriented semantics is an instance of recruitment. That is, where such strategies are found with depictive complex predicates, then the strategy was presumably recruited from manner complex predicates. However, Schultze-Berndt and Himmelmann give no examples of the coordinate impersonal strategy with depictive complex predicates.

In the **participial strategy (str)**, the ‘verby’ property predicate is expressed using a **deranked strategy (str)**. In the deranked strategy, the predicate in the complex predicate or complex sentence construction is distinct from the

predicate in the simple predication construction. In particular, the deranked predicate (i) lacks the inflections of the predicate, (ii) uses different inflections from the predicate, (iii) has an affix that overtly codes its relation to the other predicate, or some combination of these three possibilities (see sections 12.4.2, 15.2.3). Example (21) from Sanuma illustrates the participial strategy (Borgman 1990:34; cf. Loeb-Diehl 2005:26; REP = Repetitive):

- (21) te uli paimö ha opi-i a kali-palo-ma
 3SG forest overgrown where **be_slow-REL.SS** 3SG work-REP-CMPL
 'He worked slowly where the forest was overgrown' [lit. 'being slow, he worked']

The overt deranking suffix *-i* (REL = 'Relative Marker/Participial Formator') is a same-subject (abbreviated SS) suffix, indicating that the grammatical subject of 'be slow' is the same as the subject of 'work' (see section 16.4). That is, being slow is predicated of the worker, not the event of working. Hence, this is an indexed strategy.

Schultze-Berndt and Himmelmann describe this strategy for depictives (Schultze-Berndt and Himmelmann 2004:98–106). They call it the "converb" strategy, but the forms they discuss all index a participant, and so are instances of Loeb-Diehl's participial strategy, not her converb strategy (described below). All of Schultze-Berndt and Himmelmann's examples are of deverbal forms, rather than underived stative predicates, including the Kayardild example in (22) (Evans 1995:333; cf. Schultze-Berndt and Himmelmann 2004:103):

- (22) nga-l-da wara-tha niwan-ji dara-thirri-n-ji
 1-PL-NOM send-ACT 3SG-OBJ **break-RES-NR-OBJ**
 'We sent him away circumcised (lit. broken).'

The stative predicate describes a result state and is derived from the verb *dara* 'break.' This construction resembles the deranked coordinate sentence constructions to be discussed in Chapter 15, with the overt deranking suffix *-n*. In addition, the stative predicate indexes the case of the participant to whom it applies (namely, Object).

The **converb strategy (str)** as defined by Loeb-Diehl also uses a deranked predicate form for the manner expression, but there is no participant indexation. Example (23) from Turkana is an instance of the converb strategy (Dimmendaal 1983:379; cf. Loeb-Diehl 2005:27):

- (23) è-pès-e-tè ni-a-ron-o-nj
 3-kick-A-PL REL.N-INF-be **bad-SG-REL**
 'They kick him badly.' [lit. 'They kick him, it being bad']

The relative form for 'be bad' is Neuter, not Third Person Plural, indicating that it indexes the event, not the participants.

The next four strategies all involve property/stative predicates that are not what Loeb-Diehl calls "verby" – that is, they do not recruit the verb form in the action predication constructions. In these strategies, the predicate uses a strategy that recruits the referring phrase construction – either the modifier or the

head – in some form. Hence it uses the inflectional categories that referring phrases have: gender, number, and case.

The **adjective personal strategy (str)** recruits a construction characteristic of modifier phrases. This strategy is motivated by the fact that manner is a stative relational concept, like the property concepts that function as prototypical modifiers (see section 2.1). Hence the adjective personal strategy employs strategies typical of adjective (property modification) constructions – in particular, indexation of number, gender, and/or case. The adjective personal strategy in particular indexes a participant of the event, not the event itself, and so is an indexed strategy.

The adjective personal strategy is rare but is found in Latin, among other languages (Loeb-Diehl 2005:30, from Vroom 1938:74):

- (24) mendicus a me tristis stipem petivit
 beggar:NOM.SG.M from me **sad:NOM.SG.M** gift:ACC ask:PF.3SG
 ‘The beggar asked me sadly for a gift.’

The predicate *tristis* ‘sad’ indexes the subject argument in case, number and gender.

As with the coordinate personal strategy, the adjective personal strategy is a prototypically depictive strategy (when the stative predicate is not “verby”). An example of a depictive complex predicate using the adjective personal strategy in Gooniyandi is found in (25) (McGregor 1990:345; cf. Schultze-Berndt and Himmelmann 2004:82):

- (25) gardlooni wangmadda-ngga
 I.hit.him **mad-ERG**
 ‘I hit him angry.’

As Loeb-Diehl notes, this strategy is recruited for manner complex predicates in some but not many languages. When used for the event-oriented stative predicate of manner, the participant it indexes does not fit its semantics, and sometimes is unexpected, as in example (26) from Tsakhur (Croft 2001:211, from Elena Kalinina, pers. comm.):

- (26) ma-na za^ffa sa<r>k'ył t'uflı-bi-shi-lqa
 this-AT woman.CL2 <CL2>turn.PFV shoe-PL-OBL.PL-LOC
 a^flh-a:-nga^f ibrehim-pashe javash=ba sumk'a
 go-IPFV-TEMP Ibrahim-Pasha quiet=ADV.CL3 handbag.CL3
 alja<p>t'-u qyzych'-u wo=r
 <CL3>take-PFV go_out-PFV FOC=CL1
 ‘When this woman turned back and went to fetch the shoes [lit. went for/ after the shoes], Ibrahim-Pasha quietly took the handbag and went out.’

In (26), the manner stative predicate *javash* ‘quiet’ indexes the handbag because the handbag is in the Absolutive Case, not because of any special semantic relationship between the manner and the handbag.

The **adjective impersonal strategy (str)** is like the adjective personal strategy in recruiting an adjective construction. In the adjective impersonal strategy,

there is no indexation of an event participant. This strategy is, unsurprisingly, more widespread for manner expressions. The predicate is either in an uninflected form, as in example (27) from Manchu (Loeb-Diehl 2005:31, from S. Georg, pers. comm.), or in a default form indicating that the modifier does not index anything, such as the Neuter form in example (28) from Swedish (Loeb-Diehl 2005:31, from Jan Anward, pers. comm.):

- (27) sargan jui hocikon ucuile-he
female child **beautiful** sing-PST.VN
'The girl sang beautifully.'

- (28) hon sjungur vacker-t
she sing.PRS **beautiful-N**
'She sings beautifully.'

The **copular participle strategy (str)** is "adjectival" in that the stative predicate is combined with a copula rather than being inflected directly. The copular participle strategy involves a deranked form, but a deranked form of the copula, combined with an "adjectival" (that is, nonverbal) form of the manner predicate. Loeb-Diehl states that the strategy is rare and the copular participle form is often affixed to the manner predicate, as in example (29) from Malayalam (Asher and Kumari 1997:112; cf. Loeb-Diehl 2005:32; see also section 14.3):

- (29) aval bhamgiy-aayi prasamgiccu
she **beauty-PTCP.COP** speak.PST
'She spoke beautifully.'

Loeb-Diehl categorizes this strategy as "participant-oriented," although sometimes a different-subject (i.e., "event orientation") interpretation is possible (Loeb-Diehl 2005:165–66).

In the **adpositional strategy (str)**, the property/stative predicate is expressed with a flag just like a referring phrase, either in the basic lexical form as in example (30) from Mordvin (Loeb-Diehl 2005:33, from Bernhard Wälchli, pers. comm.), or in a nominalized form as in example (31) from Malayalam (Asher and Kumari 1997:215; cf. Loeb-Diehl 2005:34):

- (30) t'ejt'er-es mor-i mazi-ste
girl-DEF sing-PRS.3SG **beautiful-EL**
'The girls sing beautifully.'

- (31) avan ulsaahatt-ooṭe jooli ceytu
he **enthusiasm-COM** work do.PST
'He worked enthusiastically/with enthusiasm.'

The adpositional strategy expresses the manner property in a rather unusual way for what is supposedly an element of a complex predicate: it is expressed in the same form as a participant role in the event – namely, in a similar way to an oblique argument phrase with case marking. The adpositional strategy is the commonest

strategy for manner expression of the ten strategies in Table 14.1, albeit largely as a secondary strategy to one of the other strategies (Loeb-Diehl 2005:33).

The adpositional strategy is also found with depictive complex predicates, as in example (32) from Japanese (Schultze-Berndt and Himmelmann 2004:89, from Takezawa 1993:50):

- (32) John-ga sakana-o hadaka-de tabe-ta
 John-NOM fish-ACC **nude-INS** eat-PST
 ‘John ate the fish nude.’

It seems clear from the crosslinguistic data that properties associated with predicates are not clearly or obviously conceptualized as belonging on one side or the other of the reference–predication divide.

The flag found in the adpositional strategy most typically recruits the comitative case, as with the Malayalam example. If manner is construed as a “participant,” then it is antecedent to the object (see section 6.2.1) since it is simultaneous with the action, and the flag is usually antecedent (comitative, instrumental, elative [‘out of’], locative; see section 6.2.1). There are exceptions, though, which will be discussed below.

Schultze-Berndt and Himmelmann also illustrate a somewhat different strategy for depictive complex predicates than the simple adpositional strategy just described for manner complex predicates. We will call it the **adpositional personal strategy (str)**. The stative element in the depictive complex predicate occurs with a flag, like the adpositional strategy, but it is also indexed, like the other ‘personal’ strategies in Table 14.2. In the Russian example in (33), the stative predicate indexes the number and gender of the relevant participant (Nichols 1978:115; cf. Schultze-Berndt and Himmelmann 2004:87):

- (33) on umer molodym
 He die.PST.M.SG **young.M.SG.INS**
 ‘He died young.’

Loeb-Diehl does not comment on this strategy, so it may not occur with manner complex predicates. This is not entirely surprising, since the “participant-oriented” morphosyntax suggests that it originates with stative complex predicate constructions that describe participant-oriented states.

The last two strategies are more unusual. In the **predicational strategy (str)**, the manner expression is the main predicate, and it is predicated of the associated event, which is encoded as a nominalized or subordinate form acting as the subject of the manner predicate. Example (34) from Mokilese illustrates the predicational strategy for a manner stative complex predicate (Harrison 1976:167; cf. Loeb-Diehl 2005:212):

- (34) ah kijou dahr
 his run **fast**
 ‘He runs fast.’ [lit. ‘his running is fast’]

The predicational strategy is rare. It basically reverses the primary vs. secondary status of the complex predicate. It is perhaps the most clearly event-oriented of the strategies found, however.

Finally, the **adverbial strategy (str)** uses a distinct and unique morphosyntactic form of the manner expression to express manner complex predicates. Commonly, the construction involves an affix to the manner predicate, as in most English manner adverbs:

- (35) The girl sang beautiful-ly.

The adverbial strategy appears to represent a highly grammaticalized version of other strategies, often unidentifiable etymologically. The most common sources appear to be old flags, essives ('as') and similatives ('like'), and emphatic markers (Loeb-Diehl 2005:205–10). English *-ly* appears to be derived from Old English *līc* 'body' (Loeb-Diehl 2005:36), while French *-ment* is derived from Latin *mens* 'mind' (Price 1971:156). Schultze-Berndt and Himmelmann note the use of essive marking for depictive secondary predication as well, as in example (36) from Estonian (Schultze-Berndt and Himmelmann 2004:86, from Lutkat and Hasselblatt 1993:192):

- (36) ta läks koju rõõmsa-na
3SG go.PST.3SG house.ILL happy-ESS
'She went home happy.'

Schultze-Berndt and Himmelmann include essives with object concept expressions, specifically role and life-stage object words, as depictive secondary predicates. Examples (37)–(38) are also from Estonian (Schultze-Berndt and Himmelmann 2004:86, from Lutkat and Hasselblatt 1993:192):

- (37) minu mees töötab arsti-na
1SG.GEN husband.NOM work.PRS.3SG doctor-ESS
'My husband works **as a doctor**.'

- (38) poisi-na mängisin jalgpalli
boy-ESS play.PST.1SG football.PRTT
'As a **boy**, I played soccer.'

Schultze-Berndt and Himmelmann give examples of role/life-stage depictive phrases using the adjectival personal, copular participle, and adpositional strategies (in Loeb-Diehl's terms). Himmelmann and Schultze-Berndt (2005:29–50) offer a fine-grained conceptual space of a wide variety of functions related to depictive complex predicates.

14.3 Stative Complex Predicates and the Modification–Predication Continuum

Loeb-Diehl identifies two other interesting subtypes of manner complex predicate constructions. First, the adposition strategy is sometimes found with a flag recruited from a subsequent case (see section 6.2.1) – that is, the

manner expression is coded with a flag expressing allative, dative or a similar function (see also Croft 1991a:196). An example of subsequent flagging in Kanuri is given in (39) (Cyffer 1974:52; Loeb-Diehl 2005:64):

- (39) fər dōi-rō sàgash̫in
horse quick-to walks
'The horse goes quickly.'

Loeb-Diehl argues that these markings are the consequence of a resultative complex predicate construction being recruited for manner complex predicates (Loeb-Diehl 2005:63–65). Since result states follow the event in time, the use of allative or similar flagging encodes that temporal sequence, as in the English example in (40):

- (40) The explorers froze to death.

Loeb-Diehl also notes two other manner constructions that might have been recruited from a resultative secondary predication construction. The first employs a copular participle strategy with a copula meaning 'become' (rather than the expected 'be') in certain Dravidian languages (Loeb-Diehl 2005:63–65; see also the examples from Jabêm in Verkerk 2009a:39). In example (29) in section 14.2 from Malayalam, the suffix *-aayi* is the past participle of *aakuka* 'become'; the sentence is literally 'She spoke having become beautiful' (Loeb-Diehl 2005:65).

The second interesting pattern is that a number of constructions involve a causative form of the manner stative component. This is found in the coordination strategy, as in example (41) from Oromo (Hodson and Walker 1922:99, glossed in Loeb-Diehl 2005:69); in the copular participle strategy (with 'do' rather than 'be' according to Loeb-Diehl; no examples are given); and even in the predicational strategy (also with 'do') as in example (42) from Jakaltek (Craig 1977:334):

- (41) ini jab-eis-ei hōjetei
3SG.M be_strong-CAU-3SG.M.AOR work.3SG.M.AOR
'He worked hard.'

- (42) c'ul ma-y-u ha-cañalwi
well ASP-3SG.ERG-do 2SG.ERG-dance
'You danced well.'

Loeb-Diehl proposes that using a causative form makes a "participant-oriented" construction into an "event-oriented construction" (Loeb-Diehl 2005:68–71). In other words, (41) and (42) are literally 'he works; he causes it to be hard' and 'your dancing makes (it) good,' respectively.

However, it is also possible that the causative strategy in examples (39)–(42) originates with the resultative construction, in which the result state is caused by the action denoted by the event predicate. Verkerk gives an example from

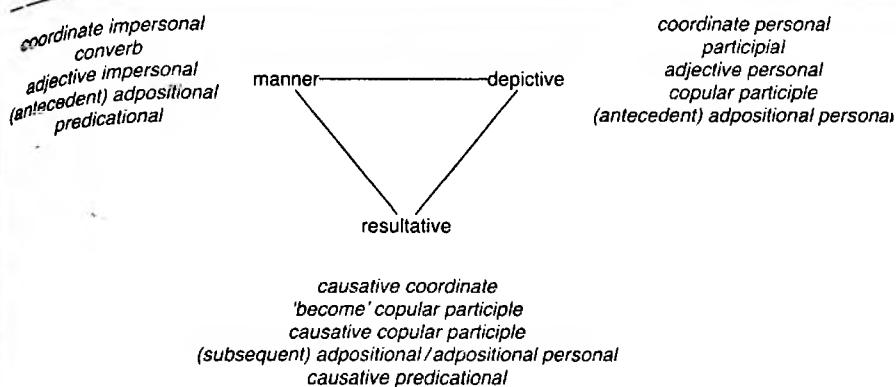


Figure 14.1 *The conceptual space for stative complex predicates, including hypothesized source of the stative complex predicate strategies*

Samoan in which the resultative, but not the manner or depictive, uses a causative form of the property predicate (Mosel 2004:276; cf. Verkerk 2009a:37; TAM = Tense–Aspect–Modality Marker):

- (43) ...e fa'a-aogā e lamu fa'a-malū ai mea 'ai
 TAM CAU-used TAM chew CAU-soft ANA thing eat
 '(molars are broad and big teeth) which are used to chew the food soft.'

Verkerk (2009a,b) argues that all three types of stative complex predicates recruit strategies from each other, and proposes a conceptual space in which resultative, depictive, and manner complex predicate meanings are linked to each other. Verkerk's conceptual space is presented in Figure 14.1.

Figure 14.1 contains all of the strategies listed in Table 14.2. Unlike Table 14.2, the conceptual space in Figure 14.1 situates the different stative complex predicate strategies at their likely source in a depictive, manner or resultative function. The "participant-oriented" (indexed) strategies are located at the depictive node; the "event-oriented" (non-indexed) and antecedent flagging strategies are located at the manner node; and what we might call the "result-oriented" causative and subsequent flagging strategies are located at the resultative node.

In all three types of stative complex predicates that have been discussed so far, and placed in the conceptual space in Figure 14.1, it is assumed that, in terms of information packaging, the eventive component is the primary predication and the stative component is a "secondary" predication. We have seen that, in terms of morphosyntax, this is not always the case. The "verby" strategies package the eventive and stative components as separate predictions, and the predicational strategy packages the stative component as the sole primary predication, with the event concept packaged as its argument. Nevertheless, there are numerous strategies, some of them common, which package the

stative component as part of a complex predicate, or even like an argument of the predicated event.

Thus, the stative component of a stative complex predicate is often expressed in a way that suggests that it is not as fully a predication as the dynamic component. The dynamic component is an action, of course, and so fits the prototype for the primary predication in a clause. But there is also evidence that there is a continuum from predication to modification – that is, a continuum of ways of packaging the stative component from more like a predication to more like a modifier, including a modifier as part of an argument phrase.

Van der Auwera and Malchukov (2005) propose a conceptual space that links depictive complex predicates and manner complex predicates to other property/stative functions by virtue of the recruitment of constructions for multiple functions. The additional property concept functions that van der Auwera and Malchukov consider are property predication, two types of property modification, and a property complement function.

Van der Auwera and Malchukov distinguish between **restrictive modification (*inf*)** and nonrestrictive or **appositive modification (*inf*)** (van der Auwera and Malchukov 2005:404):

- (44) The **angry** young men left the party.

In restrictive modification, generally considered to be the typical modification function, *angry* defines a proper subset of the set of young men relevant in the discourse. In appositive modification, *angry* simply adds a further description to the set of young men relevant in the discourse; it does not restrict the set to a proper subset.

Van der Auwera and Malchukov also describe a **complementative (*inf*)** function for stative concepts (also sometimes called a predicative complement). This function depends on the main predicate – if the main predicate requires explicit specification of the property, then it is complementative, as in (45):

- (45) a. I consider John **intelligent**.
 b. *I consider John.

If the property is not required, then it is depictive (van der Auwera and Malchukov 2005:406–7), as in (46):

- (46) a. I ate the carrots **raw**.
 b. I ate the carrots.

Van der Auwera and Malchukov draw on a 15-language sample to hypothesize a conceptual space to account for the occurrence of stative predicate constructions shared across different functions (van der Auwera and Malchukov 2005:411). Their conceptual space is incorporated into the conceptual space represented in Figure 14.2.

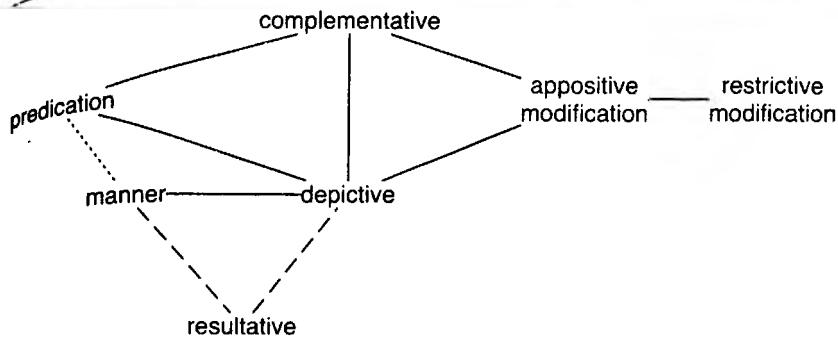


Figure 14.2 *The modification–predication continuum*

The solid, dashed, and dotted lines indicate co-expression patterns observed by different scholars. The solid lines indicate the co-expression patterns observed by van der Auwera and Malchukov. Van der Auwera and Malchukov did not include resultative complex predicates in their conceptual space. Verkerk links resultatives to depictives and manner; they are indicated in Figure 14.2 using dashed lines. We do not know if the resultative and depictive functions are linked directly to the functions (other than manner) in Figure 14.2. Finally, van der Auwera and Malchukov did not observe co-expression of manner and predication in their sample; but Loeb-Diehl observed co-expression of manner and main clause predication in the predicational strategy, as in example (34) in section 14.2. The predicational strategy is indicated by a dotted line from manner to predicate in Figure 14.2.

Figure 14.2 displays the functions in this conceptual space as a continuum between modification on the right and predication on the left, which we will call the **modification–predication continuum**. Restrictive modification is essentially the prototypical information packaging function of modification: providing more restrictive information for the discourse file of the referent, usually when the discourse file is being set up (this is most likely when the referent is introduced into the discourse). Appositive (non-restrictive) modification adds more information to the discourse file of the referent without restriction, which makes it more like adding information, as in predication.

Morphosyntactically, appositive modification also combines with a referring phrase. The complementative and depictive functions still add the property to the discourse file of a referent that is a participant in the event – that is, they are participant-oriented – but the property is more clearly asserted. Perhaps by virtue of being an assertion, the complementative and depictive properties are expressed morphosyntactically in a separate unit from the referring phrase; we therefore analyze the stative expression as part of the complex predicate. However, by virtue of being stative, the complementative and depictive properties are still secondary as predication in comparison to the usually dynamic primary predicate: for example, in (46a) *raw* is stative but *eat* is dynamic. The resultative

function is also participant-oriented and stative, but is also at least as clearly asserted as the depictive and complementative function.

Finally, the property in the manner function is also stative in comparison to the dynamic component of the complex predicate construction. But the manner property is more clearly associated with the event, as it is event-oriented (in the semantic sense). Perhaps for this reason, manner appears to be more likely to be expressed as an equal predication or a primary predication.

14.4 Ideophones and Stative Complex Predicates, and 'Manner' Revisited

Ideophones (*str*), also called mimetics, are phonologically distinctive words, in which there is argued to be some sort of sound-symbolic relationship between the phonological form and their meaning. Thus, ideophones are a strategy in which the phonological form, not (just) the morphosyntactic form, is part of its definition. Perhaps the most common function – but not the only function – that ideophones express is the stative component of a stative complex predicate (they are probably next most commonly used as property predication or as property modifiers in referring phrases). For this reason, ideophones are described in this chapter.²

Two descriptions of this difficult to describe category – one early, one recent – are given below:

A vivid representation of an idea in sound. A word, often onomatopoeic, which describes a predicate, qualificative or adverb in respect to manner, colour, sound, smell, action, state or intensity. (Doke 1935:118)

[M]arked words depictive of sensory imagery. (Dingemanse 2012:654)

The distinctive phonological traits of ideophones can be illustrated with examples of the semantic classes most closely associated with expression as ideophones. Akita (2009) presents a hierarchy of concepts that are more vs. less likely to be expressed as ideophones. **Phonomimes** (*str*) are ideophones expressing a property of sound emission, as in Japanese *potapota potapota* ‘dripping’ (Akita 2009:194). **Phenomimes** (*str*) are ideophones expressing a property of movement, visual appearance or light emission, texture or taste, as in Siwu *wùrùfù* ‘fluffy’ (Dingemanse 2011:192), or Emai *yéyéyé* ‘quiver’ in (47) (Schaefer 2001:343; sc = Subject Concord):

- (47) óli áfiánmí ó o guo yéyéyé²
 the bird SC HAB shake with_a_quiver
 ‘The bird quivers.’ [lit. ‘shakes with a quiver’]

² This section is partly based on a presentation by Kaitlin Bone, Laura Hirrel, David Páez, and Joshua van Laningham to a seminar on complex predicates offered at the University of New Mexico in 2013.

Finally, **psychomimes** (*str*) are ideophones expressing an experiential property such as bodily sensation or emotion, as in Japanese *kurakura* 'dizzy'; *ukiuki* 'feeling happy and lighthearted' (Akita 2009:13).

Perhaps the most distinctive phonological characteristic of ideophones is the use of reduplication, partial or complete, illustrated in most of the examples above. Ideophones are often thought of as phonologically distinct from other words in the language (cf. Dingemanse's definition), but Newman (2001) argues that ideophones are language-specific in their phonological form – that is, they tend to follow the same phonological patterns as other words in the language, even though they are sound-symbolic to some extent.

Grammatically, ideophones are sometimes not integrated into the syntactic constructions of the language. The Siwu ideophone in (48) is described as 'aloof ... from the rest of the utterance' and higher in pitch (Dingemanse 2011:38; ; KA = *ka*-Class):

- (48) bo kagbàmíkù gángbe ne, ka-ɔ-lo-ma
 1PL area REL.KA:here TOP, ring-3SG.TOP-silence-3PL
 ↑kanana.nananana↑
 silent.EMPH4

'As for the neighborhood, it silenced them *kanananananana!*'

If ideophones are integrated into constructions, it is usually as the secondary member of a complex predicate, although they may also appear as the sole predication, as in example (49) from Japanese (Akita 2009:164):

- (49) kono pan-wa huwahuwa-da
 this bread-TOP fluffy-COP
 'This bread is fluffy.'

As parts of complex predicates, ideophones can play the role of all three types of secondary predicates described in this section. Ideophones may function as depictives – namely, participant-oriented and simultaneous with the event denoted by the main verb, as in example (50) from Hausa (Himmelmann and Schultze-Berndt 2005:59, from Jaggar 1992:92):

- (50) naa gan shì tik, haihùwar uwarsà
 1SG.PST see 3sgM.OBJ stark_naked birthgiving:POSS mother.3SGM.POSS
 'I saw him naked as the day he was born.'

Ideophones may also function as resultatives, describing a resulting state, as in (51) from Japanese (Akita 2009:164):

- (51) mai-wa pan-o huwahuwa-ni yai-ta
 Mai-TOP bread-OBJ fluffy-COP bake-PST
 'Mai baked the bread fluffy.'

Ideophones may also be used for the so-called 'spurious resultatives' (see section 14.1) that may also be expressed in English by manner adverbs. Example (52) from Emai is an instance of a 'spurious resultative' expressed by an ideophone (Schaefer 2001:349):

- (52) ó kókó éó gbáíngbáin
 3SG close eye **tightly**
 ‘He closed his eyes tight(ly).’ [Schaefer translates it as ‘He tightened his eyes’]

Finally, ideophones may also express manner, as in (53), also from Emai (Schaefer 2001:342):

- (53) ó o hian oí dúdudú
 3SG HAB cut it **energetically**
 ‘He cuts it [wood] energetically.’

However, the ‘manner’ function of ideophones as secondary predicates is frequently only translatable into English – to the extent that it is translatable at all – as a dynamic ‘manner,’ as described in section 7.3.1 on manner and path of motion. The manner of motion ideophone *bébébé* in example (54) from Emai (Schaefer 2001:347) is translated with the English manner of motion verb *flit*:

- (54) ólí ómóhé láí bébébé
 the man run-F **at_a_flit**
 ‘The man flitted off.’

The manner of motion ideophone *barabara* in example (55) from Japanese (Akita 2009:58, from Mikami 2006:206) does not really have a good translation in English:

- (55) gake-no ue-kara koisi-ga barabara oti-te ki-ta
 cliff-GEN top-from pebble-NOM “**scatteringly**” fall-CONJ come-PST
 ‘Pebbles came falling scatteringly [*sic*] from the top of the cliff.’

The manner of motion ideophone *b^huxx b^huxx* in example (56) from Quechua is described as ‘emerging from underwater with a forceful burst’ (Nuckolls 2001:274; COR = coreference):

- (56) sika-sha ri-shka-una chi bugyu-guna hanak-ta
 climb-COR go-PFV-3PL that dolphin-PL upriver-ADV
b^huxx-b^huxx l^yukshi-sha
b^huxx-b^huxx emerge-COR
 ‘Climbing upriver, those dolphins went, emerging *b^huxx b^huxx*.’

Even the manner expression in the English translation of example (53), *energetically*, is a derived adverb form in English that describes a dynamic trait of the action described by the main verb *cut*. And even the prototypical manner concepts of speed (‘fast,’ ‘slow’) and quality (‘well,’ ‘badly’) are properties only because they conceptualize some dynamic trait, e.g. speed, holistically across the time interval of the event. In other words, it appears that the manner in which an action is performed may be construed statively, as in stative complex predicates, or dynamically, as in a manner verb. It is unclear whether ideophones construe manner statively or dynamically – or perhaps ideophones do not impose any aspectual construal on manner.

14.5

Motion Events as Complex Predicates: The Talmy Typology Revisited

In this section, we return to the expression of motion events first discussed in section 7.3.1. The expression of motion events often employs a complex predicate strategy. An early classification of strategies for motion complex predicates, the Talmy typology, has influenced much later research, both semantic and crosslinguistic, on the expression of this semantic class of events. We described the Talmy typology in section 7.3.1, focusing on the realization of the ground object as an object or an oblique argument of the motion verb, and the associated question of whether the path of motion is expressed as the main predicate or as part of the oblique argument phrase. Here we will return to the question of the expression of the motion event itself in light of the survey of complex predicates in this chapter and the previous one.

Talmy proposes a detailed semantic decomposition of a motion event. We illustrate it here with an example of a motion event expressed in English in (57):

- (57) He **ran** into the cave.

Talmy's decomposition of a motion event:

- (i) the fact of *motion* itself
- (ii) the *manner* of motion (here, running)
- (iii) the *path* of motion (a trajectory from outside the cave to inside the cave)
- (iv) the *figure*, that is, the moving object (a person)
- (v) the *ground*, that is, an object that serves as a reference point for the path of motion (the cave)

In section 7.3.1, we described strategies for expressing the figure and the ground in the argument structure construction associated with the motion event – that is, components (iv) and (v) of Talmy's decomposition. In (57), the verb expresses the manner of motion – component (ii) – and the oblique flag expresses the path of motion – component (iii).

As described in section 7.3.1, Talmy (1972, 1974) presents two different strategies for the expression of motion events. One is typically used in English, as in (57), and the other is typically used in Spanish, as in (58) (Talmy 1985:111):

- (58) entró corriendo a la cueva
enter.3SG.PST run:PTCP to the cave
 ‘He ran into the cave.’ [lit. ‘He entered the cave running’]

The English sentence in (57) is an example of what Talmy originally called the ‘manner-incorporating’ strategy (see section 7.3.1): the verblike form expresses the motion event and incorporates the manner of motion, while the

other element, the satellite, expresses the path of motion. The figure and ground are expressed in argument phrases. The Spanish sentence in (58) is an example of the ‘path-incorporating’ strategy: the verblike form expresses the motion event and incorporates the path of motion, while the satellite, here a deranked form of a verb, expresses the manner.

Talmy’s original classification of strategies for expressing motion events included a third strategy, which he called the **figure-incorporating strategy (str)**. In the figure-incorporating strategy, the verblike element incorporates information about the semantic type of the figure, as in the Atsugewi example in (59) (Talmy 1985:74):

- (59) w'ost'aq'ík:a
 '-w-uh-st'aq'-ik:-^a
 3SG-3SG-by_gravity-lie_runny_icky_material-on_ground-3SG
 'Runny icky material [e.g. guts] is lying on the ground.'

This strategy has not been discussed very widely in later analyses of motion events. It could be argued that this strategy is a subtype of the manner-incorporating strategy, not unlike English *Hot tar oozed down the driveway*. This is because manner specification often implies the semantic type of the figure, and the semantic type of the figure constrains its possible manners of motion (Croft 1994a:159–60).

Talmy’s original classification of the strategies for motion events – manner-incorporating, path-incorporating, figure-incorporating – refers only to the verblike element: which semantic component of (ii)–(iv) is “incorporated” into the predication of motion itself – that is, component (i). Talmy later altered his typological classification of complex predicates in terms of where the path – or, more generally, result state – is expressed in the construction (see section 7.3.1). The manner-incorporating strategy was reanalyzed as the satellite-framing strategy, where the path/result is expressed in the satellite, as in example (57). The path-incorporating strategy was reanalyzed as the verb-framing strategy, where the path/result is expressed in the verblike element, as in (58). (The figure-incorporating strategy is not included in the new analysis.)

Talmy’s new analysis groups together satellites expressing path of motion with resultative complex predicates such as *The pond froze solid* or *They painted the door red* (see section 14.1). Likewise, Rappaport Hovav and Levin (2001) also group together path satellites with resultative complex predicates in their analysis of resultative constructions in English. On the other hand, Croft et al. (2010) argue that a comparison of different event types, both nonmotion and motion events, across five languages (English, Icelandic, Dutch, Bulgarian, and Japanese) suggests that motion events should be treated separately from nonmotion events in describing their likelihood to be conceptualized as a single event using a complex predicate construction. For these reasons, the discussion in this section is restricted to motion events.

Returning to the expression of motion events as complex predicates, we now revisit the remarks on the nature of manner at the end of section 14.4. There it was suggested that ‘manner’ can be construed as a property of a dynamic event (an action), i.e. as semantically stative; or it can be construed as the dynamic event itself, i.e. as semantically dynamic. If so, then motion events expressing both manner and path might be expected to employ strategies found with both eventive and stative complex predicate constructions.

And that is true. The path-incorporating strategy illustrated in Spanish in (58) involves a converb stative complex predicate strategy. The path is expressed as the primary predication, with all of the usual inflections of a simple predicate. The serial verb complex predicate strategy is also found for expressing motion events (Croft 2003:222; see also Slobin 2004:228; Zlatev and Yanklang 2004; Croft et al. 2010), as in (60) from Lahu (Matisoff 1969:82, 70) and example (61) from Thai (Zlatev and Yangklang 2004:160):

- (60) njà-hi g̩a q̩? ch̩i t̩? p̩i ve
 1-PL get return lift come_out give NR
 ‘We had to lift (it) out again [‘return’] for (them).’

- (61) chán d̩ən khāam thanōn khāw paj naj sūan
 I walk cross road enter go in park
 ‘I walked across the road and into the park.’

Of course, motion events need not express more than one of the semantic components. Even in English, a manner-incorporating language, one can avoid expression of manner by using *go* combined with an uninflected path satellite: *The balloon went up*. In path-incorporating languages such as Spanish, manner need not be expressed, and, in fact, appears to be expressed much less often than in English (Slobin 2004).

Wienold (1995) proposes that languages that express path in a satellite, such as English and German, have a large number of verblike manner expressions (cf. Slobin 2004:237). We can interpret this as expression of manner as a dynamic event. In contrast, with languages that express path in a verblike form, such as Japanese, Korean, and Thai, there are few verblike expressions of manner. Instead, there are many expressions of manner as stative complex predicates (that is, “adverbs”) or ideophones. We can interpret this as expression of manner as a stative property, part of a stative complex predicate. Wienold does not discuss the path-incorporated type exemplified by Spanish and other Romance languages, but, as noted above, languages such as Spanish use a converb strategy, another stative complex predicate strategy. The element expressing manner may even be incorporated into a verblike path form, as in Nez Perce, where a path verb may be prefixed by one of a large set of manner of motion prefixes (Aoki 1970:87; cf. Talmy 1985:110):

- (62) wilé:welu:se
 wíle:-welu:-se
 running-go_down_to_the_river-1SG.PRS
 ‘I am running down to the river.’

Nevertheless, one should not put too much weight on the suggested alternative conceptualizations of manner as stative when path is expressed as the verb vs. manner as dynamic when manner is expressed as the verb. Motion event constructions change from one type to the other.

In languages such as English that primarily express manner as the primary predication, expression of path is often by an uninflected satellite form that is called a directional particle: *He ran in/out/up/down/etc.* Path satellites appear to be ultimately derived from verblike forms, as can be seen in the list of Mam directionals in example (63) (England 1983:167–68):³

(63)	<i>Directional</i>		<i>Verb</i>
xi	‘away from’	•	xi7 ‘go’
tzaj	‘toward’		tzaaj ‘come’
kub'	‘down’		kub’ ‘go down, descend’
jaw	‘up’		jaaw ‘go up, ascend’
el	‘out’		eel ‘exit’
ok	‘in’		ook ‘enter’
kyaj	‘remaining’		kyaj ‘remain’
iky'	‘passing’		iky’ ‘pass by’
ul	‘there to here’		uul ‘arrive here’
pon	‘here to there’		poon ‘arrive there’
aj	‘returning from here’	aaaj	‘return’

Directional particles may then be combined with a general motion verb, as with English *go*. Directional particles may then fuse with a general verb, or even a manner of motion verb, and become simple path verbs. This is how some of the English and Romance path verbs ultimately originated: English *exit* < Latin *exitus*, past participle of *ex + ire* ‘out + go’; Middle English *ascend* < Latin *ascendere* [*ad + scandere* ‘toward + climb’]; English *descend* < Old French *descendre* < Latin *descendere* [*dē + scandere* ‘down + climb’].

Another endpoint for path expressions when manner is expressed as the sole predication is as flags in oblique argument phrases. As noted in section 7.3.1, Talmy’s original classification excludes adpositional phrases with an overtly expressed ground from the category of satellites, and includes only constructions such as *He ran in*, which are more clearly complex predicates. But, as we observed in sections 4.3 and 13.3.1, oblique adpositions are often at the end of a grammaticalization path from eventive complex predicates, and one cannot draw a sharp line between an element of a complex predicate and a relational element associated with an argument phrase.

For this reason, adpositional phrases are described as satellites as well (see section 7.3.1; Beavers et al. 2010; Croft et al. 2010). However, this leads to an analytical problem: the flag is part of an oblique phrase, but what the flag denotes – the path of motion – is part of the event. However, this analytical problem reflects a

³ In the case of English, and Indo-European in general, the origin of directionals is too far in the past to identify their etymological source.

real typological phenomenon – namely, variation in whether the path of motion, particularly when it is not expressed as the main predication, is more closely associated with the predicate or with the argument denoting the ground.

In Russian, there is **double expression (str)** of the path, once as a flag, and again as a prefix on the predicate, which describes manner of motion (Talmy 1985:105; Bohnemeyer et al. 2007:512, 514, who call this strategy ‘double marking’; Croft et al. 2010:208 call it ‘double framing’):

- (64) Ja vy-bežal iz doma.
I out-ran from house:GEN
'I ran out of the house.'

In German, the path element may occur either as an element independent of the predicate, or as a prefix on the predicate (these are the separable prefixes; Durrell 1996:230; glosses added):

- (65) Sie geht heute abend aus
she go today evening out
'She is going out today.'
- (66) Ich weiß, daß sie heute abend aus-geht
I know, that she today evening out-go
'I know that she is going out tonight.'

These examples indicate that the expression of path can form part of a complex predicate or part of an adpositional phrase.

The last three Mam Directionals in (63) all involve a deictic component and are derived from deictic verbs of motion, in which a deictic directional semantic component is conflated. Deictic direction ('come,' 'go,' 'return') is sometimes overlooked in discussions of the complex expression of motion events, but it must also be included in describing motion complex predicates. In fact, there is a more complex typology of spatial conceptualizations, involving more than just the sort of spatial paths defined by geometric or topological features such as surface (*on*) or interior (*in*, *out*). These other conceptualizations of path involve implicit grounds, such as the implicit use of the speaker as the ground in deixis.

The Mandarin Chinese example in (67) (Li and Thompson 1981:58) illustrates a serial verb strategy including a deictic motion component, while its English translation involves a combination of a deranked strategy for manner and an uninflected strategy for path, along with the verbal form for the deictic component:

- (67) tāmen pǎo chū lái le
3PL run exit come PFV
'They came running out.'

Conversely, deictic elements that originated as obliques ('at/to/from here/there') may also be attracted to verbs and attach to them. In French, the pronominal deictic clitic *y* is derived from Latin *ibi* 'there,' and the deictic clitic *en* is derived from Latin *inde* 'thence' (Price 1971:154; glosses added):

- (68) J'y vais. J'en vais
 1SG.'there' go:1 SG.PRS 1SG.'thence' go:1 SG.PRS
 'I'm going there.' 'I went from there.'

In German, *her* 'here' and *hin* 'there' may be prefixed to the verb (Durrell 1996:139; gloss added):

- (69) Er hat mich mit dem Auto her-gefahren
 he has me with the car **here**-driven
 'He drove me here.'

Pendau has verbs of vertical motion with reference to direction relative to the earth's surface and gravity; and topographical verbs, with reference to direction relative to a topographical feature (Quick 2007:334, 267; SF = Augmenting Stem Prefix Former; PN = Proper Noun Marker):

- (70) Jimo no'umene' siina nigibang.
 jimo no'-u-mene' siina ni=gibang
 3PL.ABS RL-SF-go_up mother PN.GEN=lizard
 'Then they went up to the mother of the water monitor lizard.'

- (71) Ila Tambu ami megoisomo buut siinanyo.
 ila Tambu 'ami M-pe-gois=mo buut
 from Tambu 1PL.EXCL.ABS IRR-SF-cross=CMPL mountain
 siina=nyo
 mother=3SG.GEN
 'From Tambu then we crossed over the mother mountain.'
 [gois: 'cross over a mountain top from one side to another,' Quick 2007:264]

We conclude this section with a universal regarding the expression of path and the strategy for motion complex predicates. Bohnemeyer et al. (2007:509–17) propose a relationship between the strategy used for the complex expression of motion events and the phase of the path that is expressible in a motion complex predicate. They divide the phases of the path into **departure (sem)**, **passing (sem)**, and **arrival (sem)**, illustrated in (72) (Bohnemeyer et al. 2007:509):

- (72) The circle rolled **from the square** [departure] **past the house-shaped object** [passing] **to the triangle** [arrival] in just 30 seconds.

Bohnemeyer et al. observed that languages in an 18-language sample fell into three types, depending on what phases of the path could be expressed in a single clause with a complex predicate, defined by unity of temporal location (see section 13.2.1). The three types and the relationship between the types and the motion predicate strategy are given in Table 14.3.

Type I allows for all three phases of the path to be expressed in a single clause. Languages expressing motion events with the manner-incorporating (satellite-framing) or the serial verb strategies fall into this type. Examples (72) above and (73) below (the latter from Lao; Bohnemeyer et al. 2007:511) illustrate these two strategies:

Table 14.3 *Typological classification of languages by complex motion event strategy and by expression of path phase (Bohnemeyer et al. 2007)*

Type	Path specification in a single event	Motion event strategy	Example languages
I	departure, passing, and arrival	satellite framing / manner-incorporating or serial verb strategies	Dutch, Ewe, Lao, Marquesan, Tiriyó
II	departure and arrival only (passing only if a route-path verb is available)	double expression	Arrernte, Basque, Hindi, Japanese, Trumai
III	departure or passing or arrival only (i.e. only one path phase)	verb framing / path-incorporating or serial verb strategies	Jalonke, Kilivila, Saliba, Tidore, Tzeltal, Yéll Dnye, Yukatek, Zapotec

- (73) man² lèèn¹ (qòòk⁵) caak⁵ hùan² taam³ thaang² hòòt⁴ kòòn⁴-hiin³
 3 run exit from house follow path reach CLF-rock
 'He ran (exited) from the house, followed the path, reached the rock.'

Type II languages allow for the expression of the departure and arrival path phases in a complex predicate motion event construction, but generally not the passing phase. For example, the maximum description of the path in Japanese is illustrated in (74). The only way to express passing in a single event is if the verb itself expresses the passing event, as in (75) (Bohnemeyer et al. 2007:512–13; they call such a verb a route-path verb):

- (74) (kinoo) ki-no tokoro-kara ie-made it-ta
 yesterday tree-GEN place-ABL house-until go-PST
 '[One] went from the tree to the house (yesterday).'

- (75) Jon-wa Bei Burijji-o San Furanshishuko-kara Ookurando-ni watat-ta
 John-TOP Bay Bridge-ACC San Francisco-ABL Oakland-DAT cross-PST
 'John crossed the Bay Bridge from San Francisco to Oakland.'

Type II languages use the double expression strategy to express motion events. That is, the path is incorporated in the verblike element but path distinctions are also made in a satellite element – namely, distinct flags for departure, arrival, and passing.

Type III languages allow the expression of only one of the three path phases in a motion event construction. That is, expression of a motion event in which more than one phase of a path is expressed requires multiple clauses construing the motion event as two separate events, as in Jalonke (Bohnemeyer et al. 2007:516):

- (76) a keli wuri-n'ii', a siga (haa) gême-n'ii'
 3SG leave tree-DEF.LOC 3SG go (until) rock-DEF.LOC
 'He left the tree, (and) went as far as the rock.' [for 'He went from the tree to the rock.']}

Type III languages mostly use the verb-framing/path-incorporating strategy to express motion events, in that there is no expression of path distinctions as satellites (including flags). For example, the locative case suffix in example (76) is used for a ground phrase for all types of path (although *haa* ‘until’ may be added to the phrase expressing the arrival phase).

There is thus a strong correlation between expression of a path phase in a single clause and the strategy for expression of manner and path in a single clause in the languages in Bohnemeyer et al.’s sample. However, some of the Type III languages use the serial verb strategy, similar to some of the Type I languages. This may be evidence that the path serial verbs in the Type I languages are grammaticalizing into directional satellites, in which case they are turning into languages using the satellite-framing/manner-incorporating strategy typical of the other Type I languages.

Studies such as Wienold (1995) and Bohnemeyer et al. (2007) indicate that there may be universals constraining not only how semantic components and events are expressed in single clauses, including clauses with complex predicates, but also what semantic components can be so expressed.

Terms Defined in this Chapter

14.1 Stative Complex Predicates: Semantics

stative complex predicates (*cxn*), resultative complex predicate (*a.k.a.* resultative) (*cxn*), participant-oriented (*sem*), depictive complex predicate (*a.k.a.* depictive) (*cxn*), manner complex predicate (*a.k.a.* manner) (*cxn*), event-oriented (*sem*)

14.2 Strategies for Stative Complex Predicates

indexed (*str*), non-indexed (*str*), coordinate personal strategy (*str*), balanced strategy (*str*), coordinate impersonal strategy (*str*), participial strategy (*str*), deranked strategy (*str*), converb strategy (*str*), adjective personal strategy (*str*), adjective impersonal strategy (*str*), copular participle strategy (*str*), adpositional strategy (*str*), adpositional personal strategy (*str*), predicational strategy (*str*), adverbial strategy (*str*)

14.3 Stative Complex Predicates and the Modification–Predication Continuum

restrictive modification (*inf*), appositive modification (*a.k.a.* nonrestrictive modification) (*inf*), complementative (*inf*), modification–predication continuum

14.4 Ideophones and Stative Complex Predicates, and ‘Manner’ Revisited

ideophones (*a.k.a.* mimetics) (*str*), phonomime (*str*), phenomime (*str*), psychomime (*str*)

14.5 Motion Events as Complex Predicates: The Talmy Typology Revisited

figure-incorporating (*str*), double expression (*str*), departure (*sem*), passing (*sem*), arrival (*sem*)

PART IV

Complex Sentences



Temporal and Causal Relations between Events

Coordinate Clause and Adverbial Clause Constructions

15.1

Complex Sentence Constructions

15.1.1

Discourse and Complex Sentences

Language use frequently involves a series of clauses uttered in temporal sequence. The term ‘discourse’ is generally used to describe any size unit of language use. Discourse may be produced by one speaker or by multiple speakers. An example of discourse involving multiple speakers from the Santa Barbara Corpus is given in (1) (each line indicates a single intonation unit, ending with punctuation indicating prosodic type of the intonation unit; passages in brackets overlap with each other; numbered brackets distinguish different overlaps in this section of discourse; H = inhalation):

- (1)
 - a. LARRY: .. here [it i- here it i-] here it is right here,
 - b. SETH: [Is this the wall],
 - c. LARRY: you can see that –
(H) this is the current [wall],
 - d. SETH: [oh] okay,
so are you gonna go out [, like .. three feet or so ,],
 - e. LARRY: [, So we might --
.. we might ,] --
.. we might %= .. [, do a little modification.
 - f. SETH: [, a tape- .. tapered uh .. corners ,].
 - g. LARRY: .. A tapered , corner there.
(H) So we might do .. a little .. of that.
 - h. SETH: .. Okay.

Example (1) illustrates several features of multiparty discourse. First, there are conventional interactional expressions, such as Seth’s question *Is this the wall* in (1b), and Larry’s (sort of) answer *you can see that – this is the current wall* in (1c). These conventional interactional constructions were discussed in Chapter 12. Second, there are acknowledgments such as Seth’s *oh okay* in (1d) and *Okay* in (1h), that provide feedback to the interlocutor that the interlocutor’s contribution to the discourse was understood (Clark and Schaefer 1989). Third, and most complex, is the co-construction of certain utterances. For example, Larry starts saying *we might do a little modification* in (1e); Seth breaks in with *a tape- ..*

a tapered uh .. corners in (1f); Larry accepts and reformulates Seth's contribution as *A tapered corner there* in (1g); and Seth accepts the co-constructed utterance with *Okay* in (1h).

Example (1) illustrates both the richness and the structure of multiparty discourse. This structure has not been extensively explored across languages, and we will not discuss it in this textbook. Instead, we turn to a simpler but somewhat different type of discourse, monologic discourse – discourse primarily by a single speaker. An example of largely monologic discourse is given in (2):

- (2) SETH: a. (H) **and then**,
 b. ... **when** you add air conditioning in the future,
 c. ... all you gotta do is put the outdoor condensing unit,
 ... and refrigerant piping to that coil.
 d. ... so it .. saves --
 .. it saves= additional work in the future.
 LARRY: ... Mhm.
 SETH: e. **OTHERWISE** you gotta come back
 f. **and** put the coil in,
 g. **which** means you gotta modify the duct work,
 h. **to** [get that] coil in there so,
 LARRY: [Right].
 SETH: i. .. (H) **if** you're thinking about **doing** it in the future,
 j. you might wanna at least put the coil in.
 k. It only .. costs about three-hundred fifty dollars for the coil.

In example (2), Larry's utterances are just acknowledgments of Seth's description about putting in a furnace in such a way that it is easier to add air conditioning at a later date. If we leave aside Larry's acknowledgments, we have a monologic discourse in which Seth produces a long series of clauses. Seth's clauses are indicated by the letters a–k in (2).

The events denoted by the clauses in (2a–k) bear certain semantic relations to each other, usually between neighboring clauses in the monologue. These semantic relations contribute to the coherence of discourse. Discourse coherence is a challenging concept to define, and we will not attempt to do so here.

In most of the monologue in (2), the relations between the events expressed in the clauses are expressed overtly, with the forms in boldface. *So* in (2d) and *Otherwise* in (2e), highlighted in small capitals, are generally analyzed as **discourse markers (cxn)**. Discourse markers serve a wide variety of discourse functions; linking sections of discourse together is only one of those functions. In many cases, there is no overt marking of the discourse relation between clauses – for example, there is no overt marking of the discourse relation between clauses (2j) and (2k).

The remaining highlighted (boldface) forms are part of more conventionalized constructions that join two (or sometimes more than two) clauses together. Constructions that are made up of two or more clausal or clause-like constructions are complex sentences (see section 1.3). In Part IV (Chapters 15–19), we

will focus on complex sentences. We will not discuss discourse markers in this textbook; however, discourse markers are often the diachronic sources of forms in complex sentences (see for example section 15.4).

Complex sentences are generally divided into two types. Clauses (2e) and (2f) form a coordinate clause construction, joining the two clauses with the overt form *and*. Coordinate clause constructions are discussed in section 15.2. Coordination can be used not only to link events but also objects, as in *the outdoor condensing unit and refrigerant piping* in (2c). This use will also be discussed in section 15.2, and further in section 15.4.

Clauses (2b–c), (2g–h) and (2i–j) are instances of complex sentences involving a dependent clause, which is also a subordinate clause; for this reason, it is generally said that such complex sentences involve ‘subordination’ (see section 15.1.2 for the distinction between a dependent clause and a subordinate clause). The dependent clause of each complex sentence is introduced by *when* (2b), *to* (2h), and *if* (2i), respectively. These complex sentences are all instances of the adverbial clause construction, discussed in section 15.3.

Later in this section, we will present a crosslinguistically valid definition of the distinction between coordinate constructions and adverbial ‘subordinate’ constructions in terms of information packaging. Chapters 15–17 will survey the strategies used for coordination and adverbial subordination for a wide range of semantic relations between the events expressed in the two clauses of the complex sentence.

The underlined boldface form *doing* in (2i) represents another type of semantic relation between two events. *Doing* functions as an argument of the predicate *think* in the same clause. That is, the doing event is being referred to rather than being predicated. This “mismatch” in semantic class (event) and propositional act function (reference) was introduced in section 2.1. Reference to events is expressed in complement clause constructions; complement constructions are described in Chapter 18. Using events as modifiers, not illustrated in the discourse passage in (2), completes the possible ways in which events are expressed in grammar. Using events as modifiers is performed by relative clause constructions, also introduced in section 2.1; they are described in Chapter 19.

15.1.2 Complex Sentences and the Main–Subordinate Clause Distinction

Complex sentences are made up of two (or more) clauses. In complex sentence constructions involving subordination, including adverbial constructions, one clause is the **dependent clause (cxn)** and the other clause is the **matrix clause (cxn)**. In (3), the dependent clause is *because she was exhausted* and the matrix clause is *she went to bed*.

- (3) She went to bed **because** she was exhausted.

In coordinate clause constructions, there is no asymmetrical matrix-dependent relationship. Neither clause is functionally dependent on the other. Example (4) is an example of a coordinate clause construction; *she was exhausted* and *(she) went to bed* are the two clauses that are symmetrically conjoined:

- (4) She was exhausted **and** (so/therefore) went to bed.

The relation between the two clauses in constructions involving subordination is asymmetric in some way, whereas the relation between the two clauses in coordinate constructions is symmetric in some way. In section 15.1.3, I will present an information packaging analysis of this difference between coordination and (adverbial) subordination.

In (3), the matrix clause is also a **main clause (cxn)**, and the dependent clause is a **subordinate clause (cxn)**. The matrix clause of (3) may also be a subordinate clause, as in (5):

- (5) My mother told me **to go to bed** because I was exhausted.

That is, the matrix-dependent relation is a relative notion. A matrix clause like *to go to bed* is a matrix clause only relative to its dependent clause *because I was exhausted*; *to go to bed* is itself a dependent clause relative to its matrix clause *My mother told me*.

In (4), the two conjoined clauses are also main clauses. Coordinated clauses may themselves also occur as a coordinated subordinate clause, as in (6):

- (6) a. After **she cleared the ground and dug holes for the fruit trees**, she planted them all.
 b. My mother told me **to clear the ground, dig holes, and plant the fruit trees**.

In other words, a matrix clause is not the same as a main clause, although the two often coincide as in example (3) – and, worse, the terms ‘main’ and ‘subordinate’ are widely used for both the matrix-dependent and main-subordinate distinctions as defined here. The main clause – subordinate clause contrast is based on the information packaging function of pragmatic assertion, while the matrix clause – dependent clause relation is based on the asymmetric information packaging of the semantic relation between two events.

Only a main clause is pragmatically asserted. **Pragmatic assertion (inf)**, or simply **assertion**, is the information added to the discourse context when a sentence is uttered – or, more precisely, ‘the proposition expressed by a sentence which the hearer is expected to know or take for granted as a result of hearing the sentence uttered’ (Lambrecht 1994:52).

The main clause construction expresses the pragmatic assertion in a sentence. This is a functional (information packaging) definition of a main clause. Conversely, a subordinate clause is a pragmatically non-asserted clause. Cristofaro offers criteria for identifying the asserted clause: negation, polarity question, and hedging (see also section 13.2.1). For example, in (7), one can

see that *alarms ringing* in *Alarms ringing, the burglar fled* is not asserted (Cristofaro 2003:32):

- (7) a. It is not the case that alarms ringing, the burglar fled.
 b. Is it the case that alarms ringing, the burglar fled?
 c. Alarms ringing, the burglar fled, didn't he?
 d. *Alarms ringing, the burglar fled, didn't they?

In (7a), the only event that is necessarily denied is that the burglar fled; the alarms could still have rung. Likewise, in (7b), the only event whose truth is questioned is whether the burglar fled. In (7c), the hedging of the sentence with *didn't he?* is acceptable because *he* refers to the burglar and the burglar's fleeing is asserted. But in (7d), the hedging of the sentence with *didn't they?* is unacceptable because *they* refers to the alarms, and the alarms ringing is not asserted.

A dependent clause is almost always also a subordinate clause, and, for this reason, 'subordinate clause' is also used to mean 'dependent clause.' However, a dependent clause may function as a main (that is, pragmatically asserted) clause in English under certain circumstances. For example, in (8), one can hedge the dependent complement clause *John didn't come* (Green 1976:385) or even the causal (*because*) clause of the complement clause (Lakoff 1984:474; see also Bolinger 1977):

- (8) a. I guess **John didn't** come, did he?
 b. I guess we should call off the picnic **because it's raining**, isn't it?

We will follow Cristofaro and others in using 'main clause' / 'subordinate clause' for asserted and non-asserted clauses, respectively, and use 'matrix clause' / 'dependent clause' for the asymmetric relation between the two clauses in the adverbial clause construction (and in Chapters 18–19 for the asymmetric relation in complement clause and relative clause constructions). In the next section, we use the contrast between the adverbial clause construction and the coordinate clause construction to analyze the information packaging function of the asymmetric relation between the events linked in the adverbial clause construction.

15.1.3 The Information Packaging of Coordinate vs. Adverbial Clause Constructions: A Gestalt Analysis

In a coordinate or adverbial subordinate complex sentence construction, there is a semantic relation between the events expressed by the clauses that make up the complex sentence. There is a wide variety of semantic relations between the events found in these two constructions.

However, these semantic relations cannot be used to define the difference between coordinate and adverbial complex sentence constructions as comparative concepts. In fact, in English at least, all of the semantic relations between events that are standardly identified can be expressed by either a coordination

Table 15.1 *Packaging of semantic relations between events as either coordination or (adverbial) subordination*

Semantic relation	Adverbial construction	Coordinate construction
Anterior	<i>He washed the car before driving to the party.</i>	<i>He washed the car and drove to the party.</i>
Posterior	<i>He drove to the party after washing the car.</i>	<i>He washed the car and drove to the party.</i>
Overlap	<i>He washed the car while the sun was still shining.</i>	<i>The sun was shining and he was washing the car.</i>
Cause	<i>She went to bed because she was exhausted.</i>	<i>She was exhausted and (so) went to bed.</i>
Purpose	<i>I will grab a stick to defend myself.</i>	<i>I will grab a stick and defend myself.</i>
Apprehensional	<i>I grabbed a stick lest he attack me.</i>	<i>Grab a stick or he will attack you.</i>
Means / Positive Circumstantial	<i>He got into the army by lying about his age.</i>	<i>He lied about his age and got into the army.</i>
Negative Circumstantial	<i>She carried the punch into the living room without spilling a drop.</i>	<i>She carried the punch into the living room, and but she didn't spill a drop.</i>
Additive	<i>In addition to having your hand stamped, you must show your ticket stub.</i>	<i>You have to have your hand stamped and show your ticket stub.</i>
Substitutive	<i>We barbecued chicken at home instead of going out to eat.</i>	<i>We didn't go out to eat, and but barbecued chicken at home.</i>
Subtractive	<i>He did all the problems correctly except he missed the proof on the last one.</i>	<i>He did all the problems correctly but he missed the proof on the last one.</i>
Conditional	<i>If you do that, the terrorists have won.</i>	<i>Murphy, you do that and the terrorists have won, ...</i>
Concessive	<i>Although John had no money, he went into this expensive restaurant.</i>	<i>John had no money, but he went into this expensive restaurant (anyway).</i>

construction or an adverbial subordinate construction. Table 15.1 illustrates a widely used classification of semantic relations and their expression by either construction in English (Thompson and Longacre 1985; the semantic relations will be defined in section 15.3.1 and in Chapter 17).

Table 15.1 should be compared to Table 1.1 in Chapter 1, Table 6.2 in Chapter 6, and examples (1)–(3) in section 11.1. In all of these cases, the same semantic categories and relations occur in different grammatical constructions. This pattern is evidence that the grammatical constructions primarily encode information packaging, not semantic relations. The same is true here: coordinate and adverbial constructions encode an information packaging distinction that applies to the full range of semantic relations between events that are illustrated in Table 15.1. The contrast in information packaging illustrated in the table pertains to the way that the relationship between the two events is conceptualized in coordinate vs. adverbial constructions.

The most common semantic relations between events that are expressed by both coordinate and adverbial constructions are temporal and causal relations. Temporal and causal relations make up the first four rows of Table 15.1. The first two rows pertain to the **consecutive (sem)** temporal relation, where the events occur in temporal sequence (Stassen 1985:70–71). The **anterior (sem)** and **posterior (sem)** temporal relations are inverses of each other. The two types are defined by the relationship between the dependent clause and the matrix clause:

- (9) *Anterior relation:*
 He washed the car **before** driving to the party.
- (10) *Posterior relation:*
 He drove to the party **after** washing the car.

In contrast, there is a single coordinate clause construction for both “anterior” and “posterior” temporal relations:

- (11) He washed the car **and** drove to the party.

There is no asymmetry between the two clauses in a coordinate clause construction, hence no distinction between an “anterior” and “posterior” temporal relation. Instead, in a coordinate clause construction expressing a sequential temporal relation, the sequence in which the two clauses are uttered is the same as the sequence in which the events took place. Reversing the expression of the clauses in the coordinate construction in (11) leads to the description of a different situation with the opposite order of events:

- (12) He went to the party **and** washed the car.

This property of the coordinate clause construction is called **tense iconicity (str)** (Haiman 1985b:100).

In contrast, the order of clauses in an adverbial clause construction need not mirror the order of the events described:

- (13) a. Cindy quit **before Jim was promoted**.
 b. **Before Jim was promoted**, Cindy quit.

The difference between adverbial and coordinate constructions used for the same semantic relationship between events can be described using concepts from Gestalt psychology (Croft 2001:ch. 9). Adverbial clause constructions impose an asymmetric **figure-ground (inf)** construal or information packaging of the relation between the two events, such that the event denoted by the matrix clause is the figure and the event denoted by the dependent clause is the ground (Talmy 1978a; Reinhart 1984).

Figure and ground were introduced in Chapter 7 as an asymmetric spatial relation between objects (see section 7.3.1). In the spatial context, the figure is typically a smaller and more mobile object. The ground is used as a reference

point for the figure, and is typically larger and more immobile. If the figure and ground are typical, a sentence describing their spatial relation sounds natural, as in (14a) and (15a). If they are atypical, a sentence describing their relation sounds odd, as in (14b) and (15b) (Talmy 1978a:628; Croft 2001:330).

- (14) a. The bike is near the house.
 b. ??The house is near the bike.
- (15) a. The bike is in front of the house.
 b. ??The house is behind the bike.

Likewise, the reversal of the figure–ground relation between events leads to oddity, as in the (b) examples in (16)–(18) (Croft 2001:330–31):

- (16) a. When Jerry was chair of the department, everything was all right.
 b. ??When everything was all right, Jerry was chair of the department.
- (17) a. After Tom resigned, all hell broke loose.
 b. Tom resigned before all hell broke loose.
- (18) a. He dreamed while he slept.
 b. *He slept while he dreamed.

In (16a), Jerry's being chair of the department is a natural reference point for the matrix clause event. In (16b), in contrast, it can only be construed as Jerry being opportunistic: as soon as everything was all right – the reference point event – Jerry managed to become chair of the department. In (17a), Tom's term serves as the reference point contrasting with the following situation. In (17b), by contrast, the bad situation is the reference point and so Tom is construed as getting away before the consequences of his actions unfolded.

Example (18), from Talmy (1978a:636), shows that the figure–ground asymmetry is found even when the temporal relation of simultaneity is itself symmetric. Since sleeping is a precondition for dreaming, sleeping can serve as the reference point event for dreaming, as in (18a), but dreaming cannot serve as the reference point event for sleeping, as illustrated by the unacceptability of (18b).

On the other hand, in a coordinate clause construction, the two events are conceptualized as integral parts of a single complex whole (Wierzbicka 1980) – a **complex figure (*inf*)**. There is no asymmetric contrast between figure and ground, just a unity of the figure. Wierzbicka argues that the conceptualization of two events as a single whole requires finding a common denominator for the two events. This requirement means that coordination of some clauses is natural, as in (19), whereas coordination of other clauses is odd, because it is difficult or impossible to come up with a common denominator, as in (20) (Wierzbicka 1980:254, 227):

- (19) The sun was shining and the birds were singing.
- (20) ??John kissed Mary on the nose and kangaroos are mammals.

Table 15.2 *Major information packaging (discourse) and grammatical constructions at the complex sentence/discourse level*

Information packaging (discourse)	Grammatical construction (grammatical comparative concept)
asserted/non-asserted	main clause / subordinate clause
symmetric (complex figure)	coordinate (clause) construction
asymmetric (figure–ground)	adverbial (clause) construction (an instance of the matrix–dependent relation)

The tense iconicity of coordinate clause constructions can be explained by the unity of the complex figure / complex event. The complex event is treated as a whole and its temporal order cannot be changed, as that would be a different event. In contrast, the asymmetry of the figure–ground relation prevents the two events from being conceived as a single whole, which allows the two events to occur in either order in an utterance.

The information packaging distinctions for complex sentence constructions, and the grammatical comparative concepts that correspond to them, are given in Table 15.2. We do not specify any particular semantic relation between events as prototypical for the different types of information packaging of clauses. For all types, temporal relations are probably the most typical.

15.2 Coordinate Clause Constructions and Coordination in General

15.2.1 Functional Characterization

Coordinate clause constructions (cxn) package two (or more) clauses symmetrically, so that they form a complex figure (section 15.1.3). The symmetric complex figure packaging can be applied to entities other than events: one can coordinate referents (*John, Paul, George, and Ringo*), modifiers (*a low but long wall*), and other units of information. Hence, coordinate clause constructions are a subtype of **coordinate constructions (cxn)**. The function of coordination is primarily about the symmetric or complex figure construal, not event predication. The part of a coordinate construction that expresses one of the units of information being coordinated is called a conjunct, or **coordinand (cxn)** (Haspelmath 2004) – the term used in this book.

As will be seen in section 15.3 and Chapter 16, the semantic relations in Table 15.1 tend to be expressed by different adverbial constructions. When it comes to coordination constructions, however, the semantic relations in Table 15.1 are often expressed by a single coordinate construction. When there are distinctions made between different types of coordinate constructions, the distinctions are based on different functions than the semantic relations in Table 15.1, although

the coordinate constructions can still express those semantic relations. The most common subcategorization of coordinate constructions – admittedly, based on English *and*, *or*, *but* – is threefold.

The first subcategory is **conjunctive coordination (cxn)**. Conjunctive coordination corresponds to coordination by ‘and’ in English and its equivalent in other languages, and has been assumed in the discussion of coordination in section 15.1.3. Conjunctive coordination can be analyzed as **additive (sem)** in function (Malchukov 2004:186) – in our terms, adding a figure to another figure to form a complex figure. A particular subtype of conjunctive coordination expresses the consecutive temporal function (‘and then’; see section 15.1.3) which is sometimes expressed by a distinct conjunction (Malchukov 2004:186; see also section 15.3.1).

The second subcategory is **disjunctive coordination (cxn)**. This corresponds to English ‘or’ coordination, and construes the coordinated entities as being alternatives, rather than some sort of addition to a complex whole. Disjunctive coordination appears to be similar to alternative questions (see section 12.3.1), and alternative questions often are co-expressed with disjunctive coordination, as in English:

- (21) a. Do you want me to help you, **or** do you want to do it yourself?
 b. We can eat here **or** eat out.

In many languages, however, alternative questions and disjunctive coordination are not co-expressed, as in Mandarin (Li and Thompson 1981:654; cf. Haspelmath 2007:4):

- (22) a. nǐ yào wǒ bāng nǐ háishi yào zìjǐ zuò
 you want I help you or want self do
 ‘Do you want me to help you, or do you want to do it yourself?’
 b. wǒmen zài zhèli chī huòzhe chī fàndiàn dōu xíng
 we at here eat or eat restaurant all OK
 ‘We can either eat here or eat out.’

The functional difference between an alternative question and disjunctive coordination can be observed in cases where disjunctive coordination occurs in interrogative constructions, as in the Basque examples in (23) (Saltarelli 1988:84; cf. Haspelmath 2007:25):

- (23) a. Te-a ala kafe-a nahi d-Ø-u-zu
 tea-SG.ABS or coffee-SG.ABS want 3ABS-PRS-2.AUX-2SG.ERG
 ‘Do you want tea, or coffee?’ (= ‘do you want tea or do you want coffee?’)
 b. Te-a edo kafe-a nahi d-Ø-u-zu
 tea-SG.ABS or coffee-SG.ABS want 3ABS-PRS-2.AUX-2SG.ERG
 ‘Do you want tea or coffee?’ (= ‘do you want either tea or coffee?’)

In (23a), the proper answer is either ‘tea’ or ‘coffee’; in (23b), the proper answer is ‘yes’ (I want one of those) or ‘no’ (I don’t want either of those) (Haspelmath 2007:26).

The third common subtype of coordination is **adversative coordination** (*exn*). This corresponds to English ‘but’ coordination, and construes the coordinated entities as being in contrast in some way. Adversative coordination may involve unexpectedness – that is, ‘*p* but *q*’ may presuppose that ‘normally, *p* and not *q*.’ But it does not necessarily do so, and some languages distinguish between **simple contrast (sem)** and **unexpected co-occurrence (sem)** with distinctive adversative coordinating conjunctions. For example, Russian *no* is used for unexpected co-occurrence, while *a* is used for simple contrast (Payne 1985:6–10; Malchukov 2004; examples from Malchukov 2004:180, 183):

- (24) a. Vanja prostudilsja, no pošel v školu
 Vanja caught_cold CONJ went to school
 ‘Vanja caught a cold, but [unexpected] went to school.’
- b. Petja staratel'nyj, a Vanja lenivyj
 Petja diligent, CONJ Vanja lazy
 ‘Petja is diligent, but [contrast] Vanja is lazy.’

Pohnpeian *ah* expresses simple contrast but not unexpectedness (examples from Rehg 1981:331–32, glossed in Haspelmath 2007:28):

- (25) a. Soulik pahn mwenge oh e pahn meir
 Soulik FUT eat and he FUT sleep
 ‘Soulik will eat and he will sleep.’
- b. i laid ah e meir
 I fish CONJ he sleep
 ‘I fished, and/but he slept.’

Unfortunately, neither disjunctive nor adversative coordination has been extensively investigated across languages. Some languages lack distinct disjunctive or adversative coordination constructions: one or both of disjunctive and alternative coordination is co-expressed with conjunctive coordination. In these languages, the notions of alternatives, unexpectedness, or contrast are inferred from general knowledge about the two events and the discourse context.

Malchukov (2004) argues, based primarily on evidence from northern Eurasian languages, that there are two paths that allow conjunctive coordination to be extended to adversative coordination, or vice versa. One is via the contrastive function illustrated in (24b). The other is via consecutive conjunction to unexpected result (i.e. consecutive but unexpected), as in the Russian example in (26) with the special form *da i* [lit. ‘yes and’] (Malchukov 2004:187):

- (26) On zabolel da i umer
 he fell_ill CONJ PRT died
 ‘He fell ill and died (I did not expect it.)’

The intended interpretation of (26) is that, unlike an unexpected result, ‘the event referred to in the second conjunct is unexpected as such, without any relation to the event in the first [conjunct]’ (Malchukov 2004:187).

Haiman (1978a) suggests that the coordination constructions of Hua divide up the semantic possibilities of coordination differently, into non-exhaustive and exhaustive list coordination. In **non-exhaustive list coordination (cxn)**, not all of the relevant entities on the list are mentioned. For conjunctive coordination, non-exhaustive listing means that there are other entities on the list: the meaning is ‘X, Y, Z... and others / and so on / and stuff.’ Haspelmath (2007:24) describes non-exhaustive conjunctive coordination as ‘representative conjunction.’

For disjunctive coordination, the non-exhaustive type corresponds to **inclusive disjunctive coordination (cxn)**: that is, one or the other or both or any combination of multiple possibilities. Non-exhaustive list coordination typically consists of many possibilities. Example (27) from Hua illustrates an inclusive disjunctive construal (and disjunctive coordination of clauses). Example (28) illustrates a representative conjunctive construal of the nonexhaustive listing morpheme -ve (Haiman 1978a:7–8; **NONE_XH** = nonexhaustive):

- (27) mnu'bo hatai-supi'ba-ve kire'bo
 pandanus bash-PURP.1PL-**NONE_XH** corn
 kro-de-supi'ba-ve egemo bre-supi'ba-ve
 husk-eat-PURP.1PL-**NONE_XH** banana plant-PURP.1PL-**NONE_XH**
 degi kiko-pi' rmi-supamo a-ki'
 crazy place-in go_down-if.1PL woman-with
 a'-vo-g-une
 not-sleep-FUT-1PL.IND
 ‘If we go down to a “crazy place” to bash pandanus, husk and eat corn,
 or plant bananas, we don’t sleep with women.’

- (28) zorgevama-ve kima-ve hromava-ve
 plumes-**NONE_XH** salt-**NONE_XH** cowrie_shell-**NONE_XH**
 eva'ba-ve kapi-to' bra-e
 money-**NONE_XH** door-LOC put-3PL.IND
 ‘They placed birds of paradise plumes, salt, cowrie shells and money at
 the door (of the woman desired in marriage).’

In (27), doing any or all of the actions violates a sexual taboo. In (28), all of the items, and more, are offered as part of the brideprice (Haiman 1978a:7–8).

In **exhaustive list coordination (cxn)**, all of the relevant entities on the list are mentioned. For conjunctive coordination, exhaustive listing means that all of the entities are listed in the construction. Haspelmath (2007:36) describes the same function as ‘summary conjunction’ (see section 15.2.2). In Hua, exhaustive listing in conjunctive coordination is found only with referring phrases, using the form *gi* (Haiman 1977:60) as in (29) (**EXH** = exhaustive):

- (29) dgai-mo-gi kgai-mo-gi
 I-CONN-**EXH** you-CONN-**EXH**
 ‘you and I’

At the clause level, Hua *ito* represents a closed list, and is found in two constructions, one adversative and the other disjunctive. Adversative coordination is normally construed as two opposing contrastive options, both of which are also expressed in the construction (Haiman 1978a:4):

- (30) bgotva' a'bo mni' Zati-ro' Ø-vitihetira-e ito
 one woman river Tua-LOC 3SG.OBJ-shove-3PL.IND EXH
 bgo 'amo Ø-no'bumoza-e
 other one 3SG.OBJ-strangle-3PL.IND
 'One woman they drowned in the Tua river; but the other one, they
 strangled.'

For disjunctive coordination, the exhaustive type corresponds to **exclusive disjunctive coordination (cxn)**: that is, either one or the other, but not both. In Hua, this is only possible in polar questions, as in (31) (Haiman 1980:271):

- (31) bai-ve ito 'a'-bai-e
 be.3SG-INT EXH NEG-be.3SG-IND
 'Is he here or isn't he?'

Exhaustive list coordination consists of typically just two possibilities; Haiman notes that even the exhaustive phrasal conjunctive coordination marker *gi* normally occurs only with two coordinands (Haiman 1978b:9).

15.2.2 Strategies: Coordinators and Related Forms

Certain coordination strategies are found with all types of coordination, not simply coordination of clauses. Many examples in this section will involve coordination of referring phrases; the strategies also occur in coordinate clause constructions.

Coordination may be zero coded, in which case it is called **asyndetic (str)** coordination, as in example (32) from Lavukaleve (Terrill 2004:431; cf. Haspelmath 2004:4):

- (32) nga-bakala nga-uia tula
 1SG.POSS-paddle.M 1SG.POSS-knife.F small.Fsg
 'my paddle and my small knife...'

Overtly coded coordination is called **syndetic (str)** coordination. The overtly coded form in both coordination and subordination is a **conjunction (str)**. Conjunctions are generally free forms or clitics. Overt coding of coordination or subordination by an affix on the predicate is analyzed as a different strategy, namely deranking; deranking is described in section 15.2.3.

A conjunction that overtly codes coordination is called a 'coordinating conjunction' or a **coordinator (str)** (see also Haspelmath 2007:1). Haspelmath distinguishes two subtypes of the syndetic coordination strategy.

In **monosyndetic (str)** coordination, there are fewer coordinators than coördinands. Two common types of monosyndetic coordination are illustrated by the Iraqw example in (33) (Mous 2004:113; cf. Haspelmath 2004:5), and its English translation:

- (33) Kwermuhl nee Tlawi nee Dongobesh nee Haydom nee Daudi
 K. and T. and D. and H. and D.
 'Kwermuhl, Tlawi, Dongobesh, Haydom and Daudi [place names]'

In the Iraqw phrase, there are coordinators in between each coördinand – that is, three coordinators for four coördinands. In the English translation, there is only one coordinator, before the last coördinand. When there are only two coördinands, of course, there is only one coordinator in both Iraqw and English.

In **bisynthetic (str)** coordination, there is one coordinator for each coördinand – that is, an equal number of coordinators and coördinands. Bisynthetic coordination is illustrated by example (34) from Upper Kuskokwim Athabaskan (Kibrik 2004:539; cf. Haspelmath 2004:4):

- (34) dineje ?it midzish ?it
 moose with caribou with
 'moose and caribou'

Bisynthetic coordination is also found with disjunction in English: *Either we go or we stay*.

The bisynthetic coordination strategy is a characteristic means for expressing symmetry in language. Linguistic forms in spoken languages are inherently asymmetric, in that one form precedes and the other follows: A B. One way to encode symmetry iconically is to tag both forms with the same morpheme, as described by the formula: Ax Bx (Haiman 1985a). Bisynthetic coordination is an example of this strategy for expressing symmetry in an inherently asymmetric communication channel.

The coordinator in monosyndetic coordination is usually between the coördinands, and is sometimes attached as a clitic or affix to the first or second coördinand. When the coordinator occurs between the coördinands, it is not always clear whether it should be associated with the first or second coördinand (Haspelmath 2004:7–9). The position of the coordinator reflects the typical position of its etymological source (Haspelmath 2007:10; see section 15.4).

If it is clauses that are conjoined, the coordinator may occur inside a coördinand, as in example (35) from Dargi (van den Berg 2004:201; cf. Haspelmath 2004:9; coördinands indicated by square brackets):

- (35) [il nu-ni abit'=aq-un-ra] [idzala-ra Gaybik-ib]
 this I-ERG remove=CAUS-AOR-1 disease(ABS)-and stop-AOR(3)
 'I had it (= tooth) removed and the pain stopped.'

The contrast between exhaustive and non-exhaustive coordination is less well studied. Haspelmath describes a morpheme for non-exhaustive coordination in

Koasati (under the name ‘representative conjunction’; Kimball 1991:413; cf. Haspelmath 2007:14):

- (36) akkámmi-t ow-i:sá-hci hahci-f-ó:t
 be_so-CONN LOC-dwell.PL-PROG river-in-NONE~~XH~~
 okłaspi-f-ó:t kámmi-fa
 swamp-in-NONE~~XH~~ be_so-in

‘So they live in rivers and in swamps and in suchlike places.’

Haspelmath notes that the same morpheme may also be used with a single “coordinand,” with a non-exhaustive meaning (Kimball 1991:414; cf. Haspelmath 2007:14):

- (37) asá:l-o:t talibó:li-t scó:pa-t
 basket-NONE~~XH~~ make-CONN sell-CONN

‘She made and sold things like baskets.’

Another closely related strategy for non-exhaustive coordination is the use of a **general extender (str)** (Mauri, Goria, and Fiorentini 2019:296, and references cited therein) – that is, a form that is added to the list and signifies indeterminate referents in addition to those listed. Example (38) from Italian, an attested example, uses a general extender (Mauri et al. 2019:297):

- (38) questa è l’ultima lezione all’ultima lezione possono partecipare
 this is the’last lesson to’the’last lesson able participate
 anche i parenti amici eccetera che vogliono venire
 also the relatives friends etcetera who wish to.come
 ‘This is the last lesson, the last lesson is open also to relatives, friends
 etcetera who wish to come.’

There is an analogous strategy for exhaustive coordination, in which there is the use of a **summarizer (str)** (the term follows Haspelmath’s [2007:36] characterization of overtly coded exhaustive coordination as ‘summary conjunction’). The summarizer is typically a numeral that summarizes the number of coordinands, as in example (39) from Classical Tibetan (Beyer 1992:241; cf. Haspelmath 2007:36), or the totalizing quantifier ‘all,’ as in example (40) from Cantonese (Matthews and Yip 1994:289; cf. Haspelmath 2007:36):

- (39) lus flag yid gsum
 body speech mind three
 ‘body, speech and mind’

- (40) yanfā seui, leuhtsī fai, gínggéi yúng dōu yiu bēi ge
 stamp duty lawyer fee agent commission all need pay PRT
 ‘You have to pay stamp duty, legal fees and commission.’

One final strategy will be described here (for more detailed discussion of coordinator strategies, see Payne 1985; Stassen 2000; Haspelmath 2004, 2007). Sometimes a special negative coordinator is used when one or both of the

coordinands are negative. Examples (41)–(42) illustrate the Latin special negative conjunction *neque/nec* used to conjoin an initial or a final negated coordinand (Payne 1985:37–38, from Kühner and Stegmann 1955:48, 49):

- (41) eques Romanus nec infacetus et satis litteratus
knight Roman and.not dull and moderately literate
'a not dull and moderately literate Roman knight' (Off.3.38)
- (42) qui et rem agnoscit neque hominem ignorat
who and affair recognizes and.not man is_ignorant_of
'who recognizes the affair and is not ignorant of the man' (Flacc. 46)

More commonly, one finds a special bisyndetic negative coordinator strategy when both coordinands are negative, as in example (43) from Albanian (Payne 1985:41, from Rost 1887:164; note that the predicate combines with a negator, and note also the parallel English *neither ... nor*):

- (43) s' kam as buk as ui
not I.have neither bread nor water
'I have **neither** bread **nor** water.'

15.2.3 Strategies: Balancing vs. Deranking

Clausal coordination, the primary type of coordinate construction discussed in this chapter, also exhibits a set of strategies based on the form of the verb in the coordinands, namely the distinction between balanced and deranked strategies briefly introduced in section 12.4.2 regarding deontic modality, and in section 14.2 regarding the strategies for stative complex predicates.

The distinction between balancing and deranking was proposed by Stassen (1985), and has figured prominently in the typology of complex sentences since then (see, for example, Koptjevskaja-Tamm 1993; Cristofaro 2003; Loeb-Diehl 2005). Balanced vs. deranking is an instance of a system of strategies. In the **balanced strategy (str)**, the predicate form in each clause of the complex sentence construction is the same as one that occurs in a simple – i.e. not coordinated – independent declarative utterance. That is, in the balanced strategy, the predicate form is co-expressed with the predicate form in an independent declarative utterance. More precisely, all clauses in a balanced complex sentence construction are the same as a simple independent declarative clause. English uses a balanced strategy for coordination, as in (44a); compare the simple declarative clauses in (44b–c) (for the non-expression of the shared subject referent in the second clause, see section 16.2):

- (44) a. Bilbo **found** a ring and **put** it in his pocket.
b. Bilbo found a ring.
c. He put it in his pocket.

In the **deranked strategy (str)**, on the other hand, the predicate form is not the same as one that occurs in a simple (i.e. not coordinated) independent declarative

utterance (Stassen 1985:78, 2009:257). That is, any strategy for expressing the predicate form that is not the balanced strategy is an instance of the deranked strategy. The range of strategies that instantiate deranking will be described later in this section.

The balancing and deranking strategies are found with all types of complex sentence constructions, both coordinate clause constructions as seen in (44) above and (45) below, and all types of subordinate constructions. The balancing strategy must therefore be defined in terms of predicate co-expression with a **simple** independent declarative clause, since a coordinated clause may be deranked.

In the deranked strategy, not all clauses are deranked. There is always one balanced clause – that is, there is one clause that looks like a simple independent clause. In adverbial clause constructions, i.e. figure-ground complex sentence constructions, the balanced clause is the matrix clause, which expresses the event functioning as the figure. In the coordinate clause construction, which expresses the symmetric complex figure construal, it is a bit more complicated. A coordinate clause construction using the deranked strategy is morphosyntactically “asymmetric” even though it is functionally symmetric (i.e. a complex figure construction). The deranked strategy in coordinate clause constructions is also known as ‘clause chaining,’ ‘medial verbs,’ or ‘cosubordination.’ These terms indicate that, in a series of coordinands, all the clauses but one in a deranked coordinate clause construction are deranked in form.

Most commonly, the balanced clause is the last clause, as in example (45) from Japanese (Yuasa and Sadock 2002:92; cf. Haspelmath 2004:34):

(45)	ojiisan-ga	yama-de	hatarai-te	obaasan-ga	mise-no
	old_man-NOM	mountain-at	work-CO	old_woman-NOM	store-GEN
	ban-o	shi-ta			
	sitting-ACC	do-PST			

‘The old man worked at the mountain, and the old woman tended the store.’

Stassen describes this as **anterior deranking (str)** (Stassen 1985:88).

In some languages, the balanced clause is the first clause, as in example (46) from Big Nambas (Fox 1979:127, lines 11–12):

(46)	a-v-əln	talei	ka-v-ruh	ka-v-m'i
	3PL.RL-PL-leave	knife	CO-PL-run_away	CO-PL-go_over
	arna	pitha ...		
	on	mountain ...		

‘So they left their knives and ran away and climbed over the hill...’

Stassen describes this as **posterior deranking (str)** (Stassen 1985:89).

In coordinate clause constructions, anterior deranking almost always occurs in OV languages, as in (45); while posterior deranking almost always occurs in VO languages, as in (46) (Stassen 1985:90).

The balancing/deranking contrast is not the same as the finite/nonfinite clause distinction found in traditional grammar (Stassen 2009:262). The relative clause (in brackets) in example (47) is a finite clause, but not a balanced clause (Butt and Benjamin 2004:280; gloss added):

- (47) Necesita-mos a alguien [que est-é en el local]
 need-1PL.PRS.IND OBJ someone that be-3SG.PRS.SBJV on the spot
 'We need somebody who'll be on the spot.'

In (47), the verb form *esté* inflects for Third Person Singular Present Tense. Likewise, the verb form *necesitamos* used in simple independent declarative clauses also inflects for person, number, and tense. Hence, *esté* is finite because it shares its inflectional possibilities with the predicate in a simple independent declarative utterance. However, *esté* is not the same form; it is in the Subjunctive Mood, which is *-e* with this verb, in contrast to the Indicative *-a* used in the independent declarative clause verb form *está*. This difference is sufficient to classify *esté* as a deranked form, and the relative clause as a deranked clause form.

Deranked predicate forms are defined as those that are not balanced. Thanks to this negative definition, the deranking strategy is manifested in several different ways (Stassen 2009:256–65):

- (a) The predicate **lacks** inflections of prototypical predication: tense, aspect, mood, and indexation of subject and/or object (Stassen 1985:82–83; 2009:257). For example, the deranked predicate forms in the Big Nambas example (45) lack person indexation and modality inflection.
- (b) The predicate has **special inflectional forms** for these categories that are different from those of prototypical predication (Koptjevskaja-Tamm 1993:29–32; Cristofaro 2003:55–56; Stassen 2009:261–63). These are sometimes called 'subjunctives,' as in the Spanish example (47).
- (c) The predicate has some **overt affix on the predicate** that encodes deranking, for example Japanese *-te* in (45) and Big Nambas *ka-* in (46) (Stassen 1985:79, 2009:257). Deranked forms go under various names in traditional and descriptive grammar: 'infinitives,' 'gerunds,' 'participles,' 'verbal nouns,' 'masdars,' 'action nominals,' 'nominalizations.' In section 15.3.2, we will introduce a distinction in deranking between action nominals and other deranked forms. Overtly coded deranked predicate forms may also inflect for verbal categories, and action nominals may be inflected for nominal categories including case; see section 15.3.2.

Deranking refers only to the form of the predicate. Subordinators or coordinators that are independent morphemes and introduce clauses do not in themselves make a clause deranked. If the predicate form is the same as a simple independent clause, as in (48), then a clause with a subordinator is balanced. A deranked clause is only deranked if the predicate form differs, as in (49):¹

¹ Examples (48)–(49), and (53) below, are translated as adverbial clause constructions. As we have noted, balancing and deranking strategies are employed for both coordinate (complex figure) clause and adverbial (figure-ground) clause constructions. In many cases, it is difficult to distinguish the two types of information packaging, especially for complex sentence constructions using a deranking strategy. This issue is discussed in 15.4.

- (48) Before he left the house, Jerry turned out all the lights.
 (49) Before leaving the house, Jerry turned out all the lights.

Likewise, if the clause-introducing morpheme is a bound morpheme and combines with the clause as a whole – that is, it is not an affix on the predicate – then it is not considered to be evidence for the deranked status of the clause.

The balanced strategy is defined as co-expression of the predicate form with the predicate form of simple independent declarative clauses. The restriction to declarative clauses is necessary because nondeclarative clause constructions (see Chapter 12) often recruit subordinate clause constructions, a process called **insubordination (str)** by Evans (2007; see also Evans and Watanabe 2016). These constructions often employ a deranked strategy. For example, the imperative constructions illustrated below use the Spanish Subjunctive in (50), the English Gerund in (51), and the Russian Infinitive in (52):

- (50) Dígan-se-lo Ustedes.
 tell:3PL.SUBJ-REFL-3SG.OBJ 2PL.FRM
 ‘Tell them about it.’
- (51) No smoking.
- (52) Ne kur-it’.
 NEG smoke-INF
 ‘No smoking.’

In a deranked clause, the coding of participants (see Chapters 6–9) may differ from that found in an independent declarative clause. In particular, the core argument phrases may be coded differently than in a simple independent clause:

- The predicate may no longer index the argument – hence it lacks inflections of a prototypical predication. For example, Big Nambas *kavruh* in (46) does not index the Subject argument.
- The predicate may index the argument but with special forms – hence it uses different inflectional forms than a prototypical predication. For example, Spanish *esté* in (47) uses a different Third Person Singular Subject Index than the Declarative *está*.
- The argument phrase may lack flagging associated with subject/object phrases, and instead have possessive or oblique flagging characteristic of nominal modification. For example, the Subject argument phrase *Shoka* ‘Squirrel’ in (53) from Tera has the Genitive postposition *be*, as in the possession construction (Newman 1970:76; cf. Stassen 2009:257):

- (53) gab-tə bə Shoka ne gar, Mapulu tə nji k̪u-a bara
 return-VN of Squirrel to bush, Hyena then eat meat-the away
 ‘As soon as Squirrel returned to the bush, Hyena ate up the meat.’
 [lit. ‘Squirrel’s returning to the bush, Hyena then ate up the meat’]

- (iv) The argument phrase may occur in a different position, e.g. it moves to the position for genitive adnominal modifiers or for oblique phrases. For example, the Tera construction in (53) positions the argument phrase expressing the subject participant after the verb, instead of before the verb where it normally occurs in an independent clause (Newman 1970:15).
- (v) The argument phrase may be obligatorily absent. For example, *Before leaving the house* in (49) lacks expression of the Subject participant Jerry.

Since any clause that is not balanced is deranked, and there are several different ways in which a predicate form may not look like a simple independent declarative clause, there is a wide variety of deranked clause strategies. However, there are crosslinguistic patterns as to what properties of a predicate form, and what properties of the coding of participants, combine in a deranked clause. The balanced and deranking strategies can be defined on the continuum presented in Figure 15.1.

The balancing strategy – i.e., everything looks like prototypical predication – is represented by the left end of Figure 15.1. All deranking constructions extend toward the right end of Figure 15.1. Many of the deranking strategies involve the absence of features of prototypical predication, such as the absence of tense, mood, or aspect expression. Some of the deranking strategies are in fact strategies used in referring phrases: the use of case affixes on the predicate form, and the use of a possessive construction for a core argument phrase. For this reason, the right end of the continuum in Figure 15.1 is described as ‘reference-like.’ The different deranking strategies form partial hierarchies, as represented in Figure 15.1 (Koptjevskaja-Tamm 1993; Cristofaro 2003:ch. 10, and 2007; Croft 2001:354–57, and references cited therein).

Figure 15.1 gives a partial ordering of (the loss of) characteristic clausal properties. A “minimally deranked” clause will, so to speak, first lose the typical tense–aspect–mood marking of a clause, then the typical clausal coding of the argument phrase encoding S and/or A, and finally the typical coding of the argument phrase encoding P. Of the argument phrase coding features, word order is the most likely to change, then indexation, then flagging. As noted above, the argument phrases are likely to acquire the properties of a nominal modifier construction, such as a genitive phrase, possessor indexation, and/or oblique flagging.

Although Figure 15.1 suggests a means to distinguish different types of deranking, there remains a lot of variability, particularly beyond the loss of main

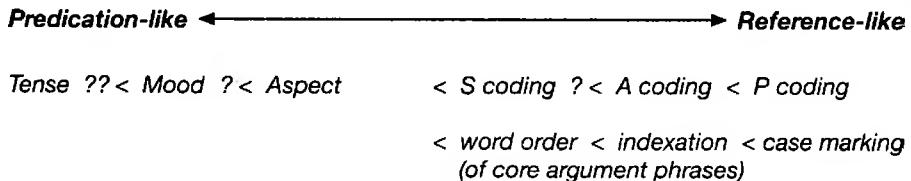


Figure 15.1 *A partial hierarchy of deranking strategies*

clause tense–mood–aspect inflections, such that it is generally not possible to establish crosslinguistically useful categories of deranked forms. However, in section 15.3.2, we will observe that one can identify a crosslinguistically useful category of action nominals that almost always employs a specific subset of deranking strategies.

15.3 Adverbial Clause Constructions

15.3.1 Functional Characterization

Adverbial clause constructions are distinguished from coordinate clause constructions in that the events in the two clauses are conceptualized as being in an asymmetric, figure–ground functional relation. The conceptual basis for the distinction was described in section 15.1.3; problematic cases for this subtle conceptual contrast are discussed further in section 15.4. In this section, we will focus on the more clearly adverbial clause constructions and their functional and formal properties.

Adverbial clause constructions (cxn) express a figure–ground construal of the relation between two events. They consist of two parts, a matrix clause (see section 15.1.2) and an **adverbial dependent clause (cxn)**. The matrix clause expresses the event construed as the figure, and the adverbial dependent clause expresses the event construed as ground. The adverbial clause is dependent on the matrix clause. The adverbial clause is non-asserted (section 15.1.2), whereas the matrix clause is asserted if it is the main clause of the sentence.

There is a wide range of semantic relations that may hold between the main clause event and the adverbial clause event. In section 15.2.1, it was noted that the functional distinctions made between different adverbial clause constructions correspond fairly closely to the list of semantic relations found in Table 15.1.

As noted in section 15.1.3, adverbial clause constructions can be used to package temporal and causal relations between events. Relations between events in temporal sequence were defined in section 15.1.3. Consecutive temporal relations provide the sharpest contrast between coordination and adverbial subordination. In coordination, tense-iconicity applies: the sequence of clauses iconically reflects the sequence of events. In adverbial subordination, the sequence of clauses does not have to mirror the sequence of events, and either event may be construed as the ground (expressed by the adverbial clause). Hence, we must distinguish between anterior and posterior temporal relations, depending on which event is construed as the figure and which as the ground (see examples [9] and [10] in section 15.1.3).

However, when two events are **simultaneous (sem)** (this term is typically used even if the events only partially overlap in time; Stassen 1985:94–95), then their semantic relation is temporally symmetrical, although either event may be construed as figure or ground in an adverbial clause construction:

- (54) a. She played the fiddle **while** he danced.
 b. He danced **while** she played the fiddle.

The other common semantic relation between events is **causal (sem)**. In a causal relation, the causing event is normally construed as the ground, and the resulting event is the figure:

- (55) Sarah moved back to California **because** she couldn't find a job in Washington.

Causal relations are also a component of the meaning of conditional constructions, concessive constructions, concessive conditional constructions, and comparative conditional constructions (see sections 17.3 and 17.4.1).

The rest of this section describes some of the other commonly occurring semantic relations between events that can be packaged in adverbial clause constructions. As noted in Table 15.1, most if not all of these semantic relations may also be packaged in coordinate clause constructions, even in the same language, since coordination and adverbial subordination represent two different ways of packaging semantic relations between events.

Purpose relations (sem) involve an element of intention on the part of the agent of the main clause event towards bringing about the purpose clause event:

- (56) I will grab a stick **to** defend myself.

Example (56) illustrates the typical case, where the participant(s) in the purpose event are shared with the main event: the speaker is both the one grabbing the stick and the one defending him/herself. However, this is not a requirement for purpose events (Cristofaro 2003:157):

- (57) I introduced some small adjustments **in order** for readers **to** be more favorably disposed.

In English, purpose and temporal sequence are regularly distinguished grammatically, the former using a special purpose clause construction as in (56) and (57). But coordination can also express a purpose-like relationship:

- (58) I will grab a stick **and** defend myself.

Stassen (1985:71–74) notes that matrix clause + purpose clause (which he calls a final clause) form a temporal sequence such that the second event is not (yet) realized. Another way in which purpose clauses are distinct from other types of adverbial clauses is that they are a common diachronic source of complement clauses (see section 18.3.2; Haspelmath 1989).

The **apprehensional relation (sem)** can be thought of as a “negative” form of purpose: the agent of the main clause intends that the event in the apprehensional clause does **not** happen (Thompson and Longacre 1985:188):

- (59) I grabbed a stick **lest** he attack me.

Again, the apprehensional semantic relation can be expressed by a coordinate clause construction in English, albeit using disjunction rather than conjunction:

(60) Grab a stick **or** he will attack you.

The English coordinate construction variant is restricted to imperative contexts in which the construction expresses a warning.

Another “positive”/“negative” pair of semantic relations are the two circumstantial relations that describe accompanying events that characterize more specifically what happened or didn’t happen as part of the matrix clause event. The positive circumstantial relation in (61) (Thompson and Longacre 1985:188) is generally called a **means (sem)** relation; its opposite in (62) (Thompson and Longacre 1985) is simply called a **negative circumstantial relation (sem)**.

(61) He got into the army **by** lying about his age.

(62) She carried the punch into the living room **without** spilling a drop.

Circumstantial relations between events may also be expressed with coordinate clause constructions in English (negative circumstantials require negation of the circumstance event):

(63) He lied about his age **and** got into the army.

(64) She carried the punch into the living room, **and** she didn’t spill a drop!

Finally, there are three relations describing an additive (see section 15.2.1), **subtractive (sem)**, or **substitutive (sem)** relation between the matrix clause event and the adverbial clause event, illustrated in (65), (66), and (67), respectively (Thompson and Longacre 1985:199–200):

(65) a. **Besides** missing my bus, I got my feet all wet.

b. **In addition to** having your hand stamped, you must show your ticket stub.

(66) He did all the problems correctly **except (that)** he missed the proof on the last one.

(67) a. We barbecued chicken at home **instead of** going out to eat.

b. I’ll take the pills **rather than** risk a heart attack.

Again, these relations may all be expressed by coordinate constructions, the latter two adversative and negative, respectively:

(68) You have to have your hand stamped **and** show your ticket stub.

(69) He did all the problems correctly **but** he missed the proof on the last one.

(70) We **didn’t** go out to eat, **and** barbecued chicken at home (instead).

Other semantic relations between events – in particular comparative, conditional, and concessive relations – where more detailed typological research has been done, are discussed in Chapter 17.

15.3.2 Strategies: Balancing vs. Deranking, and Action Nominals vs. Converbs

As with any other complex sentence constructions, adverbial clause constructions employ the strategies for conjunctions presented in section 15.2.2. Likewise, adverbial clause constructions also employ both balancing and deranking strategies (see section 15.2.3). In this section, we discuss the use of these strategies in adverbial clauses and introduce a distinction between two types of deranked predicate forms, action nominals and converbs.

Typically, a balancing strategy for adverbial subordination is syndetic – that is, includes an **adverbializer (str)**, a morphologically free (or clitic) form that typically encodes the semantic relation between the adverbial clause event and the matrix clause event. The English examples (54)–(57), (59), (61)–(62), and (65)–(67) in section 15.3.1 all represent examples of a syndetic balancing strategy using an adverbializer. The fact that an adverbializer is present does not make these adverbial clauses deranked, because the form of the predicate is identical to that of a declarative main clause (Stassen 1985:78; see also section 15.2.3).

In section 15.2.3, it was noted that the deranked strategy is defined negatively as not balanced, and, for this reason, there is actually a group of deranking strategies. The strategies primarily described in that section pertain to the following morphosyntactic structures:

- (i) The form of the predicate
- (ii) The nature of verbal (predicate) inflections, if any
- (iii) The encoding of the core arguments of the predicate

We begin by introducing another distinction in strategies which is relevant and typologically robust: the distinction between deranked forms that are **action nominals (str)** and those that are not. Both action nominals and non-nominal deranked predicate strategies are found for different types of subordinate clause constructions.

Comrie defines action nominals as follows: ‘for a nominalization to be considered an action nominal, rather than a subordinate clause, it must be capable of declining [for case] or of taking prepositions and postpositions in the same way as do nonderived nouns, and with reasonable productivity’ (Comrie 1976:178). Example (71) is an example of an action nominal in Finnish (Riese 2001:70; cf. Stassen 2009:258; LAT = Lative):

(71)	män	ūsn	jal-ke-w-t
	1PL	city:LAT	go-VN-1PL.POSS-LOC
‘When we go to the city.’			

The predicate form *jalkewt* has an overt affix *-ke* that signals that it is a deranked form, and it takes case markings such as the Locative suffix *t*.

There are also non-nominal deranked predicate strategies for different types of dependent complex sentence constructions. We will describe a deranked non-nominal predicate of an adverbial clause as a **converb (str)**.

Haspelmath (1995) defines a converb slightly differently, as the predicate form in an asyndetic deranked adverbial clause construction which does not use the regular subject person indexation inflection (Haspelmath 1995:3–8; see also Koptjevskaja-Tamm 1993:44–45). The English constructions in (72) are instances of converbs (see also Haiman 1985b:ch. 4):

- (72) a. **Having eaten** dinner, he retired to his study.
 b. **Sitting** in front of his desk, he noticed a bright light out the window.
 c. **Struck** by a rock, he fell to the floor.

Haspelmath excludes the deranking strategy that involves only expression of indexation in a different way from a main clause, as in West Greenlandic, which uses the Causative Mood for causal adverbial subordination (Fortescue 1984:65; cf. Haspelmath 1995:5):

- (73) anurli-ssa-mmat aalla-ssa-nngil-agut
 be_windy-FUT-3SG.CAU leave-FUT-NEG-1PL.IND
 ‘Since it is going to be windy we won’t leave.’

However, following Stassen’s definition of deranking in section 15.2.3, these are deranked forms. They are also not action nominals. However, all converbs are deranked forms, and Haspelmath implicitly excludes forms with flags from the converb category. Hence Haspelmath’s category of converbs is close to ours, but somewhat narrower.

The converb construction typically has the same range of semantic relations between the two events typically found in coordinate constructions – temporal (consecutive or simultaneous), causal, etc. Languages may have distinct converb forms for different semantic relations between events. Unlike coordinate constructions, the deranked clause in each of (72a–c) is non-asserted, and the two clauses do not make up a complex figure.

The criterion of ‘reasonable productivity’ for action nominals excludes forms that take just a small number of flags, such as the English Infinitive *to work* in *I began to work*; this form contrasts only with the Bare Infinitive in *I made him work*. It also excludes cases such as the French Infinitive as in *Je commence à travailler* ‘I began to work,’ which takes the flag *à* ‘to,’ unlike the genuinely nominal near-synonym *travail*, which is expressed simply as an Object in the same construction: *Je commence le travail* (Comrie 1976:178). These somewhat tricky examples to analyze incidentally illustrate that converb markers may be diachronically derived from flags (Stassen 2009:259).

Although Comrie describes his definition of action nominal as ‘a rule of thumb’ (Comrie 1976:178), the choice of productive flagging has turned out to be the most useful definition for this strategy, and has been adopted by other typologists working on these constructions (e.g. Koptjevskaja-Tamm 1993:5–6). But what makes the definition valuable are the typological universals that are associated with the strategy of productive flagging of the event denoted by the deranked predicate.

Action nominals almost always lack verbal inflections for tense-aspect-mood and person indexation – that is, they always are “fully” deranked according to criterion (ii) above (Cristofaro 2003:282, 292–93, using an 80-language sample; for discussion of some counterexamples, see Stassen 2009:263–64). Converbs and other deranked forms that are not action nominals may or may not have these characteristic verbal inflections. Hence, action nominals are almost always completely “un-verblike” with respect to verbal inflection. This near-universal pattern justifies the use of ‘action nominal’ as a comparative concept.

On the other hand, action nominals, like other deranked predicates, may vary as to how the arguments dependent on the predicates are encoded (Koptjevskaja-Tamm 1993); see criterion (iii) above. In other words, whether the arguments dependent on the predicate are coded as in main clauses, or as in referring phrases, or as a mixture of the two, does not necessarily distinguish action nominals from deranked predicates – nor does it even distinguish deranked predicates from balanced predicates across languages. In other words, criterion (iii) is independent of criterion (ii), criterion (i), or action nominal status.

Cristofaro (2003) also found a universal in adverbial clause constructions regarding the use of deranking – including action nominals – and the semantic relations between events. Cristofaro examined the following semantic relations of adverbial clauses:

- | | |
|----------------------|---|
| <i>Cause/Reason:</i> | She went to bed because she was exhausted. |
| <i>Simultaneous:</i> | He washed the car while the sun was still shining. |
| <i>Anterior:</i> | He washed the car before driving to the party.
I sold the house before prices fell. |
| <i>Posterior:</i> | He drove to the party after washing the car.
They cleared the plaza after the concert ended. |
| <i>Purpose:</i> | I grabbed a stick to defend myself. |

Cristofaro found a universal hierarchy, the Adverbial Deranking Hierarchy (Cristofaro 2003:168), such that semantic relations towards the left of the hierarchy tend to be balanced, and those toward the right tend to be deranked (more precisely, if there exists at least one deranked adverbial clause construction encoding one of the semantic relations listed below, then there exists at least one deranked adverbial clause construction for all the semantic relations to its right):

Reality Condition, Reason < Anterior, Posterior, Simultaneous < Purpose

15.4 Adverbial Clause Constructions, Coordinate Clause Constructions, and the Source of Conjunctions

In a number of languages, a single complex sentence construction appears to have either a “coordinate” (complex figure) or “adverbial”

(figure–ground) construal. For example, the Mandarin Chinese construction in (74), using a serial verb strategy (see section 13.2.2), can be interpreted in isolation as a coordinate clause, a purpose adverbial clause, or a means adverbial clause (Li and Thompson 1981:596):

- (74) hē diǎn jiǔ zhuàng zhuāng dǎnzi
 drink a.little wine strengthen strengthen gall.bladder
 'Drink a little wine, and it will give you courage.' OR
 'Drink a little wine to give yourself courage' OR
 'Get some courage by drinking a little wine.'

The Burushaski construction in (75), using a deranked strategy, may be interpreted in isolation as either a coordinate clause or posterior adverbial clause (Lorimer 1935:II,112, lines 18–19; retranscribed and glossed in Tikkannen 1995:509; d = verbal prefix *d(V)-*):

- (75) [má-a gútaš-o d-ú-cu-n] já-a díš-uló
 you-ERG corpse-PL D-3HUM.PL.OBJ-bring-CVB I-GEN place-INESS
 bése yáar-e ó-č-á-an
 why down-LOC 3HUM.PL.OBJ-do(DUR)-AUX-HUM.PL.SBJ
 a. 'Why do you bring your corpses and bury them on my land?'
 b. 'Why do your bury your corpses on my land, after bringing them?'

Even in English, a deranked construction using a *to*-Infinitive verb form, identical to the Purpose construction illustrated in example (56) in section 15.3.1, may have a sequential coordinate-like interpretation (Stassen 1985:73):

- (76) John came home **to find** his apartment looted.

In other words, the Mandarin Chinese construction, the Burushaski construction, and even the English *to*-Infinitive construction may be construed as either a symmetric (complex figure) or asymmetric (figure–ground) relation between the events, depending on context. The shared deranked strategy of the Burushaski coordination / adverbial subordination construction in (75) is sufficiently common in languages of Central Asian and neighboring areas for it to have been called the 'Asian converb' (Bickel 1998:385, 395). But if we restrict the term 'converb' to the asymmetric (figure–ground) construal of events (see section 15.3.2), then the Burushaski and similar constructions are not converbs, but constructional forms that may have either an asymmetric or a symmetric construal.

The ambiguity of examples such as (74)–(76) is, of course, limited to a subset of sentences. For example, one reason that (74)–(76) have a coordinate clause interpretation is because the two successive events in each sentence are in temporal sequence: coordinate clause constructions must be tense-iconic (section 15.1.3). If the sentence is not tense-iconic, then it can only be construed as

figure-ground, i.e. it can only be an adverbial clause construction.² However, because coordination and adverbial subordination use the same deranking strategies, it is difficult to determine for a particular deranked complex sentence construction whether it should be analyzed as a coordinate construction, an adverbial subordinate construction – or either, as in examples (74)–(76).

Haspelmath (1995) proposes criteria for distinguishing adverbial subordinate clause constructions using converbs from deranked coordination constructions that employ the same deranking strategy. His criteria are symptoms of the two information packaging properties that were discussed in section 15.1.3 – namely, complex figure vs. figure-ground construal, and pragmatically asserted vs. non-asserted status.

Haspelmath's first criterion is the variable position of the converb clause. If the converb clause position is variable, as in the Russian examples in (77)–(78) (Haspelmath 1995:13), then the construction should be analyzed as an adverbial clause construction:

- (77) vernuvšis' domoj Xèvgun načal novuju žizn'
return:PFV:CONV **home** Khevgun began new life
 'Having returned home, Khevgun began a new life.'

- (78) Xèvgun načal novuju žizn', vernuvšis' domoj
 K. began new life **return:PFV:CONV** **home**
 'Khevgun began a new life, having returned home.'

This is (lack of) tense-iconicity, an indicator of figure-ground information packaging.

Haspelmath's second criterion is the possibility of backwards pronominal anaphora – that is, the possibility that a pronoun in the first clause can refer to a referent expressed in the second clause, as in English (Haspelmath 1995:14):

- (79) a. Talking to **him**, she solved all of **Pedro**'s problems.
 b. After **she**, came home, **Zamira**, solved the problems.
 c. ***She**, came home and **Zamira**, solved all the problems.

This criterion is a symptom of non-asserted status of the adverbial clause, in contrast to the matrix clause which is asserted when it is also a main clause.

The third criterion that Haspelmath uses is whether only the matrix clause can be questioned (Haspelmath 1995:16–17):

² If the two events are simultaneous, however, tense iconicity will not apply. The two sentences *Standing on the corner, John smoked a cigarette* and *Smoking a cigarette, John stood on the corner* are both acceptable (Stassen 1985:97). However, in English, the order of deranked clause and "main" clause can be reversed: *John stood on the corner, smoking a cigarette*. It is possible that fixed order of deranked and "main" clause in simultaneous event constructions is evidence of a coordinate/complex figure construal.

- (80)
- a. What did Alexis buy, having sold his car?
 - b. What did Alexis buy after he sold his car?
 - c. *What did Alexis sell his car and buy?

This criterion has already been described in section 15.1.2 as a criterion for the asserted status of the matrix clause when it is also a main clause, while the adverbial clause remains non-asserted and therefore cannot be questioned. An event functioning as a ground for another event in a figure-ground construal is non-asserted: the ground functions as a reference point that is assumed, not asserted.

The point here is that grammatical structure by itself may not entail asserted status or a complex figure (symmetric) construal. One cannot assume from the grammatical structure whether a clause is asserted or not, or whether the two clauses are conceptualized as a complex figure or a figure-ground structure. Both balanced and deranked strategies are used for both symmetric and asymmetric information packaging functions, even for the same construction in the same language. There are some clues; for example, a construction that violates tense-iconicity cannot represent a coordinate construction. And the context of discourse will often determine what the appropriate interpretation of a deranked construction is. But one must be careful in analyzing such constructions, and in translating them.

The lack of a functional symmetric/asymmetric contrast in construal is also manifested at the phrasal level, in the problem of analyzing comitative ‘with’ vs. coordinating ‘and.’ In many languages, the form expressing the comitative meaning is identical to the form expressing coordination of arguments. Again, one and the same constructional form appears to be construable as either asymmetric (comitative) or symmetric (coordinating), as in Nkore-Kiga (Taylor 1985:58; cf. Stassen 2000:22):

- (81) n-ka-za-yo na Mugasho
 1SG-PST-go-there and/with Mugasho
 ‘Mugasho and I went there/I went there with Mugasho.’

Stassen (2000) gives a detailed typological analysis of ‘and’ and ‘with’ strategies. In argument-level conjoining, the symmetric interpretation ('and') has generally arisen from the asymmetric one ('with') – that is, the comitative flag grammaticalizes into a coordinator (Mithun 1988:339; Stassen 2000:25–40). This process is supported by the existence of intermediate stages.

In some languages, such as Fongbe, the ‘and’/‘with’ phrase may occur in two different positions. When the phrase is separated from the subject phrase, and occurs in the typical position of an oblique phrase, it is construed as a comitative phrase; when it occurs contiguous to the subject phrase, and not in the typical position of an oblique phrase, it is construed as part of a conjoined subject phrase. Examples (82)–(83) illustrate these two alternative constructions in Fongbe (Lefebvre 2004:126; cf. Haspelmath 2004:14–15):

- (82) àsibá yì àxì mè kpódqó kòkú kpó
Asiba go market in with Koku with
'Asiba went to the market with Koku.'
- (83) àsibá kpódqó kòkú kpó yì àxì mè
Asiba with Koku with go market in
'Asiba and Koku went to the market.'

In other languages, the 'and'/'with' phrase may or may not be included in the indexation of the subject phrase on the predicate. If the predicate only indexes the referent of the subject phrase excluding the referent of the 'and'/'with' phrase, then the latter phrase is construed as a comitative argument, as in example (84) from Yakut. If the predicate indexes both the referent of the subject phrase and the referent of the 'and'/'with' phrase, then the latter phrase is construed as conjoined with the subject phrase, as in Yakut example (85) (both examples are from Krueger 1962:87, glossed in Stassen 2000:32):

- (84) en Ivan-nıñ barayıñ
2SG Ivan-with go.2SG.PRS
'You are going with Ivan.'
- (85) Liza Sonya-lıñ oyuttular
Liza Sonya-and/with fall_down.3PL.PST
'Liza and Sonya fell down.'

Mithun identifies two common sources of coordinators of clauses: an additive form (e.g. Mohawk *tanū* 'and' from *tahnū* 'besides'; Mithun 1988:347) or a sequencer (e.g. Tiwi *ki* 'then, and'; Mithun 1988:344–45). The additive form is also recruited for argument coordination (Mithun 1988:340–41).

Many adverbializers are derived from adpositions, the prototypical figure-ground construction (Talmy 1978a; Genetti 1986). Compare the English examples in (86)–(87):

- (86) a. Sharon sat by her daughter.
b. The car starts by pressing this button.
- (87) a. We went home after the party.
b. After we fixed the car, Sandy drove it to Phoenix.

Talmy (1978b) argues that coordinators may originate from a form that expresses a relationship between the current sentence and the previous sentence by referring back to the previous sentence (discourse deixis; see section 2.4), as in (88)–(89):

- (88) He carefully lifted the cover. Then / After that a burst of smoke came out.
(89) I will send you a form. In addition (to that), I will submit your name to the authorities.

The expression *then*, like *after that*, refers back to the first sentence. The expression *in addition* does the same, either implicitly or explicitly (when combined with *to that*). If these expressions are construed as linking the second sentence to the first, then the expressions are reanalyzed as conjunctions joining the two sentences into a coordinate construction. However, Talmy does not provide diachronic evidence linking coordinators with adverbializer + pronoun combinations.

Mithun (1988:345–46) notes the difficulty in distinguishing what she calls ‘discourse adverbials’ – such as English *so*, *also*, and *then* – from coordinators. These particular adverbials, a type of discourse marker (section 15.1.1), are generally analyzed as pronominal, referring back to the preceding independent clause. It seems likely that there is a grammaticalization path from an adverbializer combined with a preceding clause, to a ‘discourse adverbial’ occurring between the two clauses or at the beginning of the following clause having implied or explicit pronominal reference to the preceding clause, to a coordinator joining the preceding and following clauses (see also Mithun 1984b).

Terms Defined in this Chapter

15.1 Complex Sentence Constructions

15.1.1 Discourse and Complex Sentences

discourse markers (*cxn*)

15.1.2 Complex Sentences and the Main–Subordinate Clause Distinction

dependent clause (*cxn*), matrix clause (*cxn*), main clause (*cxn*), subordinate clause (*cxn*), pragmatic assertion (*inf*)

15.1.3 The Information Packaging of Coordinate vs. Adverbial Clause Constructions: A Gestalt Analysis

consecutive (*sem*), anterior (*sem*), posterior (*sem*), tense iconicity (*str*), figure-ground (a.k.a. asymmetric) (*inf*), complex figure (a.k.a. symmetric) (*inf*)

15.2 Coordinate Clause Constructions and Coordination in General

15.2.1 Functional Characterization

coordinate clause (*cxn*), coordinate constructions (*cxn*), coordinand (*cxn*), conjunctive coordination (*cxn*), additive (*sem*), disjunctive coordination (*cxn*), adversative coordination (*cxn*), simple contrast (*sem*), unexpected co-occurrence (*sem*), non-exhaustive list coordination (*cxn*), inclusive disjunctive coordination (*cxn*), exhaustive list coordination (*cxn*), exclusive disjunctive coordination (*cxn*)

15.2.2 Strategies: Coordinators and Related Forms

asyndetic (*str*), syndetic (*str*), conjunction (*str*), coordinator (*str*), monosyndetic (*str*), bisyndetic (*str*), general extender (*str*), summarizer (*str*)

15.2.3 Strategies: Balancing vs. Deranking

balanced (*str*), deranked (*str*), anterior deranked (*str*), posterior deranked (*str*), insubordination (*str*)

*15.3 Adverbial clause constructions**15.3.1 Functional Characterization*

adverbial clause (*cxn*), adverbial dependent clause (*cxn*), simultaneous (a.k.a. overlap) (*sem*), causal (*sem*), purpose (*sem*), apprehensional (*sem*), means (a.k.a. positive circumstantial) (*sem*), negative circumstantial (*sem*), subtractive (*sem*), substitutive (*sem*)

15.3.2 Strategies: Balancing vs. Deranking, and Action Nominals vs. Converbs

adverbializer (*str*), action nominal (*str*), converb (*str*)

15.4. Adverbial Clause Constructions, Coordinate Clause Constructions, and the Source of Conjunctions

16 Reference Tracking in Coordinate and Adverbial Clause Constructions

16.1 Introduction: Reference Tracking Systems

The model of information packaging in language used in this book is based on a fundamental contrast between predication – what is being asserted – and reference – what is being talked about (sections 1.3, 2.1). Chafe (1977) observes another important dimension of this contrast in information packaging. The predicated event – the prototypical predication – is typically expressed only once, as the head of its clause; subsequent clauses communicate additional events. In other words, discourse presents a series of events. On the other hand, the arguments or referents – prototypically persons or things – typically recur across clauses in a discourse – that is, they are referred to multiple times in multiple successive clauses. This fact has not figured in this textbook much so far, as the previous chapters have largely described the structure of single clauses.

Now that we are examining complex sentences with a sequence of clauses, the recurrence of the same referent(s) across clauses must be addressed. The recurrence of reference across stretches of discourse, including a complex sentence construction, is called **coreference (inf)**. An example of a stretch of discourse with coreference from the Pear Stories narratives is given in (1):

- (1) and there's a **man_i** at the top of the ladder,
you can't see **him_i** yet.
[2.4 [.9] A-nd [.95]] then . . . it shifts,
and you see **him_i**,
Ø_i plucking a pear from the tree.

In linguistic analysis, coreference is often notated by subscript indexes such as *i* in (1), which indicates that the same referent recurs in different places in the discourse.

The means by which coreference – and absence of coreference – is expressed is referred to broadly as **reference tracking (cxn)**. Reference tracking is primarily a discourse phenomenon, as in (1), since most reference tracking occurs across clauses in discourse that do not form a complex sentence construction. But reference tracking also plays a role in integrating two events that are expressed in a single complex sentence construction. In particular, if the two events share

Table 16.1 *Systems of reference tracking strategies in coordination and adverbial subordination constructions*

<i>SS construction strategy</i>	<i>DS construction strategy</i>	<i>Further properties</i>	<i>System type</i>
balanced	balanced	overt referring expression or zero anaphora possible in discourse reference	discourse reference
balanced, zero subject	balanced	zero anaphora for subject not possible in discourse reference	conditional discourse reference
deranked	balanced	typically zero anaphora for SS	conditional deranking
deranked	deranked	same construction for SS and DS	absolute deranking
deranked	deranked	systematically differentiated constructions for SS and DS	switch-reference subtype of absolute deranking

a central participant – that is, participants expressed in core argument phrases – then that contributes to the integration of the two events and their expression in a single complex sentence construction. Reference tracking includes zero anaphora (see section 3.3.2), represented by \emptyset , in the last clause of (1).

Reference tracking plays a significant role in the strategies used in complex sentence constructions – both in the coordinate and adverbial clause constructions discussed in this and the following chapter, and in the complement and relative clause constructions discussed in Chapters 18 and 19. The relationship between reference tracking and complex sentence constructions is somewhat different for complement and relative clause constructions, and will be discussed in greater detail in Chapters 18–19. In this chapter, we will focus on reference tracking in coordinate and adverbial clause constructions.

In many languages, there is a contrast between the strategy employed by a complex sentence construction with a highly salient participant shared between the clauses and the same construction without a salient participant shared between the clauses. The shared highly salient participant is generally called the “subject,” but, as we observed in Chapter 6, “subject” as a comparative concept is a problematic category. The relevant notion of ‘salient participant’ for reference tracking in coordination and adverbial subordination will be discussed in sections 16.2–16.3. We will nevertheless retain the widely used terms **same-subject** or **SS (inf)** and **different-subject** or **DS (inf)** to describe the two categories of reference tracking in these constructions.

Reference tracking in coordinate and adverbial clause constructions involves the strategies that were introduced in section 15.2 – in particular, balancing and deranking. Analysis of reference tracking in these constructions has been done by contrasting the same-subject construction and the different-subject constructions for a particular complex sentence construction type – that is, reference tracking strategies are systems of strategies (see section 1.4).

In addition, typological analysis has also primarily focused on languages where one or both constructions use the deranking strategy (but see Foley and Van Valin 1984). One can – and should – also compare same-subject and different-subject constructions when both employ the balanced strategy. Doing so produces a more comprehensive classification of systems of reference tracking strategies in coordination and adverbial subordination constructions. The classification of reference tracking systems used in this textbook is presented in Table 16.1.

16.2 Balanced Reference Tracking Systems

In the first system in Table 16.1, both SS and DS constructions use a balanced strategy. In this system, reference tracking in coordinate and adverbial clause constructions is carried out in the same way as it is between independent clauses in connected discourse. Referring phrases in complex sentence constructions occur based on the accessibility and identifiability of the referent in the same way as in discourse in general in the language. No special conditions are found for reference tracking in complex sentence constructions. In particular, the shared subject or salient participant in the second clause is expressed by a pronoun or zero anaphora just as it would be in connected discourse. For this reason, we will call this a **discourse reference system (str)**. This is probably the most common system when both SS and DS complex sentence constructions are balanced.

Spanish can be used to illustrate a regular discourse reference system for reference tracking in coordination constructions. A shared subject may be zero in the second clause of a coordination construction using the coordinator *y* ‘and,’ as in (2a). But a highly accessible subject referent in an independent clause may also be zero, as in (2b), a later sentence from the same online media article:

- (2) a. ...el Gobierno Nacional volvió a prorrogar los actuales
 the government national again:3SG extend the current
 mandatos en los sindicatos y suspendió los
 mandate in the unions **and** Ø suspended:3SG the
 procesos electorales hasta 2021.
 processes elections until 2021
 ‘The national government again extended the current mandate of the
 unions and suspended elections until 2021.’
- b. En mayo, se volvió a estirar la fecha hasta el
 in May Ø again put_off the date until the
 30 de septiembre.
 30 of September
 ‘In May, [the government] again put off the date to September 30.’
 (www.infobae.com/politica/2020/09/24/el-gobierno-prorrogo-los-actuales-mandatos-en-los-sindicatos-hasta-2021-y-abrio-la-puerta-para-un-acto-por-el-dia-de-la-lealtad, accessed October 16, 2020)

In the second system in Table 16.1, the complex sentence construction is also balanced, but the possibilities for referring phrases are different from those for discourse in general. That is, the possibilities for referring phrases are conditional on the clause being part of the relevant complex sentence construction, hence the term **conditional discourse reference system (str)**.

This type of system is found in English coordination. English requires an unstressed pronoun for highly accessible referents in independent clauses; zero anaphora is not generally possible:

- (3) a. **He** ate breakfast.
 b. *Ø ate breakfast.

However, in a coordinate clause construction – though not an adverbial clause construction – the shared subject in the two clauses may be zero, and in fact a pronoun sounds rather odd.

- (4) a. He_i took a shower and \emptyset_i ate breakfast.
 b. ? He_i took a shower and he_i ate breakfast.
 c. * He_i took a shower before \emptyset_i ate breakfast.
 d. He_i took a shower before he_i ate breakfast.

Languages that require an overt referring phrase for high-accessibility referents in general discourse, which makes clear the distinction between ordinary discourse reference and conditional discourse reference, are rare. However, any system in which zero anaphora is required due to a particular construction rather than general pragmatic principles counts as a conditional discourse reference system.

Foley and Van Valin (1984:354–60) describe the examples of the English conditional discourse reference system in (5a–b) as a ‘switch-function’ reference tracking system (examples from Foley and Van Valin 1984:354):

- (5) a. John_i went to work and \emptyset_i talked to his boss and \emptyset_i did not get a promotion.
 b. John_i went to work and \emptyset_i talked to his boss and \emptyset_i was given a promotion.

The same participant is the Active Voice Subject of the first three predicates in (5a) and the first two predicates in (5b). However, in (5b), the same participant is the P argument of the third predicate. It can only be zero anaphora if the third predicate is put in the Passive Voice, thereby making the P argument the Subject in terms of coding (word order, flagging, and indexation). The condition on zero reference in English restricts zero anaphora to Subjects, so tracking reference to a P argument requires the use of a different voice form.

The switching of voice forms between (5a) and (5b) is what leads Foley and Van Valin to analyze the English pattern as a ‘switch-function’ system; they describe the use of voice for reference tracking for a number of other languages (Foley and

Van Valin 1984:ch. 4). However, it could be equally argued that the use of voice forms signals that the referent is the salient participant in the event, and the use of nonbasic voice constructions such as the English Passive Voice simply reflects the salience of the Subject referent, which then makes it possible to have its reference tracked by means of the conditional discourse reference system. The English Passive, of course, is also used independently of reference tracking.

It is worth noting one system of this type that attracted much theoretical discussion at the time – namely, reference tracking in balanced coordination constructions in Dyirbal (Dixon 1972, 1979b; Heath 1979, 1980). Although some of the data and the analysis are both in dispute, two clear facts are relevant to our discussion. The first is that there are not two but three voice forms that are found. The second is that choice of voice forms is sensitive to the transitivity of the predicate. In particular, this means that it depends on whether the salient participant whose reference is tracked is A (in a transitive clause) or S (in an intransitive clause). (There are other aspects of reference tracking in coordination and other complex sentence constructions in Dyirbal that will not be discussed here.)

The three voice forms in question are the basic voice, the Antipassive in *-ŋay*, and a third voice form in *-ŋura*. Dixon argues that the canonical pattern of reference tracking is between Nominative referents – that is, S or P argument referents (Dixon 1972:71). This is possible with the basic voice. If the coreferential participant in the second clause is A, then the predicate must be in the Antipassive form (Dixon 1972:73–74). These two reference tracking patterns can be observed in the following passage (Foley and Van Valin 1984:355):

- (6) bulgan bayi wabu-ŋga waymba-ju, bili-nqa-ju,
big(ABS) CLI.ABS bush-LOC go_walkabout-NFUT climb_trees-REP-NFUT
 jambun-gu banil-ŋa-ju, ŋuŋba-ju
 grub_wood-DAT split-ANTP-NFUT return-NFUT
 ‘The big one went walkabout in the bush, climbed many trees, split
 grub-wood, and returned to camp;...’

Because *banilŋaju* ‘split [grub-wood]’ is transitive, the verb must be in the Antipassive form for its A participant (the big one) to track with the prior and subsequent S participants.

If the S participant of an intransitive second clause is coreferential with an A participant in the first clause, then the form in *-ŋura* may be used (Dixon 1972:184; gloss from Heath 1979:421–22):

- (7) bala yugu bangul yaŋa-ŋgu mada-n (bayi yaŋa)
 the stick(NOM) the man-ERG throw-NFUT the man(NOM)
 wayŋdi-ŋura
 go_uphill-ŋura
 ‘The man threw the stick and (the man) went uphill.’

These examples show that, in some languages, a different construction is used when one of the ‘subject’ referents is an S participant and the other is

an A participant. Heath (1979, 1980) argues that the Dyirbal system is best analyzed for all the possible coreference relations between an A, S, or P in the first clause and an A, S, or P in the second clause; and he argues for different conditions for the use of the *-gay* and *-ŋura* forms than Dixon proposes. Although Dixon and Heath disagree on what the reference tracking patterns for the Dyirbal voice forms are, we can safely conclude that ‘same subject’ may be encoded in different ways depending on the transitivity of the predicates. We can also conclude that the P argument, a less salient participant, may also have its reference tracked across the clauses of a complex sentence construction. We will see that these same factors recur in an also rare switch-reference system in section 16.4.

16.3 Deranked Reference Tracking Systems

The next two systems are described and named by Stassen (1985:84–88; 2009:264). In **conditional deranking systems (str)**, only SS coordinate or adverbial clause constructions are deranked; the corresponding DS construction is balanced only. Wolof is an example of a conditional deranking system. Example (8) illustrates the deranked SS construction, using a Subjunctive verb form and a Serial Marker *à*; example (9) illustrates the balanced DS construction, with the coordinator *te* (Stassen 1985:169, 84, from Rambaud 1903; SER = Serial Marker):

- (8) dem na ma à o ko
 go IND I SER call.SBJV him
‘I went and called him.’

- (9) nyeu on na te wakh on na ma ko
 come PST IND and tell PST IND I him
‘He came and I told (it to) him.’

In contrast, in **absolute deranking systems (str)**, both SS and DS coordinate or adverbial clause constructions use deranked constructions. For example, Tamil has an absolute deranking system. Example (10) is an instance of a deranked SS construction, and example (11) is an instance of a deranked DS construction (Annamalai 1970:137, glossed in Stassen 1985:77, 85):

- (10) avaru kadite eRudiiTTu naaval moRipeyarttaaru
 he.NOM poetry.ACC write:PRF.GER novel.ACC translate:PST.IND.3SG
‘He wrote poetry and then translated a novel.’

- (11) naan paNam kuDuttu avan sinimaavukku poonaan
 I.NOM money.ACC give:PRF.GER he.NOM movie:to go:PST.IND.3SG
‘I gave (him) money and he went to the movie.’

In the SS constructions in (8) and (10), there is also zero anaphora for the same-subject referent in the second clause, as with the conditional discourse reference system described in section 16.2.

Stassen discovered several universals regarding deranking systems. Zero anaphora is always possible for deranked SS constructions, whether in conditional or absolute systems (Stassen 1985:292; see section 16.5). If the DS construction is deranked, then the SS construction is also; languages with DS deranking but not SS deranking are unattested (Stassen 1985:85–86). This universal underlies the classification of strategies: conditional deranking is SS only, while absolute deranking is both DS and SS.

There are also universals regarding word order and type of deranking system. Stassen found no counterexample in his 110-language sample for the following universal: if a language has anterior deranking (see section 15.2.3), then it has absolute deranking (Stassen 1985:92). Stassen notes that languages with anterior deranking are typically SOV languages. For posterior consecutive deranking, Stassen found that, with very few exceptions, if a language has SVO order, then it has conditional deranking, and if a language has VSO word order, then it has absolute deranking (Stassen 1985:92).

In section 16.1, we noted that the description ‘same subject’ is problematic because ‘subject’ is problematic. In the majority of cases, the shared salient participant is encoded in the same way across the two predicates (via indexation or flagging). Corpus studies in English, French, and Hindi demonstrate that, in deranked adverbial constructions with converbs, the unexpressed subject of the deranked predicate is sometimes the same as a salient nonsubject referent in the balanced clause of the adverbial construction (Stassen 1985:87–88; Haspelmath 1995:32). Examples (12)–(14) illustrate coreference with an experiencer in the dative in Hindi (Haspelmath 1995:33, from Schumacher 1977:51), an experiencer in the accusative in French (Haspelmath 1995:33, from Halmøy 1982:184), and a possessor in English (Haspelmath 1995:34, from Kortmann 1991:43):

- (12) uske mariyal cehre ko dekh-kar Amrit ko kruur
his sickly face DAT see-CVB **Amrit** DAT malicious
aanand mil-aa
joy meet-PST.M
'Seeing his sickly face, Amrit felt a malicious joy [lit. 'a malicious joy came to Amrit'].'
- (13) En traversant la cour déserte, le bruit de ses
CVB cross:CVB the courtyard deserted the noise of his
pas l'impressiona.
steps **him**'impressed
'Crossing the deserted courtyard, the noise of his steps impressed him.'
- (14) Looking out for a theme, several crossed **his** mind.

Haspelmath gives an example in French in which he argues that the unexpressed referent in the deranked clause is only accessible from the discourse context. In the previous context, the man who is the unexpressed referent in the deranked clause has been the most salient referent, and the judgment expressed in the main clause is from his point of view (Haspelmath 1995:35, from Halmøy 1982:179):

- (15) En y réfléchissant, c'était elle qui dès le début
 CVB about.it think:CVB it'was her who from the beginning
 de leur liaison avait pris toutes les initiatives...
 of their relationship had taken all the initiatives...
 'Thinking about it, it was she who had taken all the initiatives from the
 beginning of their relationship...'

Haspelmath's analysis of (15) would suggest that it is possible for the French deranked construction to be used to track reference not just within the complex sentence construction, but rather in the larger discourse context.

16.4 Switch-Reference Systems

Both the SS and DS constructions in Tamil examples (10) and (11) in section 16.3 use the same deranked verb form (the Adverbial Participle). In other languages, the SS and DS constructions regularly use different deranked predicate forms. In such languages, the choice of deranked predicate forms indicates whether the subject referent of the following clause is the same or different from the subject referent of the deranked clause. Systems with deranked forms – sometimes more than two, as will be seen – indicating same-subject or different-subject are called **switch-reference systems (str)** (Munro 1980; Haiman and Munro 1983; Stirling 1993; van Gijn and Hammond 2016). Switch-reference systems are a subtype of absolute deranking systems, since the deranked forms are used in both same-subject and different-subject contexts. Conditional deranking systems are not considered switch-reference systems, because different-subject reference is expressed by a balanced rather than a deranked construction.

Switch-reference systems defined as such largely pertain to deranked coordinate and adverbial clause constructions, and indeed these are the most commonly reported examples (van Gijn 2016:23, who treats deranked coordinate and adverbial clause constructions together). In Australia, switch-reference systems are found in purpose clauses and in a clause type that subsumes both adverbial and relative clause function (Austin 1981:310–11).

In some languages, deranked switch-reference coordination can form long chains of clauses. This is particularly common in New Guinea, where the deranked verb forms are typically called 'medial verbs.' An example from Tauya is given in (16) (MacDonald 1990:218):

- (16)
- | | | | | | | |
|-------|------------------|---------|-------------|-------------|-----------|---------|
| nono | Ø-imai-te-pa | mai | mene-a-te | pai | a?ate-pa | nono |
| child | 3SG-carry-get-SS | come.up | stay-3SG-DS | pig | hit-SS | child |
| wi | nen-fe-pa | yene | wawi | wi | nen-fe-pa | mene-pa |
| show | 3PL-TR-SS | sacred | flute | show | 3PL-TR-SS | stay-SS |
| pai | a?ate-ti | tefe-pa | ?e?eri-pa | toto-i-? | a | |
| pig | hit-CONJ | put-SS | dance-SS | cut-3PL-IND | | |

'She carried the child and came up and stayed, and they hit [= killed] the pigs and showed them to the children, and they showed them the sacred flutes and stayed, and they hit [= killed] the pigs and put them, and they danced and cut [the pigs].'

In long sequences, and even in shorter ones, the chain of coordinate clauses may be interrupted by a subordinate clause. These clauses often do not participate in the switch-reference system, and are "skipped" (see, e.g., Comrie 1998a:428–30). For example, Zuni direct speech complements are skipped (Nichols 1990:94):

- (17) 'hom luk auwa-ka' Ø, le'-kwa-p 'hayi ho'na:wan ča'le_i
 me this find-PST thus-say-DS EXCL our child
 kwa la:k'i-ma to'_i a:šukwa' le'-an-kae
 NEG today-EXCL you go-NEG.NPST.COND thus-APPL-say
 "This one found me," he, said. "Haiyi! Our child, This very day you, may
 not go," they said to him.'

In example (17), *le'kwap* '(he) says thus' is in the DS form although the quote preceding *le'kwap* has the speaker as its Subject; *le'kwap* is in the DS form because it has a different subject from *le'ancae* '(they) say to (him)', the first predicate after the quote.

Rarely, the switch-reference system involves three different forms rather than two: a DS form and two different SS forms, depending on which of A, S, or P are coreferential with A, S, or P in the second clause. Ese Ejja has two different SS systems for adverbial subordinate clauses: one for temporal adverbials, and the other for reason, conditional, and anterior temporal clauses (Vuillermet 2014). (The DS systems appear to be the same: A/S ≠ A/S.) We will illustrate only the temporal adverbial system here.

The two SS forms are *-maxe* and *-axe* (Vuillermet 2014:360); they express the temporal relation 'while, when, after' as well as the reference tracking pattern. The first, *-maxe*, indicates that A/S = A/S. Examples where A=S and S=S are given in (18) and (19), respectively (Vuillermet 2014:362; MOT = motion):

- (18) Esse Ejja ba-maxe oya kwabesa-ani
 Ese Ejja see-TEMP.SS 3ABS fly_off-PRS
 'When (they) see the Ese Ejja, they fly off.'
- (19) majoya poki-ani anikwa-a, jexe-maxe
 then go-PRS walk-PURP.MOT get_full-TEMP.SS
 'Then (we) go for a walk, once (we) are full.'

The *-axe* form is used when P in the adverbial clause is the same as A or S of the matrix clause ('Object-to-Subject coreference,' abbreviated OS). An example where P = A is illustrated in (20) (Vuillermet 2014:363):

- (20) ese=kishi-axe=se ixya-ka-je, maxasha=a
 1IN.ERG=step_on-TMP.OS=1IN.ABS eat-3A-FUT snake.sp=ERG
 'If/when we step on them, *pucararas* (snake species) will bite us.'

One question that has been raised in defining same-subject vs. different-subject in switch-reference systems is the case of partial identity between the two referents, for example 'I' and 'we.'¹ In some cases, included reference is treated as same-subject, no matter whether the superset precedes or follows the subset. Examples (21)–(22) from Huichol illustrate this type (Comrie 1983:26–27):

- (21) taame te-haata?azia-ka, nee ne-petia
 we 1PL-arrive-SS I 1SG-leave
 'When we arrived, I left.'
- (22) nee ne-haata?a-ka, tanaiti te-pekiⁱ
 I 1SG-arrive-SS together 1PL-leave
 'When I arrived, we left together.'

A survey of Yuman languages and a number of other Native North American languages (Langdon and Munro 1979) indicates that, in almost all the languages surveyed, both SS and DS forms were acceptable in the context of partial identity, although the switch-reference system is fairly strict in regular identity–nonidentity contexts. There are some probabilistic universals. Comrie formulates a universal: 'if there is a directional difference depending on whether the referent of the relevant noun phrase [referring phrase] in the main clause is properly contained within that of the dependent clause or vice versa, encoding as if the two noun phrases were coreferential is more likely in the former case' (Comrie 2004:46). Examples (23)–(24) from Zuni illustrate the more likely pattern (Nichols 2000:7):

- (23) hon k^wayi-nan ho' yak'o-ky^a
 1PL exit-SS 1SG vomit-PST
 'We went out and I threw up.'
- (24) ho' k^wato-p hon 'ito-nap-ky^a
 1SG enter-DS 1PL eat-PL-PST
 'I came in and then we ate.'

Variation is also found in the use of switch-reference constructions for weather constructions (see section 11.3.3), which are usually analyzed as not

¹ This question has not been raised for conditional deranking systems, to my knowledge, although it applies there as well.

having a subject. Although choice of SS vs. DS constructions can sometimes be motivated by subtle semantic differences, in other cases both forms are possible. For example, in Cocopa either SS, DS, or a simple asyndetic construction is possible when both events are weather events (Langdon and Munro 1979:330):

- (25) pe:-xsu:r-m/č/Ø šu:ł xsu:r-ya
here-cold-DS/SS/Ø there cold-also
'When it's cold here, it's cold there also.'

As with deranked systems, what counts as the 'subject' role does not necessarily match the category defined by alignment of indexation or flagging. Numerous examples of the SS construction being used for non-'subject' are attested. It is generally concluded that agents and/or topics can serve as the same 'subject' for reference tracking across the two (or more) clauses. In Eastern Pomo, both participants must be agents in their respective events in order to use the SS construction (McLendon 1978:7–8; gloss from McLendon 1975:90, Foley and Van Valin 1984:119–20):

- (26) há: káluhu-y si:má: mérqaki:hi
1sg.A go_home-SS sleep lay_down
'I went home and went to bed.'
- (27) há: xá: qákki-qan wi q'a:lál tá:la
1sg.A water bathe-DS 1sg.P sick become
'I took a bath and got sick.'

In Usan, topicality determines the selection of what counts as the 'same subject' (Reesink 2014:242):

- (28) igam-a munon eng is ibi eng g-ab to-at
stay-2/3SG.DS man that descend feces that see-SS follow-SS
qiter asi [mani eng erer y-ab bug-ab
lift_up_head.SS look.SS [snake that on_top curled_up-SS sit-SS
igam-a] g-arei
stay-2/3SG.DS see-3SG.REMPST
'It was (= the situation was such) (and) the man went down, saw the feces (and) following (the track) he looked up (and) saw the snake sitting curled up there (in the tree).'

The clause (in brackets) has the snake as its subject, but the predicate *asi* 'look' that precedes it is in the SS form because the snake is not topical and the clause in brackets is "skipped" (although the clause in brackets is translated as a relative clause, Reesink argues that it is not a subordinate clause in Usan). *Asi* is in the SS form because its subject is the same as the subject of the following predicate *garei* 'see.'

Even so, numerous instances have been reported in various languages where the putative SS construction is used with different subjects, and the putative DS

construction is used with same subjects, in ways that cannot be explained in terms of “skipping clauses” or tracking reference of agents or topical participants.

For example, in Central Pomo, the seeming switch-reference system is found in three constructions: irrealis, realis, and consecutive realis (Mithun 1993). In all three, most of the time, the putative SS form is used for same subjects and the putative DS form is used for different subjects. But the forms are used in unexpected ways as well. Mithun argues that the primary function of the forms is to encode event cohesion, or lack thereof. In example (29), the so-called SS form *-ba* is used with different subjects because the two events are construed as a single explanation of the lack of documents in a legal situation (Mithun 1993:132; EXP = Experiential Evidential):

(29)	mu:l	?e	k ^h e	pápił=?el	s-ts'á-ba	čaléł
	that	COP	1.OBL	paper=the	with_liquid-destroyed-“SS”	just
	?a:	qów=mča-w=?k ^h e			č'ó:-č'ya	
	1.AG	out=throw.PL-PFV=FUT			happen-SML=EXP	
						‘My papers got wet and I just had to throw them away.’

In example (30), the so-called DS form *=li* is used even for events with the same subject when they are construed as distinct (Mithun 1993:132; PAT = Patientive, DFOC = Defocus):

(30)	to:	lóq	masá:d-a-w=li	?	qá:-č'=wiya
	1.PAT	thing	steal-DFOC-PFV=“DS”		lose-REFL=EXP
					‘I was robbed, and I just felt so lost.’

Stirling (1993:150–51) has suggested that there are six factors that may govern choice of so-called SS (more event cohesion) vs. DS (less cohesion) forms:

- (i) (non)shared salient participants in the events, i.e. the standard reference tracking system
- (ii) (non)agentivity of tracked referent in one of the events
- (iii) (non)shared time of the events
- (iv) (non)shared location of the events
- (v) (non)shared modality of the events
- (vi) (not) part of a cohesive sequence of events.

However, there has not been a systematic typological survey of the factors, apart from reference tracking governing the occurrence of putative SS vs. DS forms.

Finally, two broad diachronic sources of switch-reference systems have been identified (van Gijn 2016:37–42). The first is the grammaticalization of balancing systems. Haiman (1983b) proposes that many Papuan switch-reference (medial verb) constructions originated in one of two balanced coordination constructions. The second is the grammaticalization of distinct deranked forms into SS and DS forms.

One type of Papuan switch-reference construction contrasts an SS construction without any marking with a DS construction containing only person indexes that differ from the simple independent clause indexes. Examples (31)–(32) are from Ono (Haiman 1983b:108; (32) is from Wacke 1930/31:171, glossed in van Gijn 2016:37):

- (31) ηauk ne-ki ari-mai-ke
 tobacco smoke-3SG.DS go-PROG-3SG
 'He_i had a smoke and he_j left.' [he_i ≠ he_j]

- (32) ηauk ne-Ø ari-mai-ke
 tobacco smoke-SS go-PROG-3SG
 'He had a smoke and left.'

In essence, Haiman argues that the Ono SS and DS constructions grammaticalized from the equivalent of the English constructions in the translations of (31)–(32), minus the coordinator. Special pronominal forms in (31) grammaticalized into DS suffixes that indicate the person of the following clause. Zero anaphora in (32) grammaticalized into an SS form.

The other type of Papuan switch-reference construction contrasts an SS construction with person indexation with a DS construction with overt coding of deranking as well as person indexation. Example (33) is from Maring (Woodward 1973:11; cf. Haiman 1983b:115, van Gijn 2016:38; ACT = Actual Aspect):

- (33) pee-ba kan-a-k keese yingub ra mi-a-k
 go-3SG(SS) see-3SG-DS there pig's_house a be-3SG.ACT-DS
 ai-ba...
 sleep-3SG(SS)
 'Having gone, he saw a pig's house was there, it (the pig) was sleeping...'

In example (33), the DS form is *-k* while the SS form is zero; both DS and SS forms also use person indexes. Haiman argues that the DS *-k* form, cognate across many New Guinea Highlands languages, was once a coordinator; hence the difference between same-subject and different-subject forms arose from a difference between asyndetic and syndetic coordination.

The second broad diachronic source of switch-reference constructions is from deranked predicate forms that come to be distinguished in terms of reference tracking. Many of these arise from flags, not unlike deranked predicate forms in general (see section 15.3.2). Austin (1981:331) indicates that many switch-reference markers in Australia are related to locative and allative flags. Relations between switch-reference markers and flags are also attested in Native American languages (see van Gijn 2016:41, and references cited there).

Finally, it has been suggested that the Absolute converb construction in Ancient Greek, and similar constructions in ancient European languages, are DS constructions, and hence may serve as the basis for a contrast with a deranked form whose subject is unexpressed and usually the same as the matrix clause subject

(Haiman 1983b:117–19, 123–26; Haspelmath 1995:17–20, 27–28; Bickel 1999; van Gijn 2016:41–42). Van Gijn compares the Absolute construction functioning to express DS in (34) to the Conjunct Participle construction functioning to express SS in (35) (van Gijn 2016:41; IP = Imperfective Participle):

(34)	ek	dè	toútou	thátton	proió-nt-ðn	sún
	out	PRT	DEM:GEN.SG.M	faster	proceed-IP-GEN.PL.M	with
	kraug-	é	apò	toú	automátou	drómøs
	shout-DAT.SG		from	ART:GEN.SG.M	spontaneity:GEN.SG	run:NOM.SG
	e-géne-to			toís	stratiót-ais	
	PST-become-3SG.IMPF.MID		ART:DAT.PL.NOM		soldier-DAT.PL	

'But afterwards, as they (the leaders) proceeded faster and with a loud shout, the soldiers took to a running pace by themselves.' [Xen. *Anab.* I, 2, 17]

(35)	hoú	dè	tòn	aítio-n	thèò-n
	where	thus	ART:ACC.SG.M	Responsible-ACC.SG.M	God-ACC.SG
	humnoú-nt-es		dikaíos	àn	humn-oî-men
	praise-IP-NOM.PL.M		rightly	PRT	praise-OPT-1PL
					Eros-ACC.SG

'If we thus praise the responsible god, we may rightly praise Eros.'

[Pl. *Symp.* 193d]

In (34), there is a switch in reference from the leaders to the soldiers; in (35), there is continuing reference to us.

More generally, it appears that either balanced coordination constructions or deranked constructions have been repurposed – or exapted, to use a term from evolutionary biology now used in historical linguistics – for reference tracking functions.

16.5 Zero Expression of Arguments and the Predicate in Coordinate Constructions

In this section so far, we have described mostly strategies for reference tracking involving the verb form – in, particular conditional deranking systems, absolute deranking systems, and switch-reference systems. We also described balanced systems in which there is no special strategy for reference tracking (discourse reference systems). This leaves the conditional reference system (section 16.2), in which zero anaphora, used in many languages for ordinary reference tracking, is conditional on coreference between subject referents in the two (or more) clauses in the complex sentence construction. In this section, we discuss the strategy of zero anaphora, or, more generally, zero expression for identical functions across the two coordinands.

In conditional discourse reference systems, zero expression in same-subject coreference is determined by the complex sentence construction. Zero

expression of same subjects appears to be part of a broader system of conditional zero expression under identity in coordinate clause constructions: zero anaphora with identical subjects, zero anaphora of identical objects, and zero expression of identical predicates – which is not technically a coreference relation. This system was explored typologically in the 1970s (see Sanders 1976; Mallinson and Blake 1981:217–57; Stassen 1985:278–88; and references cited therein). The discussion in this section largely follows Stassen.

The typological research discussed here covered zero expression in both balanced and deranked coordinate clause constructions. It did not cover zero expression in languages with an ergative alignment in reference tracking construction; nor did it cover zero expression in adverbial clause constructions. Hence, in this section we will be describing zero vs. overt strategies for identical functions (subject, object, predicate) in coordinate clause constructions in languages using the accusative alignment strategy, i.e. subject defined as A + S, and object defined as P (see section 6.3.2).

The initial observation was based on a contrast between English, which has a basic clausal word order of SVO, and Japanese, which has a basic word order of SOV. English has three distinct constructions depending on whether the subject, the verb, or the object is identical in the two coordinands. We will refer to these three constructions as **subject identity (cxn)**, illustrated in (36); **predicate identity (cxn)**, illustrated in (37); and **object identity (cxn)**, illustrated in (38). The names for these constructions in the generative grammar theory of the era are ‘Coordination Reduction’ (36), ‘Gapping’ (37), and ‘Right Node Raising’ (38); the symbol Ø indicates the “missing” identical element of the construction:

- (36) Sumie patted the dog and Ø hit the cat.
- (37) Sumie saw, the dog and Norio Ø, the tree.
- (38) Sumie patted Ø and Norio hit the dog.

Japanese has the same pattern of zero expression in the translation equivalent of (36), but the opposite pattern in the translation equivalents of (37) and (38) (Mallinson and Blake 1981:221):

- (39) Sumie wa inu o nadete neko o tataita
Sumie TOP dog ACC pat Ø cat ACC hit
‘Sumie patted the dog and hit the cat.’
- (40) Sumie wa inu o Norio wa ki o mita
Sumie TOP dog ACC Ø Norio TOP tree ACC saw
‘Sumie saw the dog and Norio the tree.’
- (41) Sumie wa inu o nadete Norio wa tataita
Sumie TOP dog ACC pat Norio TOP Ø hit
‘Sumie patted and Norio hit the dog.’

Verb-initial languages typically follow the pattern of an SVO language like English. Mallinson and Blake illustrate same-subject and same-object coordinate clause constructions in Welsh, which has basic VSO order (Mallinson and Blake 1981:224, 256):

- (42) Gwelodd Gwen Wyn a tarodd Ifor
 saw **Gwen** Wyn and hit **Ø** Ifor
 ‘Gwen saw Wyn and hit Ifor.’
- (43) Gwelodd Gwen , a rhybuddiodd Ifor, y dyn
 saw Gwen **Ø** and warned Ifor the **man**
 ‘Gwen saw, and Ifor warned, the man.’

Mallinson and Blake do not discuss same-predicate constructions in Welsh.

Example (44) illustrates the same-predicate construction in Jakaltek, also a basic VSO word order language (Craig 1977:38, cited in Stassen 1985:287). The construction uses the adversative coordinator *wal* ‘but’:

- (44) slotoj ix mancu' wal naj hune' lahanxex
 eats she mango but he **Ø** one orange
 ‘She eats a mango, but he an orange.’

The situation with languages with basic VOS order is less clear. Malagasy uses a zero strategy in the first coordinand for same-subject coordination (Keenan 1978:320):

- (45) misotro taoka sy mihinam-bary Rabe
 drink alcohol **Ø** and eat-rice **Rabe**
 ‘Rabe is drinking alcohol and eating rice.’

Keenan reports a similar zero strategy in equivalent constructions in Fijian, Batak, Chumash, and Tzeltal (Keenan 1978:319). However, he also observes that the Malagasy example in (45) uses a coordinator, *sy*, found only with non-clause coordination constructions. It contrasts with *ary*, the coordinator used for clausal coordination (Keenan 1978:319):

- (46) misotro taoka Rabe ary mihinam-bary Rabe
 drink alcohol Rabe **and** eat-rice **Rabe**
 ‘Rabe is drinking alcohol and Rabe is eating rice.’

Malagasy allows for zero anaphora in the second coordinand. Keenan argues this is likely to be ordinary discourse coreference, not conditional coreference as a result of the coordinate clause construction (Keenan 1976:275–76):

- (47) misotro taoka Rabe ary mihinam-ary
 drink alcohol **Rabe** **and** eat-rice **Ø**
 ‘Rabe is drinking alcohol and (he) is eating rice.’

Keenan does not give any examples of a same-predicate coordinate clause construction in Malagasy. Malagasy does not allow zero coding in the same-object construction. Instead, a nonbasic voice can be used to indicate coreferential Ps using the zero strategy in the same-subject construction, again using *sy* (Keenan 1976:275):

- (48) novidin-dRabe sy novonoin-dRakoto ny omby
 buy.PASS-by:Rabe Ø and kill.PASS-by:Rakoto the cow
 ‘Rabe bought and Rakoto killed the cow.’ [lit. ‘The cow was
 bought by Rabe and killed by Rakoto’]

The patterns illustrated in (36)–(45) conform to a set of universals that have been proposed for patterns of zero expression of subject, object, or predicate; we follow Stassen’s formulations here.²

First, not all languages allow zero expression of subject, object, and predicate. Some languages, such as Lebanese Arabic (Sanders 1976:245) and Thai (Mallinson and Blake 1981:237), do not allow zero expression of the predicate. Stassen proposes that if zero expression of an identical predicate is allowed in coordination, then zero expression of an identical subject is also allowed (Stassen 1985:283). Stassen does not consider the same-object construction. Thai allows zero expression of an identical object although not of an identical predicate (Mallinson and Blake 1981:237). This suggests that there may be a hierarchy of subject < object < predicate with respect to zero expression under identity in coordinate clause constructions, although this suggestion is just an extrapolation based on the Thai data.

Stassen also found that if a language uses the deranking strategy in coordinate clause constructions, then it must also use a zero strategy for at least some identity relations (Stassen 1985:292). It is not clear what a plausible motivation for this universal would be.

The most complex crosslinguistic pattern pertains to the position of zero expression – that is, in the first coordinand or the second, in languages with a basic word order for subject, object, and predicate. The patterns conform to two universals. One is that languages of these types avoid zero expression at the ‘boundaries’ – that is, the first element of the first coordinand and the last element of the second coordinand (Sanders 1976:262; Stassen 1985:285). For example, if the language has SOV basic order, a hearer expects to hear a subject first and a predicate last. Hence, zero expression is found in the second coordinand in same-subject coordination as in (39), but in the first coordinand for same-predicate coordination as in (40). If a language has SVO basic order, a

² Some earlier scholars proposed subsuming patterns in which two of subject, verb, or object are expressed by zero: *Sumie and Norio patted the cat; Juanito cut and ate the meat; Sumie patted the cat and the dog*. However, these constructions are better analyzed as coordination of just the subject, the predicate, or the object (Mallinson and Blake 1981:207–13, 233–34, 236–37).

hearer expects to hear a subject first and an object last. Hence zero expression is found in the second coordinand in same-subject coordination in (36), but in the first coordinand for same-object coordination in (38). Stassen suggests that the functional motivation for this universal is the ability to identify the construction in comprehension.

The second universal is that, other things being equal, zero expression in the second coordinand is always possible, crosslinguistically; that is, a following zero expression is the default (Sanders 1976:262; Stassen 1985:284). This universal motivates the pattern where zero expression under identity occurs in the second coordinand. This universal applies to identity relations to the first element in the construction, as in (39) in Japanese. But it also applies to identity relations between the "middle" elements of the basic word order. In Japanese, the middle element is the object, so in same-object coordination as in (41), the zero expression is found in the second coordinand. The functional motivation for this universal is straightforward: it is easier to access the intended referent, or the intended predicate, if that referent or predicate has already been expressed in the immediate discourse context (Sanders 1976:262–63).

The universals appear to apply only to languages with a basic order of subject, object, and predicate. If there is no single basic word order, the patterns are more variable. Absence of basic word order means that a particular element does not reliably identify the boundary of the construction. Thus, the boundary universal does not apply. For example, Bolivian Quechua has free order of S, V, and O in simple clauses. Same-predicate coordination and same-object coordination violate the boundary principle (Pulte 1971:193, 195):

- (49) juanito ayca-ta mik'un, tiyuca-taq papas-ta
 Juanito meat-ACC eat Tiuca-and potatoes-ACC Ø
 'Juanito eats meat, and Tiuca potatoes.'
- (50) juanito rik'un alqu-ta, tiyuca-taq uyarin
 Juanito sees dog-ACC Tiuca-and hears Ø
 'Juanito sees and Tiuca hears the dog.'

Instead, in all coordination constructions involving zero expression in Bolivian Quechua, zero expression always follows overt expression of the identical function – that is, the second universal governs zero expression. Example (51) illustrates this fact for same-subject coordination (Pulte 1971:195):

- (51) juanito rik'un alqu-ta, uyarin-taq misi-ta
 Juanito sees dog-ACC Ø hears-and cat-ACC
 'Juanito sees the dog and hears the cat.'

However, there are other languages lacking a basic word order that even violate the second universal (Mallinson and Blake 1981:248–52). Sanders cites example (52) from Valley Zapotec (Rosenbaum 1977:385; cf. Sanders 1976:246), and (53) from Tojolabal (Furbee 1974:300, n. 2; cf. Sanders 1976:252):

- (52) xwain jumE, abel bizie, ne makU been yuu
 John Ø basket Abel Ø well and Marcos made house
 'John made a basket, Abel a well, and Marcos a house.'

- (53) b'ak'et Hwan, čenek' Čep, sok yi?a tek'el Majwel
 Ø meat Juan Ø beans Joe and took fruit Manuel
 'Juan took meat, Joe beans, and Manuel fruit.'

Both languages allow zero expression preceding the predicate which occurs in the final coordinand, a strategy which violates the second universal. But both languages also allow zero expression following the overt predicate in the first coordinand, a strategy which conforms to the second universal (see Rosenbaum 1977:387–88 for Valley Zapotec, and Furbee 1974:300, n. 2 for Tojolabal).

All of the above examples involve transitive clauses with three elements: subject, object, and predicate. Intransitive clauses, which have only subject and predicate, are a bit more complicated to analyze. Sentences like (54a–b) are generally analyzed as having subject coordination and predicate coordination, respectively:

- (54) a. Miriam and Daphne sang.
 b. Miriam sang and danced.

Clausal coordination is not obviously involved in (54a–b). Examples (55a–b) are better candidates for clausal coordination:

- (55) a. Miriam sang, and Daphne Ø, too.
 b. Miriam, sang, and Ø, danced as well.

Example (55a) is acceptable only if accompanied by an additive particle like *too*, *also*, or *as well*. Stassen notes that, without the additive particle, (55a) would violate the boundary universal (Stassen 1985:288). Example (55b) is acceptable without the additive particle, in which case it is essentially the same as (54b); it could be analyzed as same-subject clausal coordination. Example (55b) conforms to the boundary universal, and (55a–b) both conform to the universal of a zero expression following overt expression. The crosslinguistic research reported here did not discuss zero expression in intransitive clauses; it focused on transitive clauses due to the larger number of possible positions for zero expression. It is plausible that zero expression in coordinated intransitive clauses is constrained by the same universals found with transitive clauses.

Terms Defined in this Chapter

- 16.1 Introduction: Reference Tracking Systems**
 coreference (*inf*), reference tracking (*cxn*), same-subject/SS (*inf*), different-subject/DS (*inf*)

16.2 Balanced Reference Tracking Systems

discourse reference system (*str*), conditional discourse reference system (*str*)

16.3 Deranked Reference Tracking Systems

conditional deranking system (*str*), absolute deranking systems (*str*)

16.4 Switch-Reference Systems

switch-reference system (*str*)

16.5 Zero Expression of Arguments and the Predicate in Coordinate Constructions

subject identity (*inf/cxn*), predicate identity (*inf/cxn*), object identity (*inf/cxn*)

Other Semantic Relations between Events

Comparative, Conditional, and Concessive

17.1

Introduction

In this chapter, we describe a group of somewhat more complex semantic relations between events. These include comparative, conditional, and concessive relations. These semantic relations are interconnected – for example, there are comparative conditional and concessive conditional relations, discussed in section 17.4. Specialized constructions for these semantic relations do not always exist, and, in many cases, the constructions are recruited from related constructions, and ultimately the temporal and causal constructions described in Chapter 15.

17.2 Comparatives and Equatives

17.2.1 Semantics and Information Packaging of the Comparative Construction

The **comparative construction (cxn)** is defined by Stassen as a ‘construction that has the semantic function of assigning a graded (i.e. non-identical) position on a predicative scale to two (possibly complex) objects’ (Stassen 1985:24). An example of the comparative construction in English is found in (1):

- (1) The tree is taller than the house.

The two objects assigned positions on the scale are the **comparee (sem)** – the object being compared – and the **standard (sem)**: the individual to which the comparee is being compared (Stassen 1985:26). In (1), the tree is the comparee and the house is the standard. The **gradable predicative scale (sem)** is the scale implicit in the predicate, on which the comparee is being compared to the standard (Stassen 1985:24). In (1), the gradable predicative scale is height, evoked by the predicate *tall(er)*. The predicate asserts the non-identical positions of the comparee and the standard on the scale defined by the predicate. The predicate *tall* implies a direction on the scale as well as the quality; *short* implies the opposite direction to *tall*:

- (2) That building is shorter than a redwood tree.

Stassen restricts himself to the analysis of comparative constructions in which two distinct objects are being compared, and so does not consider the types of comparatives illustrated in (3) (Stassen 1985:26):

- (3)
- a. The general was more cunning than brave.
 - b. The team plays better than last year.
 - c. The president is smarter than you think.

In (3a–c), one object is being compared to itself. In (3a), the object is compared to itself with respect to a different scalar quality (cunning vs. bravery). In (3b), the object is compared to itself at a different time (now vs. last year). In (3c), the object is being compared to itself in different ‘mental spaces’ (the speaker’s beliefs vs. the addressee’s beliefs; see Fauconnier 1985, and sections 17.3.1 and 18.2.2). Stassen disregards these for the practical reason that crosslinguistic data on these types of comparatives is generally not available. We too will leave them aside for this reason.

17.2.2 Strategies for Comparative Constructions

Stassen divides comparative strategies into two broad categories. One category consists of **derived-case comparatives (str)**. In a derived-case comparative, the flagging of the phrase expressing the standard is derived from the flagging of the phrase expressing the comparee. Usually the flag is the same for the two.

There are two common derived-case strategies for comparative constructions. In the **conjoined comparative (str)**, a coordinate clause construction is recruited, with the comparee as an argument of one clause and the standard as an argument of the other clause. The predicates in the two clauses are antonyms, as in example (4) from Sika (Arndt 1931:13, glossed in Stassen 1985:44), or polar opposites, as in example (5) from Hixkaryana (Derbyshire 1979:67; cf. Stassen 1985:44):

- (4) dzarang tica gahar, dzarang téi kesik
 horse that big horse this small
 ‘That horse is bigger than this horse.’
- (5) kaw-ohra naha Waraka. Kaw naha Kaywerye.
 tall-not he.is Waraka tall he.is Kaywerye
 ‘Kaywerye is taller than Waraka.’

In the **particle comparative (str)**, the other derived-case strategy, the comparee is an argument of the main clause, and the argument expressing the standard is marked with a particle. The flag for the standard usually varies depending on the flagging of the comparee, as in examples (6)–(7) from Latin (Kühner 1879:974; cf. Stassen 1985:29):

- (6) Brutum ego non minus amo quam tu
 B.ACC I.NOM not less love.1SG than you.NOM
 ‘I love Brutus no less than you (do).’

- (7) Brutum ego non minus amo quam te
 B.ACC I.NOM not less love.1SG than you.ACC
 'I love Brutus no less than (I love) you.'

The particle is thus not a typical flag, which marks a fixed case (see below). The particle appears to be derived synchronically or historically from a coordinator (section 15.2.2) or a similitative or equative form translated as 'like' or 'as' (Stassen 1985:189–97; see section 17.2.4). In some languages, including English, the particle appears to be in the process of being reanalyzed as a flag for the standard. Example (8a) sounds very formal or archaic, while (8b), with a fixed Object flag not derived from the flagging of the comparee, is more natural:

- (8) a. John is taller than I.
 b. John is taller than me.

On the other hand, the English particle also may introduce a clause, albeit with the identical predicate obligatorily unexpressed:

- (9) a. Fred is taller than Mary.
 b. Fred is taller than Mary **is** (*tall).

In the particle comparative, the same two propositions – namely, that the scalar predicate applies to the comparee and it also applies to the standard – are expressed directly. However, the proposition that the scalar predicate applies to the standard is usually reduced as in (9b). The proposition that the comparee exceeds the standard on the scale is expressed only indirectly, using a comparative inflection as in English *tall-er* or a free morpheme (or morphemes), as in Latin *non minus* 'no less than.' We will call the marker of comparative degree (affix or free morpheme) a **degree marker (str)**, following Ultan (1972:126). Not all languages have a degree marker accompanying the scalar predicate. Stassen does not examine the degree marker in his typological study, but Haspelmath and Buchholz examine the degree marker in their study of equative constructions (see section 17.2.4).

The second broad category of comparative strategies consists of **fixed-case comparatives (str)**. In fixed-case comparatives, the standard is expressed with a fixed flag.

In the **exceed comparative (str)**, there are two predicates, one asserting that the scalar predicate applies to the comparee, and the other that the comparee exceeds the standard. For the 'exceed' predicate, the comparee is subject and the standard is the object (Stassen 1985:42).

Stassen distinguishes three subtypes of the exceed comparative. In the first type, the predicates may be in a serial verb construction (see section 13.2.2), as in example (10) from Yorùbá (Rowlands 1969:124; cf. Stassen 1985:43). In the other two types, one of the clauses is deranked. In the second type, the expression of the scalar predicate is deranked, as in (11) from Hausa (Newman 2000:33; cf. Stassen 1985:43). In the third type, the scalar predicate is

predicated, while the ‘exceed’ predicate is deranked, as in (12) from Swahili (Stassen 1985:43):

- (10) ó tóbi jù mí (lq)
he **big** **exceed** me (go)
‘He is bigger than me.’
- (11) Musá yá fi Sulè tsawō
Musa 3SG **exceed** Sule **height**
‘A horse is bigger than a goat.’
- (12) mti huu ni mrefu ku-shinda ule
tree this is **big** INF-exceed that
‘This tree is taller than that (tree).’

Stassen suggests the universal that languages that employ the serial exceed strategy use a ‘verby adjective’ strategy in property predication, while languages that employ the deranked exceed strategy use a ‘nouny adjective’ strategy (Stassen 1985:178–82). Stassen explores this distinction in property predication strategies in a later work (Stassen 1997), discussed in section 10.3 of this book.

Finally, there are three fixed-case comparative strategies in which the only proposition expressed directly is that the scalar predicate applies to the comparee. The standard is expressed by an oblique argument phrase that recruits a spatial flag. The **separative comparative (str)** expresses the standard with a flag meaning ‘from,’ as in (13) from Mundari (Hoffman 1903:110, glossed in Stassen 1985:39):

- (13) sadom-ete hati mananga-e
horse-from elephant big-3SG.PRS
‘The elephant is bigger than the horse.’

The **allative comparative (str)** expresses the standard with a flag meaning ‘to’ or ‘for,’ as in (14) from Breton (Ternes 1970:222; cf. Stassen 1985:41):

- (14) jazo bras-ox wid-on
he big-PRT **for-me**
‘He is bigger than me.’

Finally, the **locative comparative (str)** expresses the standard with a flag with locative meaning, as in (15) from Salinan (Mason 1918:71; cf. Stassen 1985:42):

- (15) raga:s-mo' i:n l'wa ti-he:k'
surely-you more man **on-me**
‘You are more of a man than me.’

17.2.3 Universals and Explanations for Comparative Strategies

Based on a 110-language sample, Stassen argues that the strategy used for the comparative construction in a language is recruited from the strategy used for temporal relations in complex sentences in that language (Stassen 1985:59,

Table 17.1 *Universals of comparative constructions (based on Stassen 1985)*

Balancing vs. deranking	Subtype of balancing or deranking of temporal complex sentences	Zero vs. overt identity
Derived-case \supset balanced	Conjoined, Conjoined Exceed (Motu, Fulani type) \supset balanced simultaneous Particle \supset balanced simultaneous or consecutive Conjoined Exceed (Acholi, Temne type) \supset balanced simultaneous (?)	<i>overt identity</i> <i>zero predicate identity</i> <i>zero subject identity</i>
Fixed-case \supset deranked	Exceed \supset conditional simultaneous (or sometimes consecutive) deranking Separative \supset absolute anterior consecutive deranking Allative \supset absolute posterior consecutive deranking Locative \supset absolute simultaneous deranking	<i>zero predicate identity</i>

104–5). Stassen successively narrows down the relationship between comparative and temporal complex sentence strategies, to reach a level of prediction for specific comparative strategies. Stassen's universals are summarized in Table 17.1.

The basic comparative construction analyzed by Stassen can be thought of as involving three propositions: (i) the scalar predicate applies to the comparee to some degree; (ii) the same scalar predicate applies to the standard to a different degree; and (iii) the comparee exceeds the standard with respect to the scale. The different strategies in section 17.2.2 can be analyzed as the recruitment of temporal relation constructions expressing different combinations of these three propositions.

Stassen's broadest universal is that if a language uses a derived-case strategy for the comparative construction, then it has balanced temporal complex sentences; if a language uses a fixed-case strategy, then it has deranked temporal complex sentences. Stassen (1985) does not distinguish between coordinate clause constructions and adverbial clause constructions. However, all of the examples of balanced temporal sentences are instances of coordination, while the examples of deranked temporal sentences are translated as either coordination or adverbial subordination (see section 15.4 on the challenges in distinguishing the two).

The relationship between the comparative construction and the temporal construction is clearest in the conjoined comparative strategy, as in examples (16)–(17) from Gumbayngir (Stassen 1985:185; example [16] is from Smythe 1949:263, and [17] is from Eades 1979:320 [IPA ʃ used for laminopalatal obstruent]):

- (16) njammi djammei ju:n̩gu, ni:gař da:rūi
woman very bad man good
'The man is better than the woman.'

- (17) guju: ni:gar nayingi dulupmi
 LOC.DEICTIC man sit:PRS smile:PRS
 'The man is sitting over there smiling.'

In this and most of the following examples, not only does the comparative construction use just the same type of strategy as the temporal construction, but the two constructions are essentially identical, providing direct evidence of recruitment of the temporal construction for the comparative function. In other languages, the comparative construction and the temporal construction share the same strategy, but not the same morphemes. The assumption here is that the comparative construction probably recruited the temporal construction in the past, but other changes led to divergence in the exact morphosyntactic forms used in the two constructions.

A good example of this diachronic process is illustrated by the other common derived-case strategy, the particle strategy. As noted in section 17.2.2, the particle found in the particle strategy often originates in a coordinator, but is no longer used as such. In the Basque examples in (18)–(19), the synchronic analysis of *baino* 'than' ~ *bainan* 'but' is disputed, although they are very likely to be etymologically related (Stassen 1985:61, 341–42, n. 2; examples from Saltarelli 1988:128 and Lafitte 1962:176, respectively):

- (18) Mikel zu baino azkarr-ago d-a
 Michael you(ABS) **than** intelligent-more(ABS) 3 ABS-PRS(be)
 'Michael is more intelligent than you.'
- (19) Ethorri da, bainan ez gogotik
 come-PRF.PTCP he.is **but** not voluntarily
 'He has come, but not out of free will.'

Both the conjoined comparative strategy and the particle strategy are recruited from a balanced temporal complex sentence. They differ in that the conjoined comparative strategy involves the coordination of two full clauses, while the particle comparative strategy reduces the clause containing the standard, often to just the argument phrase expressing the standard (see section 17.2.2).

Stassen found that the choice of these two strategies depends on the range of use of a zero strategy in coordination, described in section 16.5. There we described a universal discovered by Stassen: that the zero strategy for predicate identity between the coordinands implies a zero strategy for subject identity. That is, some languages use a zero strategy for only subject identity in coordination, while others use a zero strategy for either subject or predicate identity in coordination.

The use of a conjoined vs. a particle comparative strategy depends on the use of zero strategies for identity in coordination in temporal sentences in the language. The conjoined comparative strategy is used when a language does not use a zero strategy for either subject or predicate identity (recall that the zero strategy for subject identity in coordination is to be distinguished from ordinary zero anaphora in discourse; see sections 16.2, 16.5).

In the conjoined comparative strategy, the propositions that the scalar predicate applies to the comparee and that the scalar predicate applies to the standard are expressed directly. The proposition that the comparee exceeds the standard on the scale is not directly expressed. Instead, it is implicit in the opposing values of the scalar predicates (or the scalar predicate and its negation). Stassen describes this conceptualization of comparison, where opposite values of the scalar predicate are expressed separately for comparee and standard, as the ‘independent cognitive strategy’ (Stassen 1985:272); we will simply call it the **independent strategy (str)** for comparatives. There are two independent conjoined clauses with different subjects (the comparee and the standard), and this strategy represents a recruitment of a different-subject simultaneous temporal clause construction for the comparative relation.

The conjoined comparative is the morphosyntactic expression of the independent strategy: different subjects and different, opposing, predicates expressed overtly. The particle comparative strategy is used when a language has the zero strategy for predicate identity. The zero strategy licenses the absence of the identical predicate in the particle strategy. It is also an instance of the independent strategy.

All of the fixed-case strategies occur with languages that use a deranking strategy in temporal sentences. The serial verb subtype of the exceed strategy and its use in temporal relations are illustrated in (20) and (21) from Jabêm (Bradshaw and Czobor 2005:60, 82; Stassen 1985:164):

- (20) tamoc kapôêng kê-lêlêc aê su
father is_big he-exceed me ready
'My father is taller than me.'
- (21) ñapalê kê-taj gêñ-gôñ àndu
boy he-cries he-remain house
'The boy sat in the house crying.'

Stassen includes the serial verb strategy as a deranking strategy. We analyze the serial verb strategy as a complex predicate strategy. In either case, the serial strategy is not a balanced complex sentence strategy.

The overtly deranked exceed strategy and its temporal source is illustrated in (22) and (23) from Margi, where both use *dá* ‘with’ (Hoffman 1963:71, 245; cf. Stassen 1985:167):

- (22) nàjà gá mdía-dá dé dzègàm-kùr
he SBJ exceed-me with tall-ABST
'My house is bigger than your house.'
- (23) nàndà gá shá dá wìwì
they SBJ came with run-INF
'They came running.'

In the exceed comparative, a different pair of the three propositions conveyed by the comparative are expressed directly: that the scalar predicate applies to the comparee, and that the comparee exceeds the standard (Stassen 1985:275).

For the ‘exceed’ predicate, the comparee is subject and the standard is the object. Stassen describes this conceptualization of comparison, in which the relation between comparee and standard is expressed overtly, as the ‘relative cognitive strategy’ (Stassen 1985:275–76); we will call it the **relative strategy (str)**.

Typically, that conceptualization is simultaneous: ‘X is Pred and X exceeds Y.’ However, Stassen reports rare cases where the exceed comparative strategy uses a sequential temporal form, such as Wolof à (Stassen 1985:169, from Rambaud 1903; SER = Serial Marker):

- (24) sa yai gen ne à bakh sa bai
 your mother exceed IND SER is_good.SBJV your father
 ‘Your mother is better than your father.’

- (25) dem na me à o ko
 go IND I SER call.SBJV him
 ‘I went and called him.’

In the exceed comparative, the relative conceptualization involves subject identity: ‘X, is Pred and X, exceeds Y.’ A language therefore requires only conditional deranking – deranking of only the same-subject / subject identity construction – and the zero subject identity strategy in its temporal sentences. Stassen finds that that is the case. That is, the relative cognitive strategy represents the recruitment of a conditionally deranked, same-subject, usually simultaneous temporal clause construction for the comparative relation.

The locative comparative strategy is often identical to a deranked simultaneous temporal sentence, in that both use a spatial flag. For example, in Chukchi the spatial locative ‘on’ is used in both comparison and temporal simultaneity (Bogoras 1922:764, 785; cf. Stassen 1985:147):

- (26) gamga-qlaul-ik qatvum-val-êum
 all-men-on strong-more-1SG
 ‘I am stronger than all (the other) men.’

- (27) ge-riñe-lin pukâr-mñ-ok
 PST-fly_up-3SG arrive-3SG-on
 ‘When he arrived, the other one flew up.’

Stassen compares the locative comparative strategy to simultaneous temporal sentences because the locative conceptualization is static (see section 17.2.2).

The separative comparative strategy is also often identical to a temporal sentence deranking strategy. In Vayu, the spatial separative ‘from’ is used in both comparison and consecutive temporal sentences (example [28] is from Stassen 1985:116, based on Grierson 1909:384; [29] is from Grierson 1909:397–98):

- (28) go wathim-khen cho'-mi
 I him-from small-IND
 ‘I am smaller than him.’

(29)	upo	met'-khen	tāwe-khāta-hā	chhing-ngak	yang-ngak
	father	die-from	son-PL-AG	much	little
	mā	pāpā-hā	ling-me-m		
	not	do-by	get-3PL-IND		

'After the father has died, the sons equally inherit him.'

Stassen compares the separative (and allative) comparative strategy to consecutive temporal sentences because the separative and allative conceptualizations are dynamic.

The Siuslawan example of the allative comparative strategy is a bit different, in that the allative flag found in the comparative construction in (30) is used not for ordinary temporal sequence but for a purpose relation, as in (31) (Frachtenberg 1922:608, 556; cf. Stassen 1985:137, 138):

(30)	s ^E à	hīs	nà-tc		
	he	good	me-ALL		
	'He is better than me.'				

(31)	uł	k!apī-tc	xîntî	ants	tcī
	and	being,low-ALL	went	that	water
	'And the water began to get low.'				

In fact, a more direct connection between the comparative construction and the purpose construction, rather than a simple temporal sequence construction, is found in other languages, including Kanuri (Stassen 1985:144–45), Mangarayi (Stassen 1985:241–42), and Tamil (Stassen 1985:244–45). It is also found with the exceed comparative strategy in Fulani (Stassen 1985:177–78). One can treat these either as counterexamples to the hypothesis, or broaden the hypothesis to allow for recruitment of comparatives from purpose clauses as well as consecutive temporal constructions.

In all of the spatial comparative strategies, the comparison is conceptualized as two extents on a single predicated scale. The comparee and standard are verbalized as arguments of the scalar predicate, on a spatial path where the comparee is the figure and the standard is the ground (Stassen 1985:273–74). The separative and allative comparative strategies conceptualize the spatial relation between comparee and standard dynamically, while the locative comparative strategy conceptualizes the spatial relation as a static one. Stassen describes this conceptualization as the 'ordered cognitive strategy' (Stassen 1985:273–74); we will call it the **ordered strategy (str)**.

This conceptualization implies that the standard has an implicit assertion, roughly: 'X is more Pred, from/to/on Y [is Pred]'. The syntax of this conceptualization is different subject (comparee vs. standard), and reduced clause for the standard. In other words, the strategy used by the source temporal construction must be absolute deranking – different-subject as well as same-subject deranking – and zero predicate identity. In other words, the ordered cognitive strategy represents the recruitment of an absolutely deranked, different-subject, identical predicate, simultaneous or consecutive temporal clause construction for the comparative relation.

There are a few languages that display a strategy seemingly intermediate between the conjoined comparative and exceed comparative strategies, which Stassen describes as a **conjoined exceed comparative (str)** or simply ‘mixed.’ The conjoined exceed strategies express the exceed proposition conjoined with either the proposition that the scalar predicate applies to the standard, as in the Motu example in (32) (Stassen 1985:48, from Lister-Turner and Clark 1930), or the proposition that the scalar predicate applies to the comparee, as in the Acholi example in (33) (Malandra 1952:60; cf. Stassen 1985:48):

- (32) una na namo, ina herea-ia
that is good this exceeds
 ‘This is better than that.’ [lit. ‘That is good and this exceeds it’]
- (33) agulu-ni (iye) lac kato mera
 pot-your (belly) broad exceed mine
 ‘The inside of your pot is broader than mine.’ [lit. ‘Your pot(’s belly) is broad and exceeds mine’]

These examples use a relative cognitive strategy (‘A is Pred and A exceeds B’), but a balanced strategy is used rather than the deranked exceed strategy (Stassen 1985:315–16). The Motu construction does not use the zero subject identity strategy, while the Acholi example does; so Stassen distinguishes them. These examples are rare but show that the relative cognitive strategy does not always entail (conditional) deranking.¹

Stassen’s typological study of comparative constructions is comprehensive in its scope and thoroughness, its documentation of the tight relationship between comparative constructions and temporal constructions, and the explanations of that relationship, in terms of both the morphosyntactic strategies used and the conceptualization of the comparison relation. One interesting conclusion that can be drawn from Stassen’s analysis is that the conceptualization of comparison appears to be dependent on which morphosyntactic strategy or strategies are available in a language’s temporal constructions.

17.2.4 Equative Constructions

Equative constructions (cxn) can be defined in an exactly analogous way to comparative constructions, as a construction that has the semantic function of assigning the **identical** position on a predicative scale to two

¹ Finally, Stassen notes that, in some languages, the comparative construction appears to be directly recruited from a manner adverb construction, as in Navajo (Stassen 1985:150–51), Cebuano (Stassen 1985:154–55, and 340, n. 6), Hausa (Stassen 1985:175), and Mapuche (Stassen 1985:341, n. 4). He suggests that perhaps both manner and comparative are recruited from temporal simultaneity constructions (Stassen 1985:175; see the discussion of manner strategies in section 14.2, based on Loeb-Diehl 2005).

Table 17.2 Comparison of comparative and equative strategies

	Comparative	Equative
derived-case	conjoined	—
	particle	relative-based, particle
	conjoined exceed	relative equal
fixed-case	exceed	equal
	separative, allative, locative	degree associative object unique

(possibly complex) objects. An example of an English equative construction is given in (34) (Haspelmath with Buchholz 1998:279):

- (34) My sister is as pretty as you.

Haspelmath and Buchholz use the terms ‘comparee’ and ‘standard’ as Stassen does; they use ‘parameter’ instead of ‘scalar predicate,’ but we will continue to use Stassen’s term. Equative constructions have been relatively little explored crosslinguistically; Haspelmath with Buchholz (1998) is a typological survey of equative and related constructions in European languages, construed broadly to include languages in western Russia, the Caucasus, Turkey, and Malta; it includes a number of non-European languages in order to capture a wider range of equative strategies. (Most of the data in this section comes from a questionnaire that Haspelmath and Buchholz circulated, unless other sources are cited.) Unlike Stassen, Haspelmath and Buchholz also describe the grammatical form of the parameter (gradable predicate).

Haspelmath and Buchholz describe each element of the construction separately; here we follow Stassen and organize the strategies by whole construction. Since Haspelmath and Buchholz only examine European equative constructions with a smaller sampling of non-European languages, it may not be as comprehensive as Stassen’s classification of comparative constructions. Table 17.2 provides a more direct comparison of the classifications of comparative and equative strategies.

Haspelmath and Buchholz do not find any type of conjoined equative strategy, which would look something like ‘My sister is pretty, and you are pretty also.’ Instead, the primary derived-case equative strategy they discuss is a **relative-based equative strategy (str)** (Haspelmath with Buchholz 1998:287). The relative-based equative strategy is the most common strategy in the European area; a typical example is the Lithuanian construction in (35) (Haspelmath with Buchholz 1998:284):

- (35) Šiandien taip šalta kaip vakar.
today so cold how yesterday
‘Today it is as cold as yesterday.’

Haspelmath and Buchholz analyze the relative-based equative strategy found in Europe as essentially recruited from a relative clause construction (see Chapter 19), albeit lacking a repeated predicate. In all of their examples of this strategy, the relative clause is reduced to just the argument phrase expressing the standard. However, an alternative English translation of (35) includes an Auxiliary Verb: *Today it is as cold as yesterday was*. Because of the reduced nature of the relative clause, the relative clause-based strategy is more analogous to the particle comparative strategy than the conjoined comparative strategy.

The relative-based strategy is a derived case strategy. For example, in Russian, the case marking of the standard matches that of the comparee (Haspelmath with Buchholz 1998:306):

- (36) Mne tak že xolodno kak tebe.
me:DAT so PTCL cold as **you:DAT**
 'I am as cold as you.'

As with the particle comparative strategy, the relative-based equative strategy also tends to be reanalyzed as a fixed case strategy, as if the reduced relative clause marker were a flag and the standard were an argument of the matrix clause predicate. In Swedish, the standard may either match the case marking of the comparee, or occur in a fixed case marking (Object); the fixed case marking is innovative (Haspelmath with Buchholz 1998:308):

- (37) Min syster springer lika fort som du/dig.
 my sister runs equally fast as **you:SBJ/you:OBJ**
 'My sister runs as fast as you.'

In English, the same process is at least as advanced as in Swedish: *My sister runs as fast as ??I/me*.

The relative-based strategy, in European languages at least, appears to recruit specifically a correlative relative clause strategy with an indefinite head (a 'free relative'; see sections 19.2.3, 19.4; Haspelmath with Buchholz 1998:284, 287–88). A German example of a free correlative relative clause is given in (38) (Haspelmath with Buchholz 1998:288):

- (38) Wer das weiss, der bekommt einen Preis.
 who that knows he gets a prize
 'Whoever knows that will get a prize.'

In (38), the identical referent is expressed by a relative pronoun form, itself often derived from an interrogative form, in the relative clause, and by a demonstrative or definite form in the matrix clause. In the equative construction, the matrix clause typically has a demonstrative element associated with the scalar predicate in the matrix clause, for example *taip* in the Lithuanian example (35). The relative/interrogative element – *kaip* in (35) – is associated with what is left of the relative clause – namely, the phrase expressing the standard. The relative

clause remnant also follows the matrix clause in (35), unlike the correlative clause construction in (38).

Haspelmath and Buchholz treat the Lithuanian example in (35) as the most typical instance of the relative-based strategy, where there is a demonstrative element in the matrix clause that morphologically matches the relative/interrogative element in the reduced relative clause. However, there is a great deal of variation in the encoding of the relative-based strategy in European languages. First, in many European languages, there is no demonstrative element in the matrix clause, only the marker of the standard, as in Modern Greek (Haspelmath with Buchholz 1998:291):

- (39) i adhelfi mu íne ómorfi san (kj) eséna
 the sister my is pretty as also you
 'My sister is as pretty as you.'

Another common pattern is reinforcement of the demonstrative element in the matrix clause, often with a form translated as 'equally,' as in Danish (Haspelmath with Buchholz 1998:302):

- (40) Min søster er lige så smuk som dig.
 my sister is equally so pretty as you
 'My sister is as pretty as you.'

Other languages, such as Icelandic, have only the 'equally' element in the matrix clause (Haspelmath with Buchholz 1998:284; note the derived case flagging with *i* 'in'):

- (41) í Rejkjavík er jafn kalt og i Stokkhólmi.
 in Reykjavik is equal cold as in Stockholm
 'In Reykjavik it is as cold as in Stockholm.'

The 'equally' element expresses identical degree, not unlike the comparative element 'more' that is found in examples such as (15) in section 17.2.2.

Haspelmath and Buchholz describe some instances of derived case equative constructions where the particle is not synchronically analyzable as an element of a correlative relative clause (or, for that matter, any other construction). These are genuine examples of a **particle equative strategy (str)**. An example of a particle equative strategy is found in Chechen; note the derived Ergative flag for the argument expressing the standard (Haspelmath with Buchholz 1998:307):

- (42) aħ-a döš-u as sanna
 you.ERG-also read-PRS I.ERG like
 'You read like I.'

There are also **fixed case equative strategies (str)**, as with the comparative construction. The equative analogue to the exceed comparative strategy is the **equal equative strategy (str)**. Haspelmath and Buchholz illustrate a deranked

variant of the equal equative strategy in Nkore-Kiga (Taylor 1985:70; cf. Haspelmath with Buchholz 1998:289):

- (43) n-o-ingana Mugasho oburaingwa
 PRS-you-equal Mugasho height
 'You are as tall as Mugasho.' [lit. 'You equal Mugasho (in) height']

In section 17.2.3, we described a strategy that combines the conjoined and exceed comparative strategy. Haspelmath and Buchholz describe in a footnote a colloquial Spanish construction that appears to represent a combination of the relative-based and equal strategy (Haspelmath with Buchholz 1998:331, n. 11):

- (44) Douglas y Pedro son igual de altos que María.
 Douglas and Pedro are equal of tall.MPL as María
 'Douglas and Pedro are as tall as María.' [also *lo mismo de* 'the same of']

In the construction in (44), the predicate of the matrix clause asserts equality, and the scalar predicate is expressed in a dependent form with *de* 'of.' However, the scalar predicate indexes the gender and number of the comparee, and the standard is expressed in the reduced relative clause seen in (35)–(37) and (39)–(41). This construction can be said to exhibit a **relative equal equative strategy (str)**. The relative equal equative strategy, like the conjoined exceed comparative strategy, is a derived case strategy.

Analogous to the fixed case comparative strategies using a spatial flag is the fixed case **associative equative strategy (str)**, in which the standard is expressed as an oblique associative ('with') argument of the scalar predicate, as in Mandarin Chinese (Haspelmath with Buchholz 1998:284):

- (45) Tā gēn nǐ yíyàng gāo
 she with you one_manner tall
 'She is as tall as you.'

The comparative relation is asymmetric, but the equative relation is symmetric. The latter may also be expressed with a coordinator, just as associative 'with' may co-express argument coordination ('and'). Example (46) is from Breton (Haspelmath with Buchholz 1998:285; PAM = parameter [scalar predicate] marker):

- (46) Ma c'hoar a red ken buan ha c'hwi.
 my sister PTCL run PAM fast and you
 'My sister runs as fast as you.'

The argument coordination variant is also found with certain derived case strategies using an 'equal(ly)' modifier to the scalar predicate, including in English:

- (47) a. Douglas is the **same** age as Pedro (is).
 b. **Douglas and Pedro** are the **same** age.

A fixed case equative strategy without a parallel among comparative strategies is the **degree equative (str)**. In the degree equative strategy, the standard is

marked with a form derived from a noun meaning ‘manner,’ ‘degree,’ or ‘quantity.’ Harar Oromo uses ‘manner’ in (48) (Owens 1985:233; cf. Haspelmath with Buchholz 1998:286); Japanese uses ‘degree’ in (49) (Haspelmath with Buchholz 1998:286), and Turkish uses ‘quantity’ in (50) (Haspelmath with Buchholz 1998:308; STM = standard marker):

- (48) isii-n akká isaaní d'eertuu
she-NOM STM they:GEN tall
'She is as tall as them.' [akká 'manner']

- (49) orenji wa ringo hodo yasuku ari-mas-en
orange TOP apple STM cheap be-POL-NEG
'Oranges are not as cheap as apples.' [hodo 'degree, limit']

- (50) Kız kardeş-im sen-in kadar hızlı yürütür.
girl sibling-1SG you-GEN as fast run-AOR
'My sister runs as fast as you.' [kadar 'quantity']

Haspelmath and Buchholz suggest that manner and quantity are sources of equative degree. For example, in Bulgarian, the quantity marker ('as many/much as') *kolkoto* has come to be used for equality of dimensional property concept words, while the quality marker *kato* is still used for other qualitative property concept words (Haspelmath with Buchholz 1998:300, 291):

- (51) Sestra mi e visoka kolkoto mene.
sister my is tall how_much I
'My sister is as tall as I.'

- (52) Sestra mi e xubava kato tebe.
sister my is pretty how you
'My sister is as pretty as you.'

With respect to manner, the Latin correlative standard marker *quam* was replaced by *quo modo* 'in what way,' which evolved into Spanish *como*, etc. (Haspelmath with Buchholz 1998:293). The Georgian standard marker *rogore* is derived from *ra gvar(a)-c(a)* 'what kind,' etc. (Haspelmath with Buchholz 1998:331, n. 10).

Finally, there are more grammaticalized strategies which may be historically derived from one or another of the strategies described above. Some languages have unique equative “case” affixes, as in West Greenlandic (Fortescue 1984:170; cf. Haspelmath with Buchholz 1998:284; EQC = Equative Case, EQD = Equative Degree):

- (53) Maalia Ammaalia-tut ajur-tiga-aq
Maalia Ammaalia-EQC be_bad-EQD-3SG.IND
'Maalia is as bad as Ammaalia.'

West Greenlandic also has an equative degree affix on the scalar predicate (glossed EQD), not unlike the comparative degree affix *-er* found on some English Adjectives (*tall-er*, *old-er*, etc.). In other languages, such as Estonian and

Indonesian, the scalar predicate with the equative degree affix is combined with a standard expressed as an object rather than an oblique, as in (54) from Estonian (Haspelmath with Buchholz 1998:283):

- (54) minu õde on minu pikk-une
my sister is me tall-EQD
'My sister is as tall as me.'

It seems plausible that the strategies for equative constructions are related to strategies for temporal complex sentences, since many equative strategies are analogous to comparative strategies. Nevertheless, there are some significant differences in comparative and equative strategies, not least the difference between the conjoined comparative strategy and the relative-based equative strategy, that suggest that some equative strategies are recruited from other source constructions.

17.3 Conditionals, Concessives, and Concessive Conditionals

17.3.1 Conditional Constructions

The conditional relationship plays an important role in logic and philosophy as well as ordinary human language, and so its semantics has been studied in some detail. For this reason, conditional constructions attracted attention early in modern syntactic typology.

Conditional constructions (cxn) consist of two clauses, the **protasis (cxn)** (also known as the 'antecedent') and the **apodosis (cxn)** (also known as the 'consequent'). In (55), today being Sunday is the protasis, and the priest being in church is the apodosis (Comrie 1986b:78):

- (55) If today is Sunday, the priest will be in church.

Comrie (1986b) argues that the **conditional relation (sem)** has three basic properties. The first property is material implication – that is, the logical relation of $p \supset q$, where p is the proposition expressed in the protasis and q is the proposition expressed in the apodosis. Logical material implication is defined in terms of truth conditions – that is, the truth or falsehood of the conditional as a whole is a function of the truth or falsehood of its parts (the protasis and the apodosis):

$p = \text{today is Sunday}$	$q = \text{the priest is in church}$	$\text{If } p, \text{ then } q$
true	true	true
true	false	false
false	true	true
false	false	true

Informally, the material implication indicates that the primary restriction on the truth of the conditional proposition is when the protasis proposition is

true: when the protasis proposition is true, the apodosis proposition also has to be true. If the protasis proposition is false, then nothing can be inferred about the truth value of the apodosis proposition: the conditional as a whole is true no matter what the truth value of the apodosis proposition is.

The second basic feature of a conditional construction in ordinary language (but not in logic) has to do with the semantic relation between the events denoted by the protasis and apodosis. There has to be a causal relation between the event denoted by the protasis and the event denoted by the apodosis, such that the protasis event is the causing event and the apodosis event is the caused event (see section 15.3.1). In (55), the causal connection is provided by the social and religious obligations of a priest on Sundays. Example (56), in contrast, is odd or unacceptable because we do not assume any sort of causal connection between the two events, even though the truth conditions of the material implication are satisfied (both protasis and apodosis are true) (Comrie 1986b:80):

- (56) ??If Paris is the capital of France, two is an even number.

Since the conditional relation is defined both in terms of logical implication and causal relation, the semantic use of ‘protasis’ and ‘apodosis’ will be distinguished as ‘protasis/apodosis proposition’ and ‘protasis/apodosis event’ where necessary.

The nature of the causal connection varies across conditionals, and is commonly divided into three types (Comrie 1986b:81; Sweetser 1990:113–25). The three types are illustrated in (57):

- (57) a. If you touch it, it will explode.
 b. If you don’t see your bicycle outside, then someone has stolen it.
 c. If you want to know, ten isn’t a prime number.

Example (57a) is an instance of a **content (causal) relation (sem)** between protasis event and apodosis event: your touching it causes it to explode (Sweetser 1990:113). This corresponds to the prototypical notion of causation. In the content relation, the protasis event must precede or coincide temporally with the apodosis event, as is necessary in prototypical causation.

Example (57b) is an instance of an **epistemic (causal) relation (sem)** between protasis proposition and apodosis proposition: the “causal” relation is one of inference. In an epistemic conditional, the apodosis event may precede the protasis event, as in (57b) where the stealing event precedes the not-seeing event. The sequence that matters is the inferential sequence from the protasis proposition – the premise – to the apodosis proposition – the conclusion.

Finally, example (57c) is an instance of a **speech act (causal) relation (sem)** between protasis and apodosis: the protasis describes a condition on performing a speech act that leads to the performance of the speech act expressed by the apodosis. In (57c), the protasis is the condition that the listener wants to be informed, and the apodosis is the performance of the speech act.

All three of these relations have been described as “causal” although the epistemic relation is between two propositions, and the speech act relation holds between a condition for a speech act and its performance. In fact, “ordinary” causal adverbial constructions have the same three types of “causal” relations (Comrie 1986b:81):

- (58) a. *Content*: Because he touched it, it exploded.
- b. *Epistemic*: John is a thief, because I saw him stealing.
- c. *Speech act*: Since you asked, ten isn’t a prime number.

The examples in (58a–c) provide further confirmation of the close semantic relationship between causal and conditional functions.

The third basic property of conditionals is that both protasis proposition and apodosis proposition are hypothetical. That is, they are neither necessarily true nor necessarily false in the real or actual world. Such propositions are often described as holding in a possible world or in a **mental space (sem)** (Fauconnier 1985) – that is, a hypothetical world that is present in a person’s thoughts or cognition. The hypotheticality of protasis and apodosis is what primarily distinguishes conditional constructions from causal constructions.

Fillmore (1990a:142; 1990b:122) characterizes different degrees of hypotheticality with respect to the protasis as **epistemic stance (sem)**; Comrie (1986b:88–93) refers to degrees of hypotheticality and Givón (1994:288) to degrees of epistemic certainty. Fillmore defines epistemic stance as ‘the speaker’s commitment to the actuality of the proposition expressed in the [protasis clause]’ (Fillmore 1990b:122).

Fillmore distinguishes three epistemic stances: positive, neutral, and negative (Fillmore 1990b:122; he uses different terms in the 1990a paper). **Neutral epistemic stance (sem)** refers to a neutral attitude: the proposition may be true or false in actuality according to the speaker. Examples (57a–c) are all instances of a neutral epistemic stance.

Negative epistemic stance (sem) refers to a negative attitude: the speaker assumes, or at least acts as if, the proposition is false in actuality. The English Counterfactual construction in (59) presents a negative epistemic stance toward the protasis proposition (Comrie 1986b:89):

- (59) If you **had arrived** on time, we **would have finished** by now.

In (59), the speaker assumes that the protasis proposition is false in actuality, and we infer that the apodosis is false in actuality as well.

Comrie argues that the English Counterfactual Construction does not necessarily entail that the protasis or apodosis are false in the real world. In (60), B’s response using the Counterfactual Construction is more likely to be construed as an invitation for A to kiss B, not as an assumption that A will not kiss B (Comrie 1986b:89–90):

- (60) A: Will you buy me a beer?
B: If you **gave** me a kiss, I’d buy you a beer.

In (61), the apodosis is explicitly asserted to be true (Comrie 1986b:90):

- (61) If the butler **had done** it, we **would have found** just the clues that we did in fact find.

These examples indicate that negative epistemic stance can be used rhetorically in discourse (see also Fillmore 1990b:122). Comrie notes that B's use of the Counterfactual Construction in (60) implies an assumption of a low likelihood that A will actually kiss B (and note that this is a future event, over which there is less certainty anyway; see below). Example (61) seems best in a context where the proposition that the butler didn't do it is currently being entertained, and the Counterfactual Construction is used to lead the interlocutors from the presumed falsehood of the protasis to its acceptance as true.

We deliberately skipped over **positive epistemic stance (sem)**. Positive epistemic stance refers to the speaker's assumption that the protasis is true in actuality. Positive epistemic stance sentences correspond to causal or temporal adverbial sentences (Fillmore 1990a:145):

- (62) a. **Because** he left the door open, the dog escaped.
b. **When** he opened the door, the dog escaped.

In other words, we could describe causal or temporal adverbial constructions as conditional constructions with positive epistemic stance (a temporal adverbial like [62b] often implicates a causal relation in context). Or we could describe conditional constructions as causal constructions with neutral or negative epistemic stance. We will, however, follow tradition and use the term 'conditional' specifically for the relations in (57a–c) with neutral or negative epistemic stance. Non-positive epistemic stances are grouped together as **hypothetical (sem)** or **non-factive (sem)** situations.

There remains one other functional type of conditional to discuss here, illustrated in (63):

- (63) **If/When/Whenever** a dog starts barking, I run away.

Example (63) describes a habitual event in the protasis clause, and its consequence in the apodosis clause. Example (63) could be true even if I never encountered a barking dog, but more generally it covers a range of cases rather than a specific factual event. In (63), *if* and *when* are virtually interchangeable without a major semantic difference. Farkas and Sugioka (1983) analyze such examples, which they call 'restrictive *if/when* clauses,' as conditionals (see their article for a detailed formal semantic analysis of these and related constructions). We will call these **generic conditional relations (sem) / constructions (cxn)** (see also Fillmore 1990a:152).

We turn now to strategies for the expression of conditional constructions. Given the close relationship between conditional constructions and causal or temporal adverbial constructions in terms of meaning, one would expect a close relationship between the strategies for conditionals and the strategies for causal

or temporal adverbial clause constructions. In English, the generic conditional in (63) may use either *if* or recruit temporal *when*. In Mandarin Chinese, an asyndetic construction such as the one in (64) has either conditional, temporal or causal interpretation (Comrie 1986b:82, from an unpublished presentation by Charles Li and Sandra A. Thompson):

- (64) Zhāngsān hē jiǔ wǒ mà tā
 Zhangsan drink wine I scold him
 'If Zhangsan drinks wine, I scold him.' or
 'When Zhangsan drinks wine, I scold him.' or
 'Because Zhangsan drinks wine, I scold him.'

In German, a dependent clause introduced by the adverbializer *Wenn* is either a conditional or a temporal adverbial in the present tense, as in (65); in the past tense, different adverbializers are used; see (66a–b) (Comrie 1986b:82, 97, n. 7):

- (65) Wenn er kommt, gehe ich weg
 ADVR he comes go I away
 'If he comes, I leave.' or
 'When he comes, I leave.'

- (66) a. Wenn er gestern ankam, war er zu spät
 ADVR he yesterday arrived was he too late
 'If he arrived yesterday, he was late.'
 b. Als er gestern ankam, war er zu spät
 ADVR he yesterday arrived was he too late
 'When he arrived yesterday, he was late.'

Conditional constructions are usually encoded as adverbial clause constructions, and use the same strategies, such as an adverbializer or a deranked verb form, the latter often called a 'subjunctive.' Either strategy may also be employed to distinguish epistemic stance: either the temporal/causal positive stance vs. non-positive stance, or degrees of hypotheticality or non-positive epistemic stance. English uses adverbializers to distinguish positive stance (*when/since/because*) vs. non-positive stance (*if*). Maltese uses adverbializers to distinguish lower hypotheticality – roughly, neutral stance (*jekk*) – vs. higher hypotheticality – roughly, negative stance (*kieku*; Comrie 1986b:93). Deranked conditional forms may also distinguish degrees of hypotheticality, as with Turkish *gelirse* 'if I come' vs. *gelsem* 'if I were to come' (Lewis 1967:130; cf. Comrie 1986b:87).

However, there has been no systematic crosslinguistic study of the relationship between the form of conditional constructions and the form of corresponding positive epistemic stance temporal or causal adverbial clause constructions. And there are other constructions that some conditional constructions are formally similar to.

The protasis clause of a conditional construction is coded by topic markers in many languages (Haiman 1978b). Hua illustrates the interconnections between

the marking of topics and conditionals. A sentence with an argument phrase marked as topic is given in (67) (Haiman 1978b:571):

- (67) dgai-mo-ve baigu-e
 1SG.EMPH-CONN-TOP will.stay-1SG
 'As for me, I will stay.'

Haiman analyzes the 'connective particle' *-mo* as a marker of a potential topic, and *-ve* as a marker of actual topics. The connective particle also occurs in the Hua conditional construction (Haiman 1978b:565; gloss added):

- (68) e-si-ma-mo baigu-e
 come-3SG.FUT-MED-COND will.stay-1SG
 'If he comes, I will stay.'

Haiman notes that conditional markers in Turkish and Tagalog can function as contrastive topic markers (Haiman 1978b:577).

The topic marker *-ve* is also used for polar interrogatives, and an alternative construction for conditionals in Hua uses an interrogative form for the protasis (Haiman 1978b:570):

- (69) e-si-ve baigu-e
 come-3SG.FUT-INT will.stay-1SG
 'If he comes, I will stay.' [lit. 'Will he come? I will stay']

Haiman notes that polar interrogatives can function as the protases of conditional constructions in English, French, and Turkish, and conditional conjunctions in Russian and Tzotzil are derived from polar interrogative particles (Haiman 1978b:570). Examples of English interrogative constructions functioning as conditional protases are given in (70a–b) (Haiman 1978b); in (70b), the protasis inverts the order of Auxiliary and Subject, just as in the English polar interrogative *Had you visited Romania before?*:

- (70) a. **Is any among you** afflicted? Let him pray.
 b. **Had it** been otherwise, I would have told you.

A polar interrogative implies neutral epistemic stance: the speaker does not know whether the proposition she is asking about is true or not. This fact motivates the shared strategy between a polar interrogative construction and the protasis of the conditional construction (Haiman does not suggest a specific direction of change).

The motivation for the shared strategy between topic and conditional protasis is that both introduce shared knowledge that serves as a framework for the interpretation of the following clause (the simple clause for a topic, the apodosis for the protasis; Ford and Thompson 1986:361). Ford and Thompson (1986) test this hypothesis in English written and spoken discourse, and found it supported, particularly for conditional constructions where the protasis precedes the apodosis.

Across languages, the dominant or default pattern is for the protasis to precede the apodosis, although it may also follow in some languages such as English. Greenberg proposes this as a universal (Greenberg 1966:84; see also Comrie 1986b:83–84):

Universal 14: In conditional statements, the conditional clause [protasis] precedes the conclusion [apodosis] as the normal order in all languages.

Comrie notes that in the Mandarin Chinese construction in (64), the protasis must precede the apodosis. In Ngiyambaa, both protasis and apodosis of the counterfactual (negative epistemic stance) conditional are marked with the suffix *-ma*, but the first clause is always interpreted as the protasis (Donaldson 1980:251–52; cf. Comrie 1986b:84 CTRFCT = counterfactual):

(71)	ginu:-ma=ni	bura:y	giyi
	your.OBL-CTRFCT=3ABS.VIS	child(ABS)	be.PST
	ŋjindu-ma=ni	yada	gurawiyi
	you.NOM-CTRFCT=3ABS.VIS	well	look_after.PST

'If this child had been yours, you would have looked after it well.'

A conditional relation may also be expressed by a coordination construction (the example refers to two songs almost always performed together by the Grateful Dead):

- (72) TD © - Nov 17, 2007 9:39 pm (#16809 Total: 17557)
Seriously - do you ever skip the China Cat to get to the Rider?
 Murphy, you do that and the terrorists have won, that's all I can say.

The likely explanation for this pattern is that the protasis and the apodosis both occur in the same possible world or mental space. Hence, there is a degree of symmetry, allowing for a complex figure construal. The sequence of protasis before apodosis may also reflect the crosslinguistic tendency for the topic to precede the comment, and iconicity with respect to the fact that the causing event precedes or is a precondition for the caused event.

Perhaps the greatest complexity in strategies for conditionals pertains to the interaction of time reference and epistemic stance. One might expect a simple matrix representing time reference (past, present, future) and epistemic stance (positive, neutral, negative), with independent encoding of time reference and epistemic stance. This is indeed the case in some languages. However, when non-positive epistemic stances are involved, expressions of time reference – that is, tense – may be recruited to express epistemic stance.

Perhaps the most common phenomenon is the recruitment of a past tense predicate form to express non-positive epistemic stance – that is, a hypothetical event. James (1982) documents this phenomenon for a dozen Indo-European languages, and languages from other families in other parts of the world. Her first universal is that, if a language recruits a past tense form for

any non-positive epistemic stance, it will be for negative epistemic stance. The clearest instances of this phenomenon pertain to present time reference conditionals. A typical example is Tonga (James 1982:380, from Collins 1962), and its English translation:

- (73) (kuti) na-a-li ku-yanda kwiiya, na-a-ta-li ku-li
 (if) TEMP-PST-be INF-want to.learn TEMP-PST-NEG-be INF-be_at
 banyina-kulu ino
 his.grandmother now

'If he wanted to learn, he wouldn't be with his grandmother now.'

Although the hypothetical event has present time reference, the English Past Tense is used in the protasis, and a Future-in-the-Past Tense form (*will* + Past > *would*) is used in the apodosis.

James proposes that, if past tense forms are recruited for negative epistemic stance, then they will occur in at least the apodosis clause. Example (74), from Moose Cree, illustrates a language where the past tense form occurs only in the apodosis clause (James 1982:380):

- (74) kiša:spin iskwe:wit, katamilona:kosi:pan
 if he.be.a.woman he.will.be.good_looking.PST

'If he were a woman, he would be good-looking.'

It is also possible for a past tense form to be recruited for neutral – or at least, less than negative – epistemic stance. In particular, James finds that for future time reference conditionals, there may be a contrast between a more neutral epistemic stance expressed by the present tense and a less neutral, more negative epistemic stance expressed by the past tense form, as in English (James 1982:388):

- (75) a. If John **comes** tomorrow, I **will** give him the money.
 b. If John **came** tomorrow, I **would** give him the money.

James finds this contrast in French, Old Irish, Russian, Tonga, Haya, Cree, and Garo. Example (76) illustrates the more negative epistemic stance with a past tense form in Garo (Burling 1961:35; cf. James 1982:389):

- (76) na'a indake dakode namginokcim
 you thus do.if good.FUT.PST
 'If you did this, it would be good.'

Again, if only one clause uses a past tense form to indicate a less neutral / more negative epistemic stance, it is the apodosis.

Comrie (1982b; 1986b:95–96) shows that the combination of future time reference and non-positive epistemic stance (hypotheticality) is quite complex crosslinguistically. If a language uses a non-future form for hypotheticality, it is more likely to be present, as in (77) from English. The non-future form may be a deranked ('subjunctive') present form, as in (78) from Modern Eastern

Armenian (note that the apodosis verb form is Future). Or the non-future form may be a unique form as with the Portuguese so-called Future Subjunctive, as in (79) (all examples from Comrie 1986b:95; the gloss for (78) is from Bernard Comrie, pers. comm.):

- (77) If he **comes** tomorrow, I'll run away.
- (78) yet^he du gas, yes kə-gənam
if you come.PRS.SBJV.1SG I FUT-go.PRS.SBJV.1SG
'If you come, I will go.'
- (79) Se você não vier, eu vou sair.
if you NEG come.FUTSBJV I will leave
'If you don't come, I will leave.'

Comrie notes that only the protasis uses a non-future tense form; the apodosis is in the expected future form. This pattern is confirmed by a larger sample from Dahl's (1985) tense–aspect survey (see Croft 2012:138) – but it is the opposite pattern from that found for the use of the past tense for hypotheticality, where if any clause uses the past tense form to indicate a higher degree of hypotheticality, it is the apodosis.

Finally, the recruitment of past tense forms for non-positive epistemic stance is found in other constructions than the conditional constructions that presuppose a non-positive epistemic stance (James 1982) – for example, the complements of wishing events described in section 18.2.2 (see also James 1982:383–84). These facts suggest that much of what is distinctive about conditional constructions as complex sentence constructions primarily has to do with their non-positive epistemic stance.

17.3.2 Concessive Constructors

Concessive relations (*sem*), like causal relations, have positive epistemic stance – that is, they presuppose the factuality of both propositions expressed in the two clauses (König 1988:146):

- (80) I did not go out **because** it was raining.
(81) **Although** it was raining, I went out.

Concessive relations, unlike causal relations, express an **unexpected** relationship between the two events. This can be analyzed such that 'although *p*, *q*' presupposes 'if *p*, then normally not *q*' (König 1988:146–47). For example, the concessive sentence in (82) presupposes something like the propositions expressed in the conditional constructions in (83a) or (83b) (König 1988:146–47):

- (82) Although John had no money, he went into this expensive restaurant.
(83) a. If one has no money, one normally does not go into an expensive restaurant.
b. If John has no money, he normally does not go into an expensive restaurant.

Comrie argues that the unexpected relation is essentially a negative causal relation: the causal relation underlying ‘if *p*, then normally not *q*’ is denied in the particular instance expressed by the concessive relation (Comrie 1986b:81–82). Supporting the (negative) causal nature of the concessive relation, one finds the three causal relations – content, epistemic, and speech act – in concessives as well. Examples (84) and (85), from König (1988:148), illustrate the content and epistemic relations; a speech act example is found in (86):

- (84) Even though he had not eaten for days, he looked strong and healthy.
- (85) Even though this solution would be harmful to our enemies, the damage done to us would be even greater.
- (86) Although you don’t want to hear this, you will never convince her to marry you.

Since the relation between events in a concessive relation is ultimately causal in character, we will use the terms ‘protasis’ and ‘apodosis’ for the causing event (*p*) and the caused event (*q*) in concessives as well as conditionals (for that matter, the terms can be used for ordinary causal adverbial clause constructions too).

König’s study is based on a 75-language sample (König 1988:163–64, n. 1). König notes the existence of deranked strategies for a **concessive construction (cxn)**, mentioning Malayalam and Tibetan (König 1988:146). Concessive relations may also be expressed by converb forms in English, although it requires some contextual support (König 1988:150):

- (87)
 - a. ?Not **having** any money, he went into this expensive restaurant.
 - b. Not **having** any money, he **nevertheless** went into this expensive restaurant.

König’s analysis primarily focuses on the types of conjunctions used in concessive constructions. Concessive relations between events may be expressed by a coordinate construction – namely, adversative coordination (section 15.2.1; cf. König 1988:151), using an adversative coordinator such as English *but*:

- (88) John had no money, **but** he went into this expensive restaurant.

Some languages lack a concessive adverbial clause construction, but all the languages in König’s sample have adversative coordination, which can be used to express the more specific concessive relation; one of the meanings of the adversative coordination relation is unexpected co-occurrence (see section 15.2.1). König also demonstrates that, in the right context (i.e. when one expects not *q* to be true when *p* is true), simple coordination can express a concessive relation (König 1986:235; see also Stassen 1985:74):

- (89) We can give him the VIP treatment, **and** he is not content.

Concessive conjunctions, usually adverbializers, tend to be etymologically transparent – that is, the meanings that are recruited for concessive function are easy to identify. König identifies five common sources for concessive

conjunctions (König 1988:1521–56). The first source consists of notions of obstinacy, spite, contempt, such as English *in spite of* from *spite*, and the German example in (90) (König 1988:153):

- (90) Er ging trotz des schlechten Wetters aus.
he went **despite** the bad weather out
'He went out despite the bad weather.' [*trotz* 'against']

König argues that the first source of concessive conjunctions originates in notions of human opposition and became generalized to a more abstract notion of conflict associated with unexpectedness (König 1988:157–58).

The second source is a free-choice quantifier such as English *anyway* or *however*. A Finnish example is given in (91):

- (91) Tulen, vaikka olen sairas.
I.will.come **although** I.am ill
'I'll come, although I am ill.' [cf. *vaikka kuka* 'whoever,' *kuka* 'who']

König includes in this category concessive conjunctions derived from a verb of volition (Haiman 1974:348–51). Haiman gives the example of Hungarian *akár*, cognate with the predicate *akar* 'want' (Haiman 1974:348):

- (92) Akár hogy nyög, legyél vel-e szigorú
ever how whine.3SG be.2SG.IMP COM-3SG strict
'However (much) he whines, be strict with him.'

The third source is a conditional marker (section 17.3.1), actually or etymologically conditional, combined with an additive or emphatic focus marker (see section 11.4.2). König gives an example from Malayalam (König 1988:154):

- (93) maṇa peyyuka-āñe-enkil-um, John purattu pokunnu
rain fall.INF-AUX-**if-also** John out go
'Even though it is raining, John is going out.'

The second and third sources are based on the strategies for concessive conditional constructions, which will be discussed in section 17.3.3. König suggests that pragmatic strengthening shifts the meaning of the adverbializer from the neutral epistemic stance characteristic of the conditional concessive to the positive epistemic stance that is presupposed by the concessive relation.

The fourth source is an emphatic assertion of truth, as in (94) from Bahasa Indonesian, which also contains an adversative coordinator (König 1988, from Kähler 1965:181):

- (94) Sungguh-pun badannaja ketjil, tetapi amat kuat.
true-even this.body small **but** very strong
'It is true that this body is small, but it is very strong.'

The emphatic assertion of truth is due to the unexpected nature of the concessive relation: the hearer will not expect the apodosis to be true.

The fifth and final source is the expression of remarkable co-occurrence, via not preventing the state of affairs (hence some negative marking); simultaneity or unhindered continuation; or concomitance of two facts. König does not give any example sentences, though he lists concessive conjunctions from many languages historically derived from this source (and for the previous four sources). An English example of a sentence using a conjunction derived from an expression of remarkable occurrence is given in (95):

- (95) Numerous fires have swept through the town; **nevertheless**, the wooden windmill still stands.

König suggests that the use of remarkable co-occurrence expressions for the concessive relation is due to informational enrichment, where a contextually implicated concessive meaning becomes conventionalized. He notes that even a meaning of temporal simultaneity can be enriched to a concessive meaning (König 1988:159):

- (96) Even **as** it admits of a serious pollution problem, East Germany is substituting cheap brown coal for imported oil.

17.3.3 Concessive Conditional Constructions

A **concessive conditional construction (cxn)** asserts that the state of affairs described in the apodosis will be true under the entire range of conditions described in the protasis. The examples in (97)–(99) illustrate the three common strategies used to express **concessive conditional relations (sem)** (König 1986:231; terminology from Haspelmath and König 1998:563):

- (97) *Scalar*: Even if you drink (only) a little, your boss will fire you.
 (98) *Alternative*: Whether he is right or not, we must support him.
 (99) *Universal*: However much advice you give him, he does exactly what he wants to do.

The protasis has neutral epistemic stance: we do not know which of the range of conditions described by the protasis holds in actuality. Typically, the apodosis has positive epistemic stance, since it holds under the full range of conditions described in the protasis (though see König 1988:164, n. 5; Haspelmath and König 1998:572–73).

We describe these three ways of expressing the concessive conditional relation as strategies since they recruit three different constructions in order to express the full range of conditions under which the apodosis holds. In this respect, they are similar to the three ‘cognitive’ strategies for comparative constructions (independent, relative, and ordered strategies) described in section 17.2.3.

In the **scalar concessive conditional strategy (str)**, a range of conditions in the protasis is invoked by expressing the most extreme or “strongest” condition. The scalar concessive conditional, and also the other types of concessive conditionals, presupposes that one can define the range of conditions in a **scalar model (sem)** (Fillmore et al. 1988) such that the possible conditions can be

ranked from “weakest” (least informative) to “strongest” (most informative) for the particular state of affairs described in the apodosis. In (97), the scalar model ranges from drinking just a little – the “strongest” or most informative, as it is the least likely condition to lead to your being fired – to drinking excessively. A scalar model is not the same as a scalar predicate. A scalar predicate describes some property that occurs in different degrees. A scalar model describes a set of propositions or states of affairs that represent different degrees of “strength” in a particular discourse context (see section 17.4.2 on another construction, the ‘let alone’ construction, that invokes a scalar model).

The **alternative concessive conditional strategy (str)** gives a minimal scalar model, of a proposition and its negation. In (98), the alternatives making up the minimal scalar model are ‘he is right’ and ‘he is not right’. Finally, the **universal concessive conditional strategy (str)** quantifies over the entire range of propositions (the ‘parameter’) in the scalar model. In (99), *however much* universally quantifies over the entire range of amounts of advice that you might give him.

Concessive conditional constructions resemble concessive constructions in that there is a presupposition that normally the apodosis event will not hold for at least the “stronger” propositions invoked in the protasis event – that is, if the “strongest” p is true, then normally not q . For example, normally a boss will not fire you if you drink only a little. This is the unexpectedness characteristic of both concessives and concessive conditional constructions. Concessive conditional constructions differ from concessive constructions in that both protasis and apodosis propositions have positive epistemic stance in concessives, whereas the protasis of concessive conditional constructions has non-positive epistemic stance, like conditional constructions.

Concessive conditional constructions also share the same three types of causal relations between protasis and apodosis (Haspelmath and König 1998:569–70; see section 17.2.1). The examples in (97)–(99) above illustrate the content causal relation in concessive conditional constructions for the scalar, alternative, and universal strategies. The examples in (100) illustrate the epistemic relation, and those in (101) the speech act relation, for the three strategies:

- (100) a. Even if this had not been his intention, he certainly managed to alienate most of his colleagues.
 b. Whether he actually was at his office or not, he certainly did not pick up his mail.
 c. Whatever his motive was, it was not entirely altruistic.
- (101) a. Even if you don't want to hear this, your mother is waiting for you.
 b. Whether you like it or not, your paper was not very good.
 c. However you may feel about this, I don't particularly like your friend.

It is sometimes difficult to differentiate semantically between concessive conditionals and ordinary conditionals, and between concessive conditionals and concessives. Conditionals may be interpreted as concessive conditionals when the conditional protasis expresses an extreme condition, when the apodosis is an

interrogative, or in certain cases when the apodosis refers back to the protasis (König 1986:238–39):

- (102) a. If you drink **only a little**, your boss will fire you.
 b. **Will you take the car** if the roads are icy?
 c. If Calvin was still holding her hand, she could not feel **it**. [Madeleine L'Engle, *A Wrinkle in Time*, p. 110]

Concessive conditionals may be interpreted as concessives when the protasis is given in the preceding context, and hence the concessive conditional is factual, not hypothetical (König 1986:240):

- (103) It was the loneliness of the neighborhood, they supposed, **that kept the house next to theirs empty** ... The house stood two hundred yards from the Bartelbys' and A. liked looking out of the window now and then and seeing it, **even if it was empty**. [P. Highsmith, *A Suspension of Mercy*, p. 6]

Haspelmath and König (1998) report on a crosslinguistic survey of concessive conditional constructions in European languages, broadly construed to include many languages in western Russia as well as Maltese (as mentioned in section 17.2.4). They found that there is a wide variety of specific strategies for the three ‘cognitive’ strategies used in concessive conditional constructions (scalar, alternative, universal).

Scalar concessive conditionals fall into two broadly attested strategies in European languages. The first is a conditional construction combined with a focus particle, illustrated in (104) from Albanian (Haspelmath and König 1998:586):

- (104) edhe po/sikur të bjere shi do të dalim jashtë
 also if SBJV falls rain FUT SBJV go_out:1PL outside
 ‘Even if it rains we will go outside.’

The second is a construction with a subordinator used in concessive clauses, illustrated in (105a–b) for Finnish (Haspelmath and König 1998:590; the (a) construction is a concessive conditional, which is in a hypothetical verb form, while the (b) construction is the concessive, using a factual verb form):

- (105) a. vaikka sata-isi(-kin), lähde-mme ulos
 though rain-COND(-even) go-1PL outside
 ‘Even if it rains, we will go outside.’
 b. vaikka sat-oi(-kin), lähd-i-mme ulos
 though rain-PST(-even) go-PST-1PL outside
 ‘Although it rained, we went outside.’

Haspelmath and König also note that, outside the European area, one finds a simple unanalyzable concessive conditional subordinating conjunction, as in Mandarin Chinese (Haspelmath and König 1998:584):

- (106) jíshǐ nǐ jiěshì, tā yě bu huì tóngyi de
 even_if you explain he also NEG can agree NML
 ‘Even if you explain it, he will not be able to agree.’

Alternative concessive conditionals have a wide variety of subtypes (Haspelmath and König 1998:594–604). Haspelmath and König identify five main types of alternative concessive conditionals in European languages. The first type is recruited from conditional constructions, as in (107) from Lezgian (Haspelmath and König 1998:595):

- (107) am šeherdi-z fe-ji-t'a-ni fi-n t-awu-r-t'a-ni
she:ABS town-DAT go-PTCP-COND-also go-PER NEG-do-PTCP-COND-also
ada qe k'walax kütäh-un lazim ja
she(ERG) today job finish-NR necessary is
‘Whether she goes to town or not, she has to finish the job today.’

The second type is recruited from embedded interrogatives ('whether ... or ...'), as in (108) from German (Haspelmath and König 1998:596):

- (108) Ob ich gewinne oder verliere, Badminton macht mir Spass.
whether I win or lose, badminton makes me fun
‘Whether I win or lose, badminton is fun.’

The third type uses only a deranked form expressing a non-positive epistemic stance distinct from the conditional form, such as an imperative, optative, or a so-called ‘subjunctive’ (see section 18.3.1). Irish uses an Imperative form (Haspelmath and König 1998:598):

- (109) Cuireadh sé nō bíodh sé ina ghrian, rachaimid amach.
rain:IMP it or be:IMP it in:its sun go:FUT:1PL out
‘Whether it rains or the sun shines, we’ll go out.’

The fourth type uses an expression of volition, as in (110) from Georgian (Haspelmath and König 1998:600):

- (110) g-inda cecxl-ši čavarde, g-inda zyva-ši...
you-want fire-into fall **you-want** sea-into
‘Whether you fall into the fire or into the sea...’

The fifth, weakly grammaticalized, type uses an expression of irrelevance in the apodoses, as in (111) from Polish (Haspelmath and König 1998:601):

- (111) Wszystko jedno czy pójdziemy do teatru czy zostaniemy w
all one whether go:1PL to theater whether stay:1PL at
domu, chciał-by-m spędzić ten wieczór z tobą
home want-SBJV-1SG spend this evening with you
‘Whether we go to the theater or stay at home, I would like to spend the
evening with you.’

Universal concessive conditionals have some sort of interrogative pronoun such as *however* in (99). In many languages, the interrogative pronoun is identical to the form found in a free relative clause (see section 19.4); but in some languages the interrogative pronoun and the free relative are distinct, as in Modern Greek (Haspelmath and König 1998:606):

(112)

- a. Ti yráfi?
what writes
 ‘What is she writing?’
- b. Ó-ti yráfi jínete kaló.
REL-what writes get good
 ‘What she writes turns out good.’

For all the (European) languages surveyed, the universal conditional concessive construction recruits the free relative when it is distinct from the interrogative, which suggests that the recruited construction is the free relative pronoun, not the interrogative pronoun (Haspelmath and König 1998:606–7).

The subtypes of universal concessive conditionals differ as to what additional type of element is found with the pronoun, including a focus particle on the verb; an element associated with the pronoun meaning ‘ever,’ ‘want,’ ‘also,’ ‘that,’ ‘if,’ ‘only,’ ‘yet,’ or ‘then’; reduplication of the pronoun; negation on the verb; optative verb forms; a ‘no matter’ expression; and, lastly, a type without a universal pronoun but an intensified adjective (Haspelmath and König 1998:604–19). Here, we only illustrate the use of a focus particle on the verb, illustrated in (113) for Godoberi (Haspelmath and König 1998:607):

- (113) inL'as̥u hawa bu-k'-ałara-la iLe išqa-ru
which weather N-be-COND-also we:ABS home-EL
 ma-n-iLibu-da
 PL.H-go-FUT.PTCP-be

‘Whatever the weather will be, we will go outside.’

Haspelmath and König identify broad patterns among the concessive conditionals found in European languages, at least. The concessive conditional constructions are frequently recruited from four other types of constructions: interrogative constructions (see section 12.3) – more specifically, interrogative complements (section 18.2); conditional constructions (section 17.3); exclamative constructions (section 12.5); and relative clauses, specifically free relatives (section 19.4). The relationships between these four construction types and the three subtypes of concessive conditionals is given in Table 17.3 (Haspelmath and König 1998:621, table 4; they use the term ‘parametric’ to cover the variety of constructions that use this strategy):

Haspelmath and König consider the diachronic pathways that link the different types of constructions in Table 17.3 and also the concessive construction. As noted above, the concessive construction sometimes arises from a factual interpretation of a conditional concessive in the discourse context, and so historically appears to be a successor to, rather than a predecessor of, the concessive conditional construction. Haspelmath and König tentatively propose the diachronic pathways in Figure 17.1 (Haspelmath and König 1998:625, example 112):

Table 17.3 *Source constructions for polar, alternative, and universal (more broadly, parametric) concessive conditionals*

	Polar	Alternative	Parametric
CONCESSIVE CONDITIONAL	scalar concessive conditional <i>even if she comes...</i>	alternative concessive conditional <i>whether she comes or goes...</i>	universal concessive conditional <i>wherever she goes...</i>
INTERROGATIVE COMPLEMENT	polar interrogative <i>whether/if she will come</i>	alternative interrogative <i>...whether she will come or go</i>	constituent interrogative <i>...where she will go</i>
CONDITIONAL	"polar conditional" • ? <i>if she comes...</i>		"parametric conditional" <i>whoever comes, then...</i>
EXCLAMATIVE	polar exclamative <i>is she rich!</i>	—	parametric exclamative <i>how rich she is!</i>
FREE RELATIVE	—	—	free relative <i>whoever comes, (s/he)...</i>

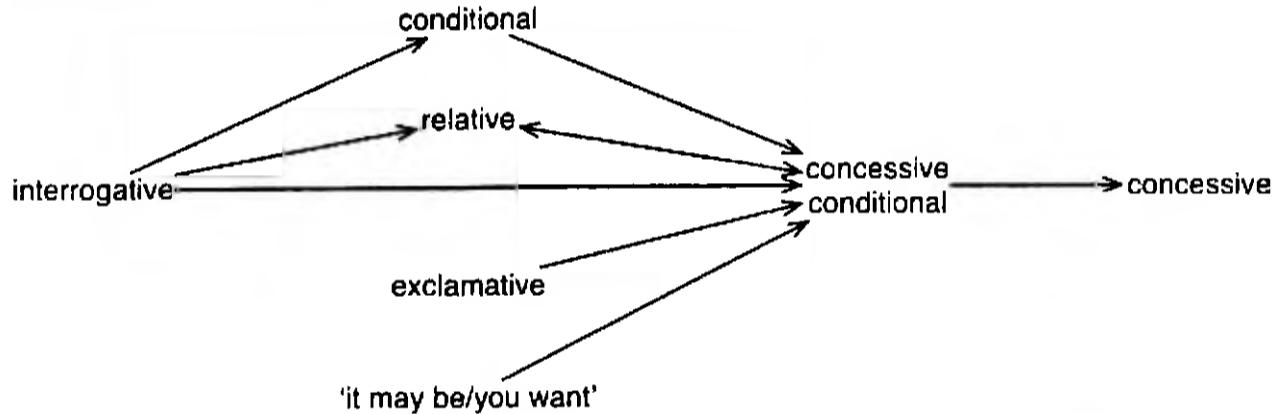


Figure 17.1 *Diachronic pathways leading to concessive constructions*

It remains to be seen whether the universals discovered by Haspelmath and König based on the broad European language sample also extend across the world.

17.4 More Complex Constructions

In this section, we describe two more complex constructions that share some semantic properties with comparative, conditional, and concessive constructions, but represent more complex combinations of these semantic relations between the two events. Unfortunately, little or no typological research has been done on these constructions, so we simply describe them in functional terms, in the hope that constructions performing these functions will come to be described in other languages.

17.4.1 Comparative Conditionals

Example (114) is an instance of a **comparative conditional relation (sem) / construction (cxn)** (McCawley 1998:731; see also Fillmore 1987):

- (114) The longer Bill had to wait, the angrier he got.

The English Comparative Conditional Construction has a symmetrical form between the protasis and apodosis clauses: initial particle *the* (etymologically different from the definite article) and comparative predicate before the subject. McCawley observes that there is an alternative construction that expresses the same meaning (McCawley 1998:732):

- (115) Bill got angrier the longer he had to wait.

The comparative conditional bears a conditional relationship between protasis and apodosis not unlike the concessive conditional. It represents a set of conditional relationships between degrees on the scale of the protasis predicate – in (114)–(115), the scale of Bill waiting a certain length of time – and corresponding degrees on the scale of the apodosis predicate – here, the scale of Bill's anger. Unlike the concessive conditional, but like the conditional, the causal relation between the two sets of events is expected.

There is no typological survey of the form of comparative conditionals, to my knowledge. McCawley provides evidence that the English construction in (114) is asymmetric, such that the initial clause is an adverbial subordinate clause, as with many conditional, concessive, and concessive conditional constructions.

17.4.2 The Let Alone Construction

The ***let alone* construction (cxn)** is illustrated in (116) (Fillmore et al. 1988:512); small caps indicate a prosodic accent):

- (116) A: Did the kids get their breakfast on time this morning?
 B: I barely got up in time to EAT LUNCH, let alone COOK BREAKFAST.

The *let alone* construction was first described in detail in Fillmore et al. (1988) in the first major paper to present a modern constructional approach to grammatical analysis in English. Hence, the analysis represents an intellectual forebear to the constructional approach to grammar used in this textbook. It is described here for two reasons: first, to illustrate how it is related to the other constructions described in this chapter; and second, to remind the reader of the richness of conventionalized grammatical constructions in the world's languages that goes beyond the constructions described in this textbook.

Semantically and pragmatically, the *let alone* construction expresses a negative response that goes beyond what is asked for in the context. In (116), the relevant negative response to A's question would be simply *No*, or, more informatively, *I didn't get up in time to cook breakfast*. This assertion is presented as part of the sentence fragment, while the main clause asserts another negative proposition.

There is a relationship between the two negative assertions in the two parts of the *let alone* construction. The two negative assertions are part of the same scalar model (see section 17.3.2) – that is, the propositions can be thought of as belonging to the same scale of “strength” or informativeness relative to the context. The main clause assertion is the more informative one (in its negative form, of course). Thus the *let alone* construction is related to the concessive conditional in that a range of (negative) propositions is asserted to be true by asserting the most informative one in the matrix clause, while providing the more direct response to the discourse context – e.g., A’s question in (116) – in the fragmentary *let alone* part of the construction.

In addition, there is an implicit comparison between the more informative main clause assertion and the less informative assertion in the sentence fragment that directly responds to the discourse context. This leads to a contrastive focus function, leading to expression with a prosodic accent and a fragmentary expression of the contrastive element, as with the standard of comparison in the comparative construction (see section 17.2.1); both of these constructions are examples of ellipsis in an identificational context (see section 11.4.2).

The *let alone* construction has a quite specialized semantic and pragmatic function. It is not surprising that there has not been a systematic crosslinguistic study of the *let alone* construction, based on the functional definition of the English construction (for further details, see Fillmore et al. 1988). But the English *let alone* construction belongs to the same family of conventionalized construction types described in this chapter, several of which have been analyzed crosslinguistically. Its existence serves as a reminder that sometimes specialized constructions with particular semantic and pragmatic/rhetorical functions may become grammaticalized, and there is still much to learn about the form of such constructions across languages.

17.5 The Formal Expression of Semantic and Pragmatic Relationships between Events Expressed in Complex Sentences

This chapter and Chapter 15 examine the typology of a variety of semantic relations between events. All of these constructions are relatively strongly grammaticalized, typically as adverbial clause constructions. However, virtually all of the semantic relations described in this chapter, as well as the semantic relations described in Chapter 15, may be expressed by coordinate constructions, which are generally considered to be less grammaticalized than adverbial dependent clauses.

Moreover, all of these semantic relations may be expressed by independent clauses not linked by a coordinating conjunction (compare the remarks on the origin of conjunctions in section 15.4). A sequence of sentences in a typical

narrative discourse will imply temporal and causal relations between the events denoted by the sentences – the most common and “basic” semantic relations between events. As we noted in section 15.4, and will note again for complement clause constructions in section 18.3.2, semantic relations between events such as those described in this chapter may be expressed by independent sentences, provided they are accompanied by discourse markers (“adverbs”) that signal the relation. The (a) examples in (117)–(118) convey the same semantic relation between the two events as the more grammaticalized (b) examples (König 1986:241; Haspelmath and König 1998:574):

- (117)
 - a. He may not like my visit. I will go and see him **anyway./Even so**, I will go and see him.
 - b. Although he may not like my visit, I will go and see him.
- (118)
 - a. You can give me your letter. I have to go to the post office **anyway**.
 - b. Whether or not you give me your letter, I have to go to the post office.

Expressions such as *anyway* or *even so* refer to the event in the other sentence and can express relations such as the concessive relation in (117) and the concessive conditional relation in (118).

Some languages may not have more specialized grammaticalized expressions for certain semantic relations between events, particularly those described in this chapter. For example, König notes the etymologically transparent, and thus recent, origin of concessive markers in many languages (see section 17.3.2). Haspelmath and König observe that some languages have only weakly grammaticalized concessive conditional constructions (Haspelmath and König 1998:592–93, 601–2). Other languages do not have grammaticalized constructions for any of scalar, alternative, or universal concessive conditionals. Haspelmath and König give the example of Samoan, which uses a construction with the predicate ‘be the same’ followed by an embedded interrogative clause (Mosel and Hovdhaugen 1992:664; cf. Haspelmath and König 1998:583; GENR = general tense–aspect–modality marker):

- (119) 'Ole'a fai-a e tusa lava pe timu pe leai
 FUT do-ERG GENR **be_the_same** PTCL INTERR rain Q not
 'It will be done whether it rains or not.'

These observations demonstrate that the relationship between clauses in human languages tends to hover on the boundary between discourse – defined as the relatively free and creative production of a sequence of clauses – and grammar – defined as a particular, conventionalized way of expressing situation types in language. For situations that are not conceptualized as a single event predicated in a single clause, but rather as multiple events predicated in multiple clauses, the degree of conceptual and grammatical integration of the events can vary, both within and across languages. The loosest linkage between clauses is found when there are two clauses expressing independent events with, at most, some marker that cross-references the other clause (such as *even so*). A stronger

linkage occurs when the two events are conceptualized as a single complex figure, expressed grammatically as coordination. A still stronger linkage occurs when the two events are conceptualized as occurring in a figure-ground configuration, so that one event (expressed in the subordinate clause) functions as the reference point for the assertion of the other event (expressed in the main clause). The next two chapters will describe other strong linkages between events: when one event functions as an argument of the predicate expressing another event, and when one event functions to modify the argument of a predicate expressing another event.

Terms Defined in this Chapter

17.1 Introduction

17.2 Comparatives and Equatives

17.2.1 Semantics and Information Packaging of the Comparative Construction
comparative relation (*sem*) / construction (*cxn*), comparee (*sem*), standard (*sem*), gradable predicative scale (*sem*)

17.2.2 Strategies for Comparative Constructions

derived-case (*str*), conjoined comparative (*str*), particle comparative (*str*), degree marker (*str*), fixed-case (*str*), exceed comparative (*str*), separative comparative (*str*), allative comparative (*str*), locative comparative (*str*)

17.2.3 Universals and Explanations for Comparative Strategies

independent cognitive strategy (*str*), relative cognitive strategy (*str*), ordered cognitive strategy (*str*), conjoined exceed comparative (*str*)

17.2.4 Equative Constructions

equative construction (*cxn*), relative-based equative (*str*), particle equative (*str*), fixed case equative (*str*), equal equative (*str*), relative equal equative (*str*), associative equative (*str*), degree equative (*str*)

17.3 Conditionals, Concessives, and Concessive Conditionals

17.3.1 Conditional Constructions

conditional relation (*sem*) / construction (*cxn*), protasis (*a.k.a. antecedent*) (*cxn*), apodosis (*a.k.a. consequent*) (*cxn*), content causal relation (*sem*) / construction (*cxn*), epistemic causal relation (*sem*) / construction (*cxn*), speech act causal relation (*sem*) / construction (*cxn*), mental space (*sem*), epistemic stance (*sem*), neutral epistemic stance (*sem*), negative epistemic stance (*sem*), positive epistemic stance (*sem*), hypothetical (*sem*), non-factive (*sem*), generic conditional relation (*sem*) / construction (*cxn*)

17.3.2 Concessive Constructions

concessive relation (*sem*) / construction (*cxn*)

17.3.3 Concessive Conditional Constructions

concessive conditional relation (*sem*) / construction (*cxn*), scalar concessive conditional strategy (*str*), scalar model (*sem*), alternative concessive conditional strategy (*str*), universal concessive conditional strategy (*str*)

*17.4 More Complex Constructions**17.4.1 Comparative Conditionals*

comparative conditional relation (*sem*) / construction (*cxn*)

17.4.2 The Let Alone Construction

let alone construction (*cxn*)

17.5 The Formal Expression of Semantic and Pragmatic Relationships between Events Expressed in Complex Sentences

18 Events as Arguments

Complement Clause Constructions

18.1 Introduction: Events as Arguments (Complement Clauses) and Events as Modifiers (Relative Clauses)

Chapters 15–17 describe the crosslinguistic expression of relations between more or less separate events. A wide range of semantic relations between separate events were surveyed in those chapters. It was argued that there are two different ways in which two events and the semantic relation between them are packaged: complex figure (coordinate clause constructions) and figure–ground (adverbial clause constructions). Nevertheless, constructions for both types of information packaging largely use the same range of strategies – specifically, both balancing and deranking strategies.

In this and the following chapter, we will describe two other kinds of complex sentence constructions that express two events that are semantically more integrated: complement clauses (in this chapter) and relative clauses (in Chapter 19). Complement clauses and relative clauses, unlike the types of complex sentences described in Chapters 15–17, are defined in terms of the propositional act functions introduced in Chapters 1–2. Events prototypically function as predication. When an event is referred to, then the event is functioning as a complement. When an event functions as a modifier, then it is a relative clause. In terms of strategies, complement clause constructions and relative clause constructions may be balanced or deranked, similar to coordinate clause and adverbial clause constructions. In traditional grammar, certain deranked complement clause and relative clause constructions are not called ‘clauses.’ Instead, they are called ‘nominalizations,’ ‘infinitives,’ or ‘participles.’ Since our definition is based on information packaging function, not a particular strategy, our definitions of ‘complement’ and ‘relative clause’ include these deranked constructions. Hence, our definitions of ‘complement clause’ and ‘relative clause’ are broader than the traditional definitions.

A complement clause functions as an argument of the matrix clause predicate: in *I thought that she left already, she left already* is functioning as an argument of *thought* (along with *I*). Relative clauses function as modifiers of a referent (argument) in the matrix clause. Relative clauses are modifiers by virtue of the fact that the referent in the main clause that they modify also is a participant in the event denoted in the relative clause: in *She bought the book that I wrote*, the

Table 18.1 *Types of complex sentence constructions*

	Complex figure	Figure-ground
Separate events	coordination construction	adverbial subordination construction
Component of dependent clause is argument of matrix clause	complement construction	relative (clause) construction

book is both a participant in the buying event expressed in the main clause and in the writing event expressed in the relative clause.

Despite these differences in the semantics and information packaging of complement clause and relative clause constructions, the two constructions have some similarities in grammatical structure, as will be seen in Chapter 19. The similarities are likely due to the fact that something in the complement clause or relative clause functions as an argument of the matrix clause predicate. In the case of the relative clause, it is an argument of the relative clause predicate (the book in the example above) that is an argument of the matrix clause. In the case of the complement clause, the clause as a whole – or, more precisely, the predicate that functions as the head of the complement clause – is an argument of the matrix clause.

Another difference between complement clauses and relative clauses is that relative clause constructions are clearly figure–ground constructions (see section 19.1), while complement constructions, at least some of them, more closely resemble complex figure constructions, to the point that the predicates of the two clauses often become grammaticalized as a complex predicate or even a single predicate form (see section 18.3).

The relationship between the types of complex sentence constructions are laid out in Table 18.1.

18.2 The Semantics of Complement Clauses

18.2.1 Introduction

A **complement clause construction** (*cxn*) consists of a matrix clause and a **complement dependent clause**, or **complement** (*cxn*) for short. Only certain predicates allow events as arguments; these predicates are called **complement-taking predicates** or **CTPs** (*cxn*) (Noonan 2007:53).¹ Example (1) is an instance of a complement clause construction: *believe* is a complement-taking predicate / CTP, and *that pets are allowed in the apartment* is the complement:

¹ Noonan (2007) is a slightly revised version of his chapter in the 1985 edition of the same work. I use Noonan's semantic analysis of CTPs and much of the data in the chapter, but take responsibility for the analyses that I present in this chapter.

- (1) She believes that pets are allowed in the apartment.

Complements are subordinate clauses – that is, they are non-asserted, using Cristofaro's semantic tests (see section 15.1.2):

- (2) He said it's raining.
- (3)
 - a. It is not the case that he said it's raining. (\neq It's not raining)
 - b. He didn't say it's raining. (\neq It's not raining)
 - c. He said it's raining, didn't he?
 - d. *He said it's raining, isn't it?
- (4) She wants him to go to Las Vegas.
- (5)
 - a. It is not the case that she wants him to go to Las Vegas.
(He isn't going to Las Vegas)
 - b. She doesn't want him to go to Las Vegas.
 - c. She wants him to go to Las Vegas, doesn't she?
 - d. *She wants him to go to Las Vegas, doesn't he?

These tests do not apply to some complement clause constructions, in particular those where the CTP itself expresses modality or negation (see section 18.2.2).

18.2.2 Semantic Types of Complement-Taking Predicates

The strategies found in complement clause constructions are largely governed by the semantics of complement-taking predicates and the constraints they impose on the interpretation of complements. This section surveys the different semantic types of complement-taking predicates and the relevant semantic constraints. The survey is based largely on Noonan (2007) and Cristofaro (2003). The order of presentation anticipates a hierarchy of the encoding of complements that will be described in section 18.3.1.

Most complement-taking predicates denote an event that has another event as one of its participants. Hence, in describing the semantic classes of events denoted by complement-taking predicates, we will refer to the 'event,' a semantic category, and not the more commonly used term 'predicate,' which we have distinguished as a construction that expresses that semantic category as a predication. In general, of course, we distinguish different types of comparative concepts, such as semantic categories vs. constructions. In the case of complement clause constructions, the distinction is particularly important. We will see in this section that not all complement-taking predicates denote events. And we will see here and in section 18.3.2 that not all events that have another event as a participant are expressed as predicates. However, when an event, such as an utterance event, is expressed by a complement-taking predicate, we will refer to the predicate as, for example, an 'utterance CTP.'

The first category of CTPs consists of **utterance events (sem)**. These are events of saying; one participant is the speaker of the utterance, and the other

participant – the complement – is the utterance. Example (6) illustrates utterance predicates in English:

- (6)
- a. She **said**, ‘I’m buying the house.’
 - b. She **said** that she was buying the house.
 - c. She **screamed**, ‘Aieeee!!’

Examples (6a–b) illustrate two ways of expressing utterance predicate complements in English. Although these are technically two strategies, which will be discussed in section 18.3, there is a putative difference in semantics. Example (6a) is an instance of **direct report (str)** (e.g., Cristofaro 2003:108). It simply reproduces the utterance as it is reported to have been uttered. Example (6b) is an example of **indirect report (str)** (Cristofaro 2003:108). It communicates the content of the utterance but not the exact words: for example, the speaker reports the producer of the utterance as *she*, and uses the Past Tense. All languages use the direct report strategy for utterance complements, but not all languages use the indirect report strategy (Noonan 2007:122).

Direct report appears to simply report the signal produced in the utterance, and not its content. But Cristofaro notes that ‘when mentioning somebody’s utterance, one usually assumes that the original function of this utterance was to describe some SoA [state of affairs]’ (Cristofaro 2003:108–9), and hence the direct report conveys the content as well as the form of the utterance. This applies also to (6c), in which the content of the direct report is an expressive, rather than having propositional content. An indirect report conveys only the content of the utterance.

The event or other semantic content of an utterance predicate’s complement is independent of the utterance predicate event in two important respects that are relevant to the encoding of complements. The complement event has **independent time reference (sem)** (Noonan 2007:103) with respect to the utterance event itself: the complement event’s time reference may precede, follow, or overlap with the time of the utterance event. The participants of the complement event are also independent of the participants of the utterance event – that is, there is no **necessary participant sharing (sem)** between the complement event and the matrix clause event.

The next category of CTPs consists of **propositional attitude events (sem)**. These are events that express the attitude of a person toward the truth of a proposition. The most common propositional attitude events describe belief or knowledge of a person, as in examples (7a–d):

- (7)
- a. Harry **thinks** that Janet ate the last doughnut.
 - b. I **suspect** that he will finish his dissertation by the end of the year.
 - c. Sam **knows** that Fred ate the last doughnut.
 - d. She **doubts** that Janet ate the last doughnut.

Propositional attitude events ascribe the attitude toward the truth of the proposition expressed in the complement to the holder of the belief or other attitude.

In (7a), the positive attitude to the proposition that Janet ate the last doughnut is ascribed to Harry. In cognitive approaches to semantics, this is represented as a proposition in the believer's mental space (section 17.3.1). The believer's mental space is different from the speaker's mental space, or what Fauconnier calls 'reality space' – the "belief world" assumed by the speaker.

The speaker takes no stance toward the truth of the proposition expressed by the complement in (7a). Of course, if the holder of the belief is the speaker, as in (7b), then the hearer can infer that the speaker has the relevant attitude toward the truth of the proposition. However, this is a coincidence, so to speak – but a coincidence with potential grammatical consequences, as will be seen in sections 18.2.2 and 18.4.

On the other hand, **knowledge events (sem)**, illustrated in (7c), do indicate the propositional attitude, or epistemic stance (see section 17.2.3), of the speaker toward the proposition expressed by the complement. Example (7c) both ascribes a propositional attitude to the matrix event participant (the Subject of *know*), and presupposes that the speaker takes the proposition to be true (Fred actually did eat the last doughnut, in the speaker's knowledge). In cognitive semantic terms, the complement proposition in (7c) is asserted to belong in Sam's mental space and also presupposed to belong to the speaker's mental space. As will be seen below, a number of CTPs presuppose the speaker's epistemic stance toward the proposition expressed by the complement. This is also pertinent to the strategies employed in the complement clause construction with the relevant CTP (section 18.3.1). However, the epistemic stance is backgrounded (presupposed) information. In contrast, (7a) does not have any epistemic stance: the sentence conveys nothing about the speaker's attitude toward the truth of the complement proposition.

Example (7d) is more complicated: doubting conveys a negative propositional attitude (more precisely, the attitude that the event is likely not to be true), but it is the attitude of the matrix event participant, not the speaker. So example (7d) does not have any epistemic stance with respect to the speaker either.

A special subtype of propositional attitude events are **pretense events (sem)**, as in (8) (Noonan 2007:127):

- (8) They pretended that he came.

Noonan observes that pretense predicates communicate that 'the world described by the proposition embodied in the complement is not the real world ... the pretense predicate establishes an alternative reality and the complement constitutes an assertion within that alternative reality' (Noonan 2007:127–28). That is, a pretense predicate establishes an alternative reality or mental space, just as a belief predicate establishes an alternative reality to the speaker's reality. However, a belief predicate's alternative reality is ascribed to the believer, whereas the pretense predicate's alternative reality is not committed to by anyone, except perhaps a gullible addressee who is tricked or duped into believing the pretended proposition. The differences between belief, knowledge, doubt, and pretense

CTPs are subtle and complex, and their consequences for crosslinguistic expression have hardly been explored, though some observations will be made in section 18.3.1.

Propositional attitude predicates, including knowledge and pretense predicates, also have independent time reference and no necessary sharing of participants.

A third category of CTP event consists of **commentative events (str)** (Noonan 2007:127, and references cited therein). Commentative predicates express an evaluation (positive or negative) or a judgment toward a proposition, as in (9a–b):

- (9) a. She **regrets** that she didn't vote early.
 b. It's **odd** that the cat wants to stay out.

Commentative events take a positive epistemic stance (section 17.2.3) toward the proposition expressed in the complement. That is, it is presupposed that the event expressed in the complement is true. For this reason, commentative complement clause constructions have been described as **factive (sem)**.

However, other types of predicates also express an evaluation but do not have a positive epistemic stance (Fillmore 1990a:153–54; Palmer 2001:13; Noonan 2007:133):

- (10) a. Pat **fears** that she won't pass the exam.
 b. Mike **hopes** that it won't rain.
 c. Sally **wished** that she had filled the gas tank before she left on the trip.

Fearing events (sem), as in (10a), express a negative evaluation but of an event towards which the speaker has a neutral epistemic stance (that is, the speaker is uncertain whether the event has taken or will take place). **Hoping events (sem)**, as in (10b), express a positive evaluation, also with a neutral epistemic stance. **Wishing events (sem)**, as in (10c), express a positive evaluation, but, unlike hoping events, with a negative epistemic stance (the speaker assumes the event didn't take place).

All of these predicates are similar in that they express an evaluation or judgment toward the occurrence of the event embodied in the complement. Fearing, hoping, and wishing predicates have a neutral or negative epistemic stance toward the occurrence of the event, unlike commentative predicates. These predicates are **non-factive (sem)**. We will call the entire class, regardless of epistemic stance – commentative, hoping, wishing, and fearing events – **evaluative events (sem)**.

Evaluative events are also similar in that there is independent time reference of the complement event, and no necessary participant sharing between the complement event and the matrix event. However, when the complement event is a future event, the semantics may shift. One often wants a positively evaluated event to come about, and doesn't want a negatively evaluated event to come about. The agent who hopes for or fears a future event may also intend – or at

least desire – to bring about or prevent the future event, or act to alleviate the consequences of a negatively evaluated event. Thus, for future hoping or fearing, the evaluative event may be more like a desiderative event (positive or negative desire), described below (see Lichtenberk 1995 for detailed discussion). The interplay of evaluation, epistemic stance, and agentivity is relevant to choice of complement strategies (see section 18.3.1).

The next three types of CTP events are analyzed as having an event rather than a proposition or an occurrence/fact as the semantic type of the complement. They also exhibit less independence between the complement event and the CTP event, in terms of time reference, necessary sharing of participants, or both.

Perception events (*sem*) express a perception relation between a perceiver and the complement event, as in (11a–b):

- (11) a. We **watched** the elk graze in the caldera.
 b. I **heard** a bear crashing through the woods behind us.

The complement event of a perception event, unlike the complement events of the CTP events discussed so far, have **dependent time reference (*sem*)**: the time reference of the complement event must be the same as the time reference of the perception event. However, thanks to modern media technology, one can perceive events that have previously occurred via video and audio recording. This suggests that the time dependence of perception events is not as strong as the time dependence of the complement events in the CTP semantic classes described below. The participants in the perception complement event are still independent in that there is no necessary sharing of participants between the matrix clause event and the complement clause event (but see section 18.4.1).

Desiderative events (*sem*) express a desire toward the realization of a future event that is expressed by the complement. The prototypical desiderative predicate is ‘want’:

- (12) a. Meagan **wants** to climb Mt. Baldy on Saturday.
 b. Barry **wants** Bobby to learn how to ride a bicycle.

Desiderative events differ from hoping and wishing events in two ways, although all three present a positive evaluation of their complement events. The complement event of a desiderative event has dependent time reference: its time reference is always in the future relative to the time of the desiderative event. (However, desiderative complement clause constructions do not require shared participants between the complement event and the wanting event; see (12b), and see also section 18.4.1.) Also, there is no epistemic stance toward the complement event – positive, negative, or neutral.

Manipulative events (*sem*) describe an event in which an agent acts to bring about the event expressed by the complement. Manipulative events include causative and permissive events (Noonan 2007:136):

- (13) a. Max **persuaded** Mellie to run for mayor.
b. John let him assemble it.

The complement event of manipulative events has dependent time reference: the complement event must follow the manipulative predicate event. Manipulative events also have one necessary shared participant: the endpoint of the causer participant's manipulation is also the agent, or at least initiator, of the complement event. However, manipulative events vary as to whether the complement event is realized (Noonan 2007:137):

- (14) a. I **forced** Hugh to resign. [implies Hugh resigned]
b. I **persuaded** Hugh to resign. [implies Hugh was convinced to resign, but for some speakers there is no implication about his actual resignation]
c. I **pressed** Hugh to resign. [neutral as to whether or not Hugh resigned]

Thus, we conclude that, for manipulative events in general, there is no necessary entailment that the complement event took place (or will take place).

Desiderative and manipulative events appear to differ in that there is no necessary participant sharing in the former but there is in the latter. Also, a desired event is an unrealized future event, whereas manipulation may result in realization of the event, as in (14a). Yet desiderative and manipulative complement clause constructions are expressed in quite similar ways, as will be seen in sections 18.3.1 and 18.4.1. It is possible that wanting is construed as an initial stage in an agent's volition before the actual causing event. If someone wants to climb Mt. Baldy, then they may actually bring themselves to formulate the intention – another stage in the sequence, which Noonan classifies as a desiderative event (see Noonan 2007:135); the last stage is carrying out that action. Likewise, if someone wants someone else to learn how to ride a bicycle, they might go on to persuade or otherwise make that person learn how. That is, desire may lead to intention, and intention may lead to execution.

Manipulative events have already been encountered in this book, as the causing event in causative constructions (section 9.2). In section 9.2, we focused on the argument structure constructions associated with a causative event sequence; we will return to this topic in section 18.4.1. We also observed that the causing (that is, manipulative) event is often expressed derivationally, or even as undrived predicates. That is, a manipulative event may be morphologically combined with its putative complement predicate in a single clause, instead of being packaged as a separate predicate. In this case, the causing/manipulative event is packaged either as part of a complex predicate (as an eventive complex predicate; see section 13.2), or as a simple predicate, derived or undrived, including the caused event in its meaning (see section 9.2).

The same is also true of desiderative events. Some languages have morphologically derived desideratives that is, the desiderative event is morphologically combined with its putative complement event, as in Arapaho (Cowell with Moss 2008:392):

- (15) niibéétohwoteekóóhunoo.
 nii-beetoh-wotée-koohu-noo
 IMPF-want-town-go_by_car-1SG
 'I want to go to town.'

This monoclausal packaging is also true of the three categories that make up the last group in this section: modal, aspectual, and negative polarity "complement-taking predicates." These are all often expressed by inflectional affixes or free morphemes that do not resemble predicates morphosyntactically (see section 12.2 and section 12.4.2), or complex predicates – specifically, auxiliary constructions (see section 13.4). All of these possibilities – complement clause construction, complex predicate, free morpheme, and inflectional affix – express the same construction, namely the tense–aspect–modality–polarity (TAMP) construction (section 13.4 – tense, however, is not expressed with a complement clause construction, to my knowledge). Modality and polarity functions were described in sections 12.2 and 12.4.2. The full range of aspectual categories has not been discussed in this textbook, but some aspectual categories are described in section 6.2.1. The inflectional, free morpheme, and complex predicate strategies for TAMP constructions are described in sections 12.2, 12.4.2, and 13.4. What is the relationship between the TAMP construction and its various strategies, and the complement clause construction used to express TAMP?

A complement clause construction is defined in terms of encoding one event as the argument of a second event. The recruitment of a complement clause construction to express the aspect, modality, and/or polarity (AMP) of an event effectively construes the aspect, modality, or polarity as if it is a predicate denoting a separate "event." Yet the AMP properties of an event and the event itself are highly intertwined. The lack of independent event status of AMP is revealed by the criteria of time dependence and necessary participant sharing: an event and its AMP *qua* "event" are temporally dependent and necessarily share all participants. Why, then, is a complement clause construction sometimes recruited for an AMP construction? In part, it is because AMP meanings have as historical sources predicates that originally denoted events. In fact, the aspectual meanings found in complement clause constructions are not very grammaticalized, as will be seen below. And in part it is because AMP meanings can be construed as "properties" predicated of an event, as in (16):

- (16) a. It is not the case that he arrived yesterday.
 b. She has the ability / is able to pardon him. [cf. *She can pardon him*]

For these reasons, we will treat the expression of AMP in a complement clause construction as the recruitment of the complement clause construction for the AMP construction, by construing the AMP meaning as an event – or, more precisely, a stative property of the contentful event. This will allow us to discuss the packaging of AMP into a biclausal construction as one AMP construction strategy, and compare it to the packaging of AMP in a monoclausal construction inflection, a free morpheme, or part of a complex predicate.

Both Noonan and Cristofaro restrict modality in complement clause constructions to the modalities of obligation, permission, and ability (Cristofaro 2003:100–1; Noonan 2007:137–38). Examples (17a–b) are given by Noonan (2007:138):

- (17) a. Leon **has** to be in Fresno by three.
 b. It's **necessary** for Leon to be in Fresno by three.

Noonan also gives an example from Albanian of ability expressed by a complement clause construction using a Subjunctive verb form for the complement (Noonan 2007:138):

- (18) Njeriu mundeshte te vjedhë pulën
 man was_able.3SG COMP steal.3SG.SBJV chicken
 ‘The man was able to steal a chicken.’

One can argue that *have* and *be necessary* are predicates with complements rather than auxiliary complex predicate constructions because they require the complementizer *to*, and *have* and *be necessary* may also be inflected for tense. Still, it must be recognized that a complement clause construction recruited for AMP almost inevitably evolves into a complex predicate, and from there to an inflectional morpheme (perhaps via an uninflected free morpheme). Hence, drawing a sharp line between the complement clause construction strategy and the complex predicate strategy is unrealistic in many cases.

Noonan identifies two categories of aspect that may be expressed in complement clause constructions. **Achievement (sem)** expresses the success or failure in carrying out the complement event. Hence, positive achievement, illustrated in (19), entails that the complement event occurred, while negative achievement, illustrated in (20), entails or at least strongly implicates that the complement event didn't occur:

- (19) a. She **managed** to solve the riddle.
 b. I **got** to try eel in Japan.
- (20) a. She **neglected** to pick up the groceries.
 b. Zeke **tried** eating spinach.

Phasal aspect (sem) expresses the temporal/aspectual phase of an event: beginning, continuation, completion, or termination. Noonan also includes iterative predicates such as ‘repeat’ and ‘resume’ as phasal predicates. In English, most phasals are expressed as complement clause constructions:

- (21) a. Bill **began** to drink the juice.
 b. Frieda **kept** on swimming.
 c. Sally **stopped** playing the cello.

Finally, negative polarity can be expressed using a complement clause construction. Evenki uses an inflected Verb to express negation; the Lexical Verb

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 nii-beetoh-wotee-koohu-noo
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A complement clause construction is defined in terms of encoding one event as the argument of a second event. The recruitment of a complement clause construction to express the aspect, modality, and/or polarity (AMP) of an event effectively construes the aspect, modality, or polarity as if it is a predicate denoting a separate "event." Yet the AMP properties of an event and the event itself are highly intertwined. The lack of independent event status of AMP is revealed by the criteria of time dependence and necessary participant sharing: an event and its AMP *qua* "event" are temporally dependent and necessarily share all participants. Why, then, is a complement clause construction sometimes recruited for an AMP construction? In part, it is because AMP meanings have as historical sources predicates that originally denoted events. In fact, the aspectual meanings found in complement clause constructions are not very grammaticalized, as will be seen below. And in part it is because AMP meanings can be construed as "properties" predicated of an event, as in (16):

- (16) a. It is not the case that he arrived yesterday.
 b. She has the ability / is able to pardon him. [cf. *She can pardon him*]

For these reasons, we will treat the expression of AMP in a complement clause construction as the recruitment of the complement clause construction for the AMP construction, by construing the AMP meaning as an event – or, more precisely, a stative property of the contentful event. This will allow us to discuss the packaging of AMP into a biclausal construction as one AMP construction strategy, and compare it to the packaging of AMP in a monoclausal construction via inflection, a free morpheme, or part of a complex predicate.

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 c. Sally **stopped** playing the cello.

Finally, negative polarity can be expressed using a complement clause construction. Evenki uses an inflected Verb to express negation; the Lexical Verb

Table 18.2 *Semantic types of matrix predicates, and semantic properties of complements of those predicates*

Predicate semantic class	Complement semantic type	Temporal dependence	Epistemic stance	Necessary participant sharing
Utterance*	speech event	independent	N/A	no
Propositional attitude*	proposition	independent	N/A	
Knowledge*	backgrounded proposition		positive	
Pretense	alternative reality proposition		negative	
Commentative	backgrounded proposition	independent	positive	no
Fearing, hoping, wishing			neutral, negative	
Perception*	event	dependent	positive (?)	no
Desiderative (Wanting)*	event	dependent	N/A	no
Manipulative (Causative)*				
Modal	event	dependent	(expressed directly by the CTP)	yes, fully
Aspect (Achievement, Phasal*)				
Negation				

* surveyed in Cristofaro (2003); see section 18.3.1

suffix *-re* is invariant in negation but identical to the 3rd Person Plural Nonfuture Positive Verb form (Nedyalkov 1994:11; LV = Lexical Verb suffix):

- (22) *nunjan nekun-mi e-che-n suru-v-re*
 he younger_brother-REL.POSS NEG-PST-3SG go_away-CAU-LV
 'He did not lead away his younger brother.'

The semantic properties of complement clauses associated with different semantic classes of events, and other concepts expressed by complement-taking predicates that are described in this section, are summarized in Table 18.2.

18.3 Strategies for Complement Clause Constructions

18.3.1 Balancing and Deranking Strategies, and the Binding Hierarchy

Like the coordinate clause and adverbial clause constructions described in Chapters 15–17, complement clause constructions use both balanced and deranked strategies. The direct report strategy for utterance predicates (see example [6a] in section 18.2.2) is probably used in all languages, and

represents the most fully balanced clause strategy, as it is intended to faithfully replicate what the utterer said.

Balanced complements, like balanced adverbial dependent clauses, frequently are syndetic, using a **complementizer (str)** such as English *that*. English allows for either syndetic or asyndetic complements:

- (23) She told me (**that**) he was sleeping.

Deranked complements use the full range of deranked strategies described in sections 15.2.3 and 15.3.2: special inflections distinct from those on simple declarative clause predicates, often called ‘subjunctive’ or ‘irrealis’; deranked predicate forms, often called ‘infinitives’; and action nominals (also called ‘nominalizations’).

A typical example of a deranked complement using special predicate inflections is the Lori Subjunctive (Noonan 2007:103–4). Example (24) illustrates a balanced propositional attitude complement using the Indicative predicate form; in contrast, example (25) is a deranked negative achievement predicate using the Subjunctive form (Noonan 2007:103–4):

- (24) zine fekr i-kone ke pia tile-ye dozi
woman thought PROG-do.3SG COMP man chicken-OBJ stole.3SG.IND
'The woman thinks that the man stole the chicken.'

- (25) pia kušč kerď ke tile-ye bedoze
man attempt did.3SG COMP chicken-OBJ steal.3SG:SBJV
'The man tried to steal the chicken.'

A more difficult strategy to categorize are the **interrogative complements (cxn)** found with utterance and propositional attitude predicates:

- (26) a. They asked **if we would help them**.
b. She doesn't know **whether the boys are coming**.
c. I wonder **who John ended up marrying**.

The predicates of the complements of (26a–c) look like those found in declarative main clause constructions, and so we might describe the clauses as balanced. But the word order is not the one found in interrogative main clauses; it is not clear whether *if* and *whether* should be analyzed as complementizers; and (26c) would require the auxiliary *do* if it were a question (*Who did John end up marrying?*).

In contrast, Irish uses the interrogative construction exactly as is, with the question particle *an*, for the complement of the propositional attitude predicate ‘doubt’ (Noonan 2007:126):

- (27) An dtiocfadh sé?
Q come.FUT he
'Will he come?'

- (28) Tá amhras orm an dtiocfadh sé
 COP doubt on.me Q come.FUT he
 'I doubt if he'll come.'

Other types of deranked forms are recruited for complements. In Chantyal, the complement of 'finish' uses a sequential converb (Noonan 2007:140):

- (29) Ram ca-si cfin-ji
 Ram eat-SEQ.CONV finish-PFV
 'Ram finished eating.'

In Imbabura Quechua, the complement of 'begin' uses an Infinitive action nominal with the Accusative case suffix (Cole 1982:39):

- (30) ri-y-ta kallari-rka-ni
 go-INF-ACC begin-PST-1
 'I began to go.'

The occurrence of balancing vs. deranking strategies in complement clause constructions is determined in part by the semantic type of the complement-taking predicate (Givón 1980; Cristofaro 2003). The pattern is an implicational hierarchy, which will be called here the **Binding Hierarchy** following Givón (1980).² However, the version given below is a slightly revised version of the same hierarchy presented by Sonia Cristofaro, which she calls the Complement Deranking–Argument Hierarchy (Cristofaro 2003:125):

<i>Utterance,</i>	<i>Evaluative,</i>	<i>Desiderative,</i>	<i>Modal,</i>
<i>Propositional Attitude,</i>	<i>> Perception</i>	<i>> Manipulative</i>	<i>> Phasal</i>
<i>Knowledge</i>			

Cristofaro includes only indirect report utterance complements in her survey. Cristofaro did not find sufficient data for certain semantic types of CTP that were described by Noonan, so the types without an asterisk in Table 18.2 in section 18.2.2 are not included in her Binding Hierarchy. However, Noonan offers data regarding evaluative events, described immediately below, which suggests that these events are between Utterance / Propositional Attitude and Desiderative/Manipulative in the hierarchy.

The hierarchy means that there is no association of a specific complement construction type with particular semantic complement types or CTP event types: any complement of any complement-taking predicate can be balanced or deranked. But there is a hierarchy such that balanced constructions are found, if anywhere, at the top end of the hierarchy and extend to the right on the hierarchy from there, and deranked constructions are found, if anywhere, at the bottom end of the hierarchy and extend to the left of the hierarchy from there.

² This use of the term 'binding' is unrelated to its use in generative grammar for pronouns or in logical semantics for variables.

Noonan discusses in some detail the contrast between balanced complements and complements that are deranked by means of a special set of predicate inflections – that is, so-called ‘subjunctives’ (Noonan 2007:102–11). Noonan identifies one common semantic distinction between balanced and subjunctive deranked complements: between complements with independent time reference and those with dependent time reference (see Table 18.2). Lori, illustrated above, is a language that makes this distinction: the balanced complement of (24) has independent time reference but the deranked complement of (25) has dependent time reference. These languages divide the Binding Hierarchy between Evaluative/Perception and Desiderative/Manipulative. (Noonan’s data doesn’t include perception complements but it does include evaluative complements, as noted above.)

Another distinction that Noonan identifies is between what he calls ‘asserted’ and ‘nonasserted,’ found in a few languages, including Spanish. The ‘nonasserted’ complements, including commentative and hoping/wishing/fearing complements, are expressed in the Subjunctive form (Noonan 2007:109):

- (31) Lamento que Juan salga esta noche
 regret.1SG COMP John leave.3SG.SBJV this night
 ‘I regret that John will leave tonight.’

Noonan argues that these complements are not balanced (Indicative) because the complement proposition is presupposed. Even when the presupposed complement is factive, as in (31), the complement is in the deranked Subjunctive form.

However, the Spanish Subjunctive is also used with some propositional attitude complements. The pattern is somewhat varied, and in some cases Subjunctive alternates with Indicative (see Butt and Benjamin 2004:ch. 16 for details). But the Subjunctive is often associated with a neutral or negative epistemic stance, while the Indicative is associated with a positive epistemic stance – contrast (32), in the Subjunctive, with (33), in the Indicative (Butt and Benjamin 2004:263):

- (32) No dudo que sea verdad lo que dices
 NEG doubt.1SG COMP be.3SG.SBJV true PRN REL say.2SG
 ‘I don’t doubt whether what you say is true.’ [tentative remark]

- (33) No dudo que es verdad lo que dices
 NEG doubt.1SG COMP be.3SG.IND true PRN REL say.2SG
 ‘I don’t doubt [i.e. ‘I’m convinced’] that what you say is true.’

Positive vs. neutral/negative presupposed epistemic stance is more significant in another common contrast between ‘indicative’ and ‘subjunctive,’ which Noonan describes as ‘realis’ vs. ‘irrealis’ meaning. In such a system, the balanced ‘indicative’ form is used for both propositional attitude and commentative complements with positive epistemic stance. The deranked ‘subjunctive’ form is used for both propositional attitude complements with neutral or negative epistemic stance, and wishing/hoping/fearing predicates that also have neutral or negative epistemic stance.

Noonan gives Russian as an example of this contrast (Noonan 2007:107). The Russian Subjunctive verb form is morphologically identical to the Past Tense form (glossed as SBJV in the following examples), and it is accompanied by a Subjunctive Complementizer *čto-by* (glossed as COMP-SBJV). However, the facts of Russian are less clearcut, and indicate that epistemic stance plays a different role in choice of complement form than Noonan suggests (Dobrushina 2012, 2021).³

Propositional attitude and commentative CTPs, with a positive epistemic stance toward the complement event, use the Indicative verb form in the complement (example [34] is from Noonan 2007:107, and (35) is from George Strohl (pers. comm.):

- (34) Ja dumaju, čto Boris pridët
1SG.NOM think COMP Boris come.3SG.FUT
'I think that Boris will come.'
- (35) Ja rad, čto Boris pridët
1SG.NOM glad COMP Boris come.3SG.FUT
'I'm glad that Boris will come.'

Propositional attitude predicates with a negative epistemic stance typically use the Subjunctive complementizer and verb form (Dobrushina 2012:151, gloss added):

- (36) Tol'ko ja somnevajus', čto-by Skok otpustil
only 1SG.NOM doubt COMP-SBJV Skok set_free.SBJV
svoix vragov bez edinoj carapiny
REFL.POSS enemies without single scar
'But I somehow doubt that Skok would set his enemies free without a single scar.' [N. Leonov and A. Makeev, *Grossmejster syska*, 2003]

However, example (37) with 'hope' has a neutral epistemic stance but is in the Indicative form (Dobrushina 2012:130, gloss added):

- (37) (Nadejus', čto ty doexala normal'no [...]
I_hope COMP 2SG.NOM arrived safely
'I hope you arrived safely.' [*Pis'mo junoši*, 2004]

Dobrushina suggests that the Indicative form is due to a more positive (i.e., probable) epistemic stance. In contrast, example (38) with the CTP 'fear' expresses the complement event using the Subjunctive (Dobrushina 2012:132, gloss added):

- (38) Žele drožit potomu čto boitsja, čto-by ego ne s'eli
jelly shakes because afraid COMP-SBJV 3SG.ACC NEG eat.SBJV
'The jelly shakes because it is afraid of being eaten.' [N.Bogoslovskij, *Zametki na poljach šljapi*, 1997]

³ I am grateful to George Strohl for pointing this out to me, and to Tania Ivanova for bringing the work of Nina Dobrushina to my attention.

The complement event of ‘fear’ in Russian also uses the negative *ne*, a not uncommon phenomenon with the complement of ‘fear’ predicates (Dobrushina 2021). However, ‘fear’ uses an Indicative form for the complement if it has positive polarity (Dobrushina 2012:132, gloss added):

- (39) Žele drožit potomu čto boitsja, čto ego s''edjat
 jelly shakes because afraid COMP 3SG.ACC 3PL.PRS
 ‘The jelly shakes because it is afraid of being eaten.’

Dobrushina argues that the Indicative form indicates only (neutral) epistemic stance – i.e. an evaluative interpretation – whereas the Subjunctive form indicates a (negative) desiderative complement: ‘I am afraid, because I *don't want* the situation to come about’ (Dobrushina 2012:132, emphasis original; see section 18.2.2).

Bemba uses the balanced ‘indicative’ vs. deranked ‘subjunctive’ to express a difference in epistemic stance even for manipulative events (Givón 1971:74–75, cited in Noonan 2007:111):

- (40) John a-à-koonkomeshya Robert a-à-boombele
 John 3SG-PST-order Robert 3SG-PST-work
 ‘John ordered Robert to work (and Robert worked).’

- (41) John a-à-koonkomeshya Robert a-bombe
 John 3SG-PST-order Robert 3SG-work-SBJV
 ‘John ordered Robert to work (and Robert may or may not have complied).’

Russian uses the balanced Indicative vs. deranked Subjunctive in desideratives and manipulatives, as well as other CTPs which require the complement event to be a future event, albeit probabilistically (Dobrushina 2012). However, unlike Bemba, according to Dobrushina, the Indicative is used when ‘the epistemic component of the verb’ is ‘stronger’ (Dobrushina 2012:131), and the Subjunctive is used when the agent’s influence over the outcome of the event is ‘stronger’ (see section 18.2.2). Only negative propositional attitude CTPs such as ‘doubt’ express the complement event in the Subjunctive.

In some languages, a difference in epistemic stance is expressed through distinct complementizers even when both complements are in a balanced form – as in Jakaltek and Kinyarwanda (Noonan 2007:58,126), or in English *Alf knows that Zeke came/Alf knows if Zeke came (but I don't;* Noonan 2007:115) – or both complements are in a deranked ‘subjunctive’ form, as in Gabre complements of manipulative predicates (Noonan 2007:59). These facts all suggest that epistemic stance as well as CTP event class determine the choice of balanced vs. deranked forms, but in different ways in different languages.

A difference in predicate complement strategy sometimes distinguishes two different meanings of the complement-taking predicate. In Ancient Greek, the same predicate has a perception meaning when combined with a deranked Participle complement as in (42), but a knowledge meaning when combined with a balanced Indicative complement as in (43) (Cristofaro 2003:106):

- (42) Krití-an mén aisthano-men-os
 Kritias-ACC PTCL perceive.PRS-PTCP-M.SG.NOM
 erōn-ta Eutudēm-ou
 be_in_love_with.PRS-PTCP.M.SG.ACC Eutidemos-GEN
 'Perceiving that Kritias was in love with Eutidemos' [Xenophon, *Memorabilia*, 1.2.29]
- (43) tín-os gár áll-ou zōi-ou psuch-é (...)
 which-GEN in_fact other-GEN.N.SG creature-GEN.SG soul-NOM.SG
 the-ôn hēisthe-tai hóti ei-sí?
 god-GEN.PL perceive:PRF-IND:3SG COMP be.IND.PRS-3SG
 'In fact, what other creature's soul has realized [lit. 'perceived'] that the gods exist?' [Xenophon, *Memorabilia*, 1.4.13]

The same is true of English *I saw him arrive* (perception) vs. *I saw that he arrived* (knowledge).

In Modern Hebrew, *xošev* combined with a balanced complement is the propositional attitude event 'think' as in (44), but when combined with a deranked Infinitive complement, it is the intention event 'plan' as in (45) (Noonan 2007:135; recall that Noonan classifies intention as a desiderative event):

- (44) ani xošev še-ha-iš ganav et ha-kesef
 I think COMP-ART-man stole OBJ ART-money
 'I think the man stole the money.'
- (45) ani xošev lignov et ha-kesef
 I plan steal.IMP OBJ ART-money
 'I plan to steal the money.'

18.3.2 How to Avoid Complements, and How to Create Them

A typical complement is balanced, often with a complementizer; or deranked, with distinctive deranked predicate forms in comparison to coordinate clause, adverbial clause, or relative clause constructions. However, perhaps more so than for other complex sentence constructions, it is often the case that there is no distinct complement clause construction strategy for a particular CTP event class. Instead, other strategies are recruited for the expression of a complement-taking predicate and its complement. In this section, we describe some of those strategies, and their role in the grammaticalization of distinct complement clause constructions.

We begin at the end of the grammaticalization process: the development of a monoclausal strategy for complement clause constructions. The monoclausal strategy was already described in section 18.2.2, with reference to the lowest CTP event classes in the Binding Hierarchy: modal, aspectual, and negative

“predicates.” The term “predicate” is in scare quotes because the semantic categories of aspect, modality, and negation – a subset of the TAMP categories described in Chapter 12 and in section 13.4 – are not independent events. The expression of AMP categories in a complement clause construction – or, to put it another way, the recruitment of a complement clause construction to express AMP – means that AMP categories are conceptualized as predicates – that is, “as if” they are separate events (see section 18.2.2). Alternatively, AMP categories are frequently expressed using a monoclausal strategy – inflection, free morpheme, or complex predicate. Examples (19)–(25) in section 18.2.2 illustrate the recruitment of the complement clause construction to express AMP categories. Examples (46a–c) illustrate AMP categories of modality, aspect, and negation, respectively, using a monoclausal strategy – a complex predicate strategy – in English:

- (46)
- a. He **must** arrive tomorrow.
 - b. He **has** arrived.
 - c. He **didn't** arrive today.

A striking feature of the grammaticalization process of CTPs in the Binding Hierarchy, including AMP categories at the bottom end of the hierarchy, is that the complement event evolves to become the main predicate of the single clause that results. The putative complement-taking predicate that forms the matrix clause in the complement clause construction is reduced to an auxiliary or a verbal inflection when AMP comes to be expressed in a monoclausal construction (there are also effects on the expression of the complement event participants; see section 18.4.1).

In section 18.2.2, it was also noted that the expression of desiderative and manipulative complement clause constructions may also be monoclausal. The latter are causative constructions, whose biclausal and monoclausal strategies are illustrated in section 9.2. Here, the motivation for a monoclausal strategy is probably the conceptualization of the desire–intention–execution sequence as phases of a volitional event.

The next CTP event classes moving up the hierarchy are perception, commentative, and propositional attitude events. One subset of these event classes frequently employs a monoclausal strategy: those events which describe the perception, judgment, or propositional attitude of the speaker. Propositional attitude events expressing the perspective of the speaker are instances of epistemic modality, described in section 12.3.4. These may be expressed in English either biclausally or monoclausally, as in (47a–b), respectively:

- (47)
- a. It is **possible** that he will arrive tomorrow.
 - b. He **might** arrive tomorrow.

Perception events may also express the speaker’s perspective. When the speaker is the perceiver, then the perception complement construction functions to offer sensory evidence supporting the speaker’s assertion. This function is expressed by the grammatical category of evidentiality (see section 12.3.4),

which often distinguishes sensory (perceptual) evidence from hearsay evidence, and visual evidence from other sensory evidence categories. In fact, English *I see* and *I hear*, with 1st Person Subject and Simple Present verb form, are grammaticalizing to a visual/sensory evidential and a hearsay evidential, respectively (cf. Anderson 1986:274):

- (48) a. **I see** you got your hair cut.
 b. **I hear** Mary won the prize.

Evaluative events may also express the speaker's perspective, and may then also employ a monoclausal strategy. In Arapaho, hoping/wishing is expressed by the Desiderative proclitic *kookóós*= 'I hope / I wish' (Cowell with Moss 2008:253):

- (49) kookóóshiinosouné'eé'seo hiiwóonhéhe'.
 kookoos=ii-nosoun-nee'eessoo iiwoonhehe'
 I_wish=IPFV-still-be_thus now
 'I wish it were still that way today.' [O:Scouts, 69]

The examples in this section so far show how (mostly) monoclausal constructions can be used to express the combination of an event and its event participant instead of the biclausal complement clause construction. The remaining examples show how complement clause constructions may recruit other biclausal constructions for complement clause function. They also suggest how complement clause constructions may grammaticalize from independent juxtaposed clauses.

Unsurprisingly, the top end of the Binding Hierarchy is a source of biclausal or independent clause constructions that are different from the prototypical balanced complement clause construction. The direct report complement of an utterance predicate is very independent from the utterance predicate, as noted in section 18.3.1 – it is as balanced as a clause can get. Munro (1982) provides evidence that the utterance predicate lacks expression of object coding, as if it were intransitive (cf. Croft 2001:324–25). For example, the 'say' verb in Cahuilla lacks Object indexation in (50) (Munro 1982:307, from Katherine Siva Saubel, pers. comm.), and the predicate inflection in Yup'ik Eskimo is Absolutive, i.e. like an intransitive subject, in (51) (Munro 1982:307, from Joan Hamilton [Pirciralria], pers. comm.):

- (50) ni-ya-qa 'Hen-hichi-ka'
 I-say-PRS I-go-IPFV
 'I say, "I'm going."'

- (51) waqaa-llru-u-nga
 hello-PST-INTR-1SG(ABS)
 'I said, "Hello."'

It is common for the direct report utterance complement to be recruited for propositional attitude complements, as in Kobon (Davies 1981:1, 3; cited in Cristofaro 2003:98):

(52)	ban	nöp	hag-öp/hag-öm	[yad	ram	ar-ab-in]
	who	OBJ.2SG	say-PRF.3SG/say-SS.3SG	1SG	house	go-PRS-1SG
	a	g-öp				
	QUOT	do-PRF.3SG				

'Who said to you, "I am going home"?/Who told you that he was going home?'

(53)	yad	gasi	nöŋ-bin	[möŋ	al-an]	a	gasi	nöŋ -bin
	1SG	think-PFV1SG	rain	shoot-IMPF3SG	QUOT	think-PFV1SG		

'I think it is going to rain.'

The direct report uses the **quotative marker (str) a**; a quotative marker is a complementizer used with direct reports. Example (52) is an instance of an utterance complement clause construction. The inflected form *hagöp* 'say [perfective]' is used for direct report; the deranked SS switch-reference form *hagöm* 'say [same-subject]' is used for indirect report. Example (53) is an instance of a propositional attitude complement clause construction; it recruits the direct report utterance strategy. The semantic motivation for the recruitment of utterance complement constructions for propositional attitude complements is straightforward: the construal of thought as internal speech.

The 'say' verb can itself grammaticalize into a quotative marker, for example by accompanying the propositional attitude verb, as in Chantyal (Noonan 2007:122):

(54)	na	tisunj	Kadmandu-ri	fiya-i	bfi-wa	khi-sə	səmjfi-i
	1	last_year	Kathmandu-LOC	go-PFV	say-NR	he-ERG	remember-PFV

'He remembered that he went to Kathmandu last year.'

[lit. 'He remembered saying, "I went to Kathmandu last year"']

In this way, verbs of speaking may also evolve into complementizers that end up being extended beyond propositional attitude events in the Binding Hierarchy, as in Ewe (Lord 1976:179, 182):

(55)	me-be	me-wɔ-e
	I-say	I-do-it

'I said "I did it"/I said that I did it.' [utterance event]

(56)	fia	gbé	bé	wómagàvá	o
	chief	refuse	quo	they.PROH.come	NEG

'The chief forbade that they should come.' [manipulative event]

Complementizers introducing balanced complements are frequently derived from demonstrative pronouns. These constructions evolved from independent sentences in which the event argument is expressed as a pronominal argument of the CTP, and the event argument is expressed as an independent sentence. An example of a pair of independent sentences used in this way is the Mohawk example in (57) (Mithun 1984b:498, from Dorothy Ann Lazore, pers. comm.; punctuation indicates intonation units):

- (57) Ó:nen kwah ken' náhe' kiotáhsawen kí:, onkwehón:we
 now just bit ago it_has_begun this, real_person
 ronhténkie's.
 they_are_leaving
 'Not too long ago people began to leave (the reserve).'
 [lit. 'Not too long ago this began. People are leaving the reserve.']}

English *that* is argued to have developed into a complementizer from a pronoun (Hopper and Traugott 2003:190–94).

Mithun (2006) argues that, in fact, Mohawk does not have any complement clause constructions to speak of. Complement events and the clauses expressing complement-taking predicates are both asserted in the vast majority of instances (Mithun 2006:219), contrary to the definition given in section 18.2.1 that complement clauses are non-asserted. However, these two clauses normally occur in a single intonation unit (though prosodic differences within the intonation unit carry out different pragmatic functions; Mithun 2006:223–28).

Noonan describes a similar construction in Lango, which he calls ‘paratactic’ (Noonan 2007:87–92); an example is given in (58) (Noonan 2007:88):

- (58) áñ àpóyò àcégo dóggólâ
 I remembered.1SG closed.1SG door
 'I remembered to close the door.' [lit. 'I remembered it; I closed the door']

The “complement” clause in the Lango construction in (56) is also asserted. However, the entire sentence in (58) has the intonational contour of simple sentences (Noonan 2007:91). The Mohawk and Lango constructions in (57) and (58) appear to be at the very earliest stage of grammaticalization of independent sentences into what might become a complement clause construction.

In many languages, the purpose adverbial clause construction (see section 15.3.1) grammaticalizes into a (deranked) complement construction, often called an ‘infinitive.’ This has happened in English, as seen by the use of the allative preposition *to* combined with the Infinitive verb form for both purpose adverbial clauses, as in (59a), and infinitival complements as in (59b) (Haspelmath 1989:288–89):

- (59) a. Mary bought a camera **to take** photos of Sabina.
 b. Mary told Tom **to write** the article.

Haspelmath documents this path of grammaticalization in a variety of languages, and proposes a semantic path that is supported by the evolution of German *zu* infinitives. In Old High German, the purpose adverbializer was written *zi*; its use is illustrated in (60) (Haspelmath 1989:289):

- (60) er ward zi manne, bi si zi irsterbanne
 he became to man with them ADVR die
 'He [Christ] became a man in order to die with them.' [Otfrid V, 12, 27]

Haspelmath argues that purpose adverbial dependent clauses are first extended to manipulative and desiderative CTPs, near the bottom of the Binding Hierarchy; the desiderative complement is illustrated in (61) (Haspelmath 1989:299):

- (61) sie gerotun al bi manne inan zi rianne
 they desired all by men him COMP touch
 ‘All of them sought to touch him’ [Otfrid, II, 15, 7]

From here the deranked form extends down the hierarchy to modal complement-taking predicates as in (62), and up the hierarchy to evaluative CTPs that have neutral or negative epistemic stance as in (63) (Haspelmath 1989:299; glosses added):

- (62) es zimet dem man ze lobene wol
 it becomes the man COMP praise well
 ‘It becomes the man well to praise.’ [Tristan und Isolde, 13]

- (63) da ist vil guot ze lebenne
 there it_is very good COMP live
 ‘There it is very good to live.’ [cited in Behaghel 1924:343]

Later, the deranked form is extended to propositional attitude CTPs, and, in the modern language, to utterance CTPs (Haspelmath 1989:300; glosses added):

- (64) von dem wird genommen auch des er meint zu haben
 from him is taken even that he thinks COMP have
 ‘From him even that is taken which he thinks he has.’ [Luther’s Bible, sixteenth century]

- (65) Mutter versicherte, früh zu Hause sein zu wollen.
 mother said early to home be COMP want
 ‘Mother said that she wanted to be home early.’

With a Perfect Infinitive, the construction may also be used for commentative CTPs with positive epistemic stance, incidentally further supporting the idea that epistemic stance, as well as CTP event class, constrains the use of balanced vs. deranked forms (Haspelmath 1989:300; gloss added):

- (66) Franz bereut nicht, seine Familie verlassen zu haben.
 Franz regrets not his family left COMP have
 ‘Franz does not regret having left his family.’

Thus, the direct historical evidence from the evolution of the German *zu* deranked complement clause construction supports the Binding Hierarchy, including the placement of commentative predicates in the hierarchy.

18.4 Argument Structure and Reference Tracking in Complement Clause Constructions

18.4.1 The Gradual Unification of Argument Structure in Complement Clause Constructions

In section 18.3.2, we noted that complement clause constructions use both biclausal strategies – with a matrix clause and a dependent clause (the complement) – and monoclausal strategies. On the face of it, this is not surprising. At the top end of the Binding Hierarchy, there are two distinct events, with independent time reference and no necessary sharing of participants. Hence, a common expression of such constructions is biclausal, as in (67), where the brackets indicate the two clauses.

- (67) [Terry believes] [that the company will give her a raise next month].

Each clause has its own argument structure construction: the argument structure of the complement (*the company, her, next month*) and the argument structure of the matrix clause (*Terry*, and the complement clause representing the complement event as an argument)

Conversely, at the bottom of the hierarchy, there aren't really two distinct events – just a specification of the complement event's modality, aspect, or polarity. Even if one considers the matrix predicate to denote a "distinct event," the two "events" in the construction have dependent time reference and necessarily share all participants. Hence, a common expression of such constructions is simply monoclausal, as in (68), using an auxiliary complex predicate construction. There is only one bracketed clause, the entire sentence:

- (68) [Harry must paint the house by Saturday].

The single clause has the usual single argument structure construction characteristic of single clauses (*Harry, the house, Saturday*; see Chapters 6–7).

However, it turns out that, across languages, the biclausal strategy is used at all levels of the hierarchy, and the monoclausal strategy is also used at all levels of the hierarchy (see section 18.3.2). And, as a result, there are argument structure strategies that are "in between" the two argument structure constructions in (67) and the single argument structure in the monoclausal construction in (68).

In a propositional attitude complement clause construction such as (67), each event has independent participants and independent time reference. There are consequently two argument structures. We will call this strategy – two separate clauses, two separate argument structure constructions – the **split argument structure strategy (str)**. If there are any "accidentally" shared participants, such as Terry in (67), then reference tracking uses the discourse reference system, in this case the anaphoric pronoun *her* (see section 16.2). In contrast, the English argument structure construction for the modal construction in (68) has

a single argument structure, albeit for a complex sentence construction. We will call this the **merged argument structure strategy (str)**.

The logical place to look for in-between argument structure strategies is the one complement-taking predicate type that necessarily shares one participant only: the manipulative predicates – that is, the causative construction. In the manipulative predicate event, a causer somehow causes (or allows) a causee to perform an action; that latter action necessarily includes the causee as the agent performing the action (see section 9.2). The causee/agent is necessarily shared, but the causer and any other participants of the complement event are not.

English uses a deranked complement clause construction with a Bare Infinitive complement predicate form (example [69] is repeated from example [4] in section 9.2):

- (69) I made **him** cook **dinner**.

In addition to the deranked Bare Infinitive predicate form, the shared participant, the third person, is expressed only once, as a Direct Object (*him*) of the matrix predicate *made*.⁴ In this analysis, the argument structure is no longer completely split. It appears to be two separate argument structure constructions, in that there are two Direct Objects: the causee *him* is the Direct Object of *made*, and the created entity *dinner* is the Direct Object of *cook*. But the two argument structure constructions are starting to become one, in that the shared participant *him* is expressed only once, as an argument of the matrix clause predicate *made*. We will call this strategy the **partially merged argument structure strategy (str)**. As will be seen below, the essential feature of the partially merged argument structure strategy is that one or more participants in the complement event are instead expressed as argument phrases dependent on the matrix clause predicate.

In contrast to the English example (69), French also uses a deranked complement clause strategy, but the participants are expressed differently from English. Example (70) is repeated from example (6) in section 9.2:

- (70) J'ai fait manger le pain au/par le chat
 I have made eat:INF the bread to/by the cat
 'I made the cat eat the bread.'

Unlike (69) – or the English translation of (70) for that matter – there is no duplication of flagging of argument phrases, where English *the cat* is the Direct Object of *made* and *the bread* is the Direct Object of *eat*. In French, there is a single Subject *J'*, a single Direct Object *le pain*, and the shared participant

⁴ A common analysis is to assume that there is zero expression of the complement event agent, because it is coreferential with the matrix event causee. This analysis is commonly referred to as 'Equi,' after the name of the generative grammar transformation ('Equi-NP Deletion'). Here we propose simply that the shared participant is expressed once, and the coreference relation is a function of the semantics of the matrix event – complement event relation, namely manipulation.

is expressed with a distinct flag, the Oblique *au chat* or *par le chat*. That is, French uses the merged argument structure strategy for the manipulation event.

French uses an overtly deranked predicate form, the Infinitive *manger*, like English. Unlike English, however, the two predicates are obligatorily juxtaposed. This suggests that the French construction is on its way to becoming a complex predicate construction, with a single predication consisting of the combination *fait manger*. Whatever the status of *faire manger* – complex sentence or complex predicate – the argument structure construction in (70) is already unified.

The English partially merged argument structure strategy in (69) may be used even when the participants in the two events are independent. For example, in addition to the balanced propositional attitude complement strategy in (71a), with two separate argument structure constructions, English also has the deranked complement strategy in (71b), where one participant of the complement event is expressed as an argument phrase dependent on the matrix predicate:

- (71) a. [They believe] that [**he** defrauded the Chilean investors].
 b. [They believe **him**] [to have defrauded the Chilean investors].

Such constructions are rather unusual: they represent a combination of a deranked strategy high on the Binding Hierarchy with a partially merged argument structure construction strategy, even though the events are entirely independent. They are likely to represent an extension of the partially merged argument structure strategy from the middle of the Binding Hierarchy, for example in manipulative events as in (69), toward the upper end of the Binding Hierarchy.

In the downward direction on the Binding Hierarchy, the merged argument structure construction strategy may occur even when the complement clause construction appears to be biclausal, albeit deranked. Negative polarity can be expressed fully biclausally (with a complementizer), yet with two separate argument structure constructions, as in (72) from Boumaa Fijian (Dryer 2005a:454, from Dobrushina 2012:40):

- (72) e sega ni la'o o Jone
 3SG NEG COMP go ART John
 'John is not going.' [lit. 'That John is going is not the case']

In (72), negation is expressed as an intransitive predicate with a single argument, the complement. The complement is introduced by a complementizer (*ni*). The negative predicate is Third Person Singular, used to index a clausal argument; and *Jone* is the Absolutive Subject of *la'o* 'go.'

In some cases, it is difficult to distinguish a partially merged argument structure from a (fully) merged argument structure. If there are two argument phrases with the same flag, such as the two Object phrases *him* and *dinner* in (69), then it is clear that the argument structure is only partially merged. However, some constructions are compatible with either a partially merged or fully merged analysis.

For example, in (68), *the house* could be analyzed as the Object of *paint* – i.e. a partially merged argument structure, since the painter, Harry, is the Subject of *must* since it precedes *must*. Or *the house* could be analyzed as the Object of the complex predicate *must paint*, and Harry is the Subject of the same complex predicate – i.e. a unified argument structure analysis. Even in (72), one could analyze *o Jone* as dependent on either *la'o* or *sega*.

In some cases, however, the flagging implies a unified analysis, as in the French example (70), where the A participant of the complement event is expressed in an Oblique case. Another example is found in Finnish. Finnish uses a deranked negative complement clause construction, with a matrix negative predicate and a participle deranked complement predicate (Dryer 2005a:454, from Sulkala and Karjalainen 1992:115):

(73)	e-n	syö-nyt	omena-a
	NEG-1SG	eat-PART	apple-PRTT
'I didn't eat an apple.'			

In (73), there is a 1st Person Singular Subject argument index *-n* on *e-* ‘not’. The P participant of ‘eat’ is expressed with the Partitive Object case suffix. It is Partitive due to the negative polarity provided by *e-* ‘not,’ which suggests an analysis of *omenaa* as a dependent of *en*, or the combination *en syönyt*, and hence a unified argument structure. One strategy for indexation of complex predicates in the serial verb and auxiliary verb strategies is for expression of one argument on one element of the predicate and the other argument with the other element of the predicate (see sections 13.2.2, 13.4).

In Chantyal, an intransitive complement predicate has an Absolutive argument, but a transitive complement predicate requires an Ergative argument (as well as an Absolutive patient; Noonan 2007:141):

(74)	Ram	ca-wa	thali-i
	Ram(ABS)	eat-NR	begin-PFV
'Ram began to eat.'			

(75)	Ram-sə	sya	ca-wa	thali-i
	Ram-ERG	meat	eat-NR	begin-PFV
'Ram began to eat meat.'				

In (74)–(75), it is clear that the argument structure is determined by the complement predicate, although the argument phrase occurs at the beginning of the clause, which is compatible with its analysis as a dependent of the event expressed in the matrix verb. That is, there is a unified argument structure in (74)–(75) for the aspectual complex complement clause construction.

Partially merged argument structures can evolve into fully merged argument structures, and examples such as (72)–(75) represent the transition from the former to the latter, occurring in parallel with the transition from a complement clause construction to a complex predicate construction. However, the transition

in argument structure is not always synchronized with the transition to a complex predicate: complement clause constructions may exhibit a variety of partially or even fully merged argument structure strategies.

By far the most varied expression of argument structure and complex sentence structure is found in the CTP events just above manipulative events in the Binding Hierarchy: desiderative, perception, and evaluation.

Desiderative events are at the same point as manipulative events in the hierarchy. Like manipulative events, the complement event of desiderative events has dependent time reference. Unlike manipulative events, though, the complement event of desiderative events does not necessarily share participants with the desiderative event: you can desire a state of affairs that you are not involved in. In Lango, such a situation is expressed with a split argument structure, using a ‘subjunctive’ deranked predicate that indexes its Subject. The Subject phrase is part of the complement, coming after the complementizer *nî* (Noonan 2007:82):

- (76) ámittò nî lóca òkwâl gwènò
 want.1SG COMP man steal.3SG.SUBJ chicken
 'I want the man to steal the chicken.'

In contrast, the English translation of (76) uses a partially merged argument structure strategy, expressing the shared participant only once, but in the matrix clause as the object of *want*, before the complementizer *to*.

However, like many languages, when a participant of the complement event – usually the most salient argument – happens to be coreferential with experiencer of the desire, even Lango uses a “more” deranked complement construction, using an uninflected Infinitive predicate form, combined with a partially merged, or possibly fully merged, argument structure (Noonan 2007:77):

- (77) dákô àmòttò ryèttò kál
 woman want.3SG winnow.INF millet
 'The woman wants to winnow the millet.'

Both Lango and English use the same argument structure strategies for desiderative and manipulative complement clause constructions – part of the tendency to express desiderative and manipulative constructions the same way, even if only the latter has necessary sharing of a participant.

The partially merged argument structure strategy is usually associated with “more” deranked clause strategies, rather than a strategy that also indexes S and/or A participants, such as the Lango Subjunctive in (76). However, Albanian combines a deranked indexing strategy with a partially merged argument structure strategy (Noonan 2007:80):

- (78) Gruaja deshi njeriu ta vjedhë pulën
 woman wanted.3SG man.NOM COMP steal.3SG.SBJV chicken
 'The woman wanted the man to steal the chicken.'

In (78), the desiderative complement predicate *vjedhē* ‘steal’ indexes the A participant. The A participant’s argument phrase occurs outside the complement clause (before the complementizer *ta*); but the A participant is encoded with the Nominative form *njeriu* rather than the Accusative *njeriun* (Noonan 2007:80). In this construction, the partial merger applies only to the word order – outside the complement clause – not the flag, which is Nominative, expected if *njeriu* ‘man’ were inside the complement clause.

In the partially merged argument structure strategy, peripheral participants of the complement may be expressed as oblique argument phrases dependent on the matrix predicate (or soon-to-be complex predicate). In example (79) from Modern Irish, the shared argument is expressed by an oblique argument phrase in the matrix clause (Noonan 2007:76):

- (79) Ba mhaith liom theacht
be.COND good with.1SG come.NR
'I want to come.'

In (79), the Oblique argument phrase is the experiencer of the desire and hence the most salient argument of the complement-taking predicate, so the partially merged argument structure is not particularly surprising.

In Ancash Quechua, in contrast, the locative oblique argument of ‘build’ is expressed as if it were an argument of ‘want’ (Cole 1984:111; cf. Croft 2001:218):

- (80) noqa Huaraz-chaw muna-a [wayi-ta rura-y-ta]
I Huaraz-in want-1 [house-ACC make-INF-ACC]
'I want to make a house in Huaraz.'

In example (80), ‘want’ is separated from ‘make,’ and ‘make’ has an Accusative case suffix since the making is an argument of the wanting, while ‘house’ has an Accusative case suffix as well since it is a participant in the making event. But the Locative Oblique phrase ‘in Huaraz’ is positioned in the matrix clause, although the intended meaning is that the house-making, not the wanting, is in Huaraz.

The complement event of perception events has dependent time reference. The separation of participants in the two events is not so clear. One can perceive an event, with its accompanying participants; that is, the perceived event is an argument of the perception predicate, and the perceived event has its own participants. But perception is also construed as a perceiver perceiving an object, whether the object is also a participant in an event or not. Thus, one might argue that there is a “shared participant” between the perception event and the perceived event. Noonan argues that this is not always the case: in *I smelled Hank spreading the fertilizer*, ‘it is not Hank that is smelled’ (Noonan 2007:143, citing Kirsner and Thompson 1976).

Some languages use a split argument structure strategy with a balanced complement, such as Eastern Armenian (Noonan 2007:143, from Galust Mardirushian, pers. comm.):

- (81) kənik-ə tesav vor mard-ə hav-ə gojats^{bav}
 woman-ART saw.3SG COMP man-ART chicken-ART stole.3SG
 'The woman saw the man steal the chicken.'

A number of languages use a deranked predicate strategy combined with a partially merged argument structure strategy. In this strategy, the perceived event recruits an event modifier construction – that is, a relative clause construction (see Chapter 19). The event modifier construction modifies a referring phrase denoting a participant of the perceived event; but that phrase functions as an argument of the matrix perception predicate. In Ancient Greek, for example, the complement predicate occurs in a Participle form, and indexes the Object argument in Number, Gender, and Case (Noonan 2007:73):

- (82) Eîde autēn paúousan
 saw.3SG her.ACC stop.PTCP.PRS.F.SG.ACC
 'He saw her stop.'

In Supyire, the complement predicate form is an Adjectival form that indexes the Object argument in Gender and Number (Carlson 1994:423, cited in Cristofaro 2003:105; G1 is a gender class):

- (83) mli à u niŋ-karà-ŋi nyε mobílīŋi i
 I PF him(G1.SG) ADJ-go-DEF(G1.SG) see car.DEF in
 'I saw him going in the car.'

However, the relative clause construction in Supyire employs a different strategy for event modification than the Adjective form used in perception complement constructions (see Carlson 1994:ch. 13).

The English translation in (83) is sometimes considered to be a deranked relative clause ('participial') construction with the Present Participle *going*. However, English also allows the Bare Infinitive deranked form in perception complement clause constructions, such as *stop* in the translation of (82), *He saw her stop*. Hence, the English construction is more like a distinct complement construction that recruits deranked predicate forms from elsewhere. The English construction also uses a partially merged argument structure strategy.

French and Spanish use balanced relative clauses as perception complements, with a partially merged argument structure. Example (84) is from French (Noonan 2007:142):

- (84) Marie voit Roger qui mange les pommes.
 Mary sees Roger RPRN eats the apples
 'Mary sees Roger eating the apples.'

Middle English has an unusual perception (and knowledge) complement clause construction (Denison 1993:168):

- (85) Egipciens sawen the woman that she was ful fayre;
 Egyptians saw **the woman** COMP **she** was very beautiful
 'The Egyptians beheld the woman that she was very fair.' [a4125(a1382)
 WBible Gen. 12.14]

Example (85) uses a balanced strategy for the complement. But the participant of the complement event is expressed both by an argument phrase in the matrix clause and a coreferential argument phrase in the complement. Denison argues that the complement is not a relative clause, nor is it a third argument of the perception predicate (Denison 1993:168). If so, this is an example of a split argument structure strategy but with a participant of the complement event also expressed as a dependent of the matrix clause.

The complement event of evaluative events has independent time reference and does not have necessary sharing of participants. Nevertheless, languages including English use strategies that are partially merged:

- (86) a. It is hard (*for me*) to crack **piñon nuts**.
 b. **Piñon nuts** are hard (*for me*) to crack.

In (86b) *piñon nuts* is the Subject argument phrase of the evaluative predicate although it is a participant only in the complement event (cracking). The number of evaluative predicates that allow a partially merged strategy varies from language to language; Lango allows only one (Noonan 2007:82):

- (87) twòl bér ácámâ
 snake good for.eating
 'Snake is good to eat.'

In (86a–b), there is another argument phrase, *for me*, whose analysis is debatable. It appears to be an oblique argument phrase of the evaluative CTP *is hard*. Its fixed position, however, has led many analysts to treat it as a part of the complement construction (the so-called '*for-to* Complement'). As part of the complement, it nevertheless has an unexpected apparent flagging (*for* for the Subject of the complement).

The English so-called *for-to* Complement represents an example of a flag that is unexpected from the point of view of the complement argument structure construction, yet it is not seemingly part of the matrix clause argument structure construction either. Comrie gives an example of a somewhat similar phenomenon. The Accusative flagging of example (88) from Ancient Greek is unexpected from the point of view of either the matrix clause or the complement argument structure (Comrie 2011:12):

- (88) légetai tōùs ándras eltheîn
 say.PASS.PRS3SG the.ACC.PL.M man.ACC.PL come.AOR.INF
 'It is said that the men have come.' [lit. 'the men having come is said']

The same is true of the Object Pronoun form *him* in the English commentative complement clause construction, *Him firing Flynn was surprising*.

Finally, there are instances of participants from a complement event being expressed as the argument of a matrix clause predicate in constructions whose translations are ungrammatical in English, as in the Japanese example in (89) (Croft 2001:219, from Tsukiashi 1997:49; attested example):

- (89) watasi wa [hait-teiru-koto o] satorarenu-yoni
 I TOP be_in-PROG-COMP OBJ notice:PASS:NEG-SO_that
 [lit. 'so that I will not be noticed to be in']

One also finds examples of a participant from a complement event that is the argument of another complement clause event that is expressed as an argument of the matrix clause predicate, whose English translations are also ungrammatical, as in example (90) from Moose Cree (James 1984:210; cf. Croft 2001:218):

- (90) ite:liht:a:kosiw me:ri e:ki:alamotama:tan e:a:hkosit
 ite:liht-a:kosi-w me:ri [e:-ki:-alamotam-aw-it-a:n [e:-a:hkow-isi-t]]
 seem-AI-3 Mary SUBR-PST-tell-TA-1/2 SUB-sick-AI-3
 'It seems that I told you that Mary is sick.'
 [lit. 'Mary seems that I told you that (she) is sick']

The general pattern is that biclausal complement clause constructions evolve into monoclausal constructions with complex predicates. Part of this process is the evolution of separate argument structure constructions for the two clauses into a single argument structure construction for a single clause. But the process of argument structure evolution is not fully synchronized with the process of clause reduction and predicate conflation. This leads to the wide variety of combinations of argument structures and complement construction structures that is illustrated in this section. Nevertheless, partially merged and unified argument structure strategies are almost always associated with deranked strategies for complements.

There is a universal governing the form of the partially merged argument structure strategy, including the more anomalous examples in (85) and (89)–(90). It appears that, in all cases, participants in complement clause events may be expressed as arguments of the matrix clause predicate, using either subject, object, or oblique flags. The opposite situation, where matrix clause event participants would be expressed as arguments of the complement clause verb, is not attested (Noonan 2007:80). This universal is motivated by the process of making referents more salient in the evolving complement clause constructions by expressing them in the matrix clause instead of the dependent clause, even though their referents are participants in the dependent clause event, and often not participants in the matrix clause event (Langacker 1974).

18.4.2 Reference Tracking in Complement Constructions: Logophoric Systems

In section 18.4.1, I described more grammaticalized complement clause constructions, and the degree to which participants shared between the

matrix clause event and the complement event represent a stage in the process of evolving from a biclausal structure to a monoclausal structure. In this section, we will turn to more clearly biclausal structures in order to explore reference tracking across the matrix clause and complement.

In section 18.4.1, we introduced an example of a biclausal strategy for a complement clause construction, repeated here as (91):

- (91) [Terry believes] that [the company will give her a raise next month].

We also noted that the coreference relation was expressed the same way as coreference in general discourse – in this case, with the regular Third Person Pronoun *her*. However, this is not the only strategy employed for coreference in biclausal complement clause constructions.

In a number of languages in West Africa, from different language families and different subgroups of the families, there exists a reference tracking system which is generally called a **logophoric system (str)**. In a logophoric system, there is a contrast between two constructions. One is used when a participant in the complement event is coreferential with a salient (usually subject) participant in the CTP; this is the **logophoric construction (cxn)**. A distinct construction is used when no relevant participant in the complement event is coreferential with the subject participant of the CTP. This latter construction basically conforms to the discourse reference system of the language. The discussion here is primarily based on Culy (1994), a survey of thirty-two languages with what he calls ‘pure logophoric’ systems – namely, those where the special morphology found in the logophoric construction is unique to that construction.

A logophoric system can be illustrated by Donno Sø in (92)–(94) (Culy 1994:1056):

- (92) Oumar Anta inyeməñ waa be gi
Oumar Anta LOG.ACC seen AUX said
'Oumar, said that Anta had seen him.'

- (93) Oumar Anta woñ waa be gi
Oumar Anta 3SG.ACC seen AUX said
'Oumar, said that Anta had seen him.'

- (94) Anta wo wa Fransi booje go egaa be
Anta 3SG SBJ France go.FUT.3SG COMP heard AUX
'Anta, heard that she_{ik} will go to France.'

In (92), the person that Anta had seen is the agent of the utterance event, Oumar. This coreference relation triggers the logophoric pronoun form *inyeməñ*. In (93), the person seen is not the agent of the utterance event, so the ordinary anaphoric pronoun *woñ* is used. Donno Sø does not use the logophoric construction with a hearsay predicate such as that in (94) (see below). For this reason, the ordinary anaphoric pronoun in (94) may or may not be coreferential with the experiencer participant of the hearsay event.

Donno Sɔ represents the commonest type of logophoric construction, where a special pronoun form distinct from the ordinary anaphoric pronoun is used. More rarely, a special predicate form is used, as in Gokana. Example (95) illustrates the ordinary non-logophoric construction, and (96) the logophoric construction (Hyman and Comrie 1981:20):

- (95) aè kɔ aè dɔ
 he said he fell
 'He_i said that he_k fell.'
- (96) aè kɔ aè dɔ-ɛ
 he said he fell-LOG
 'He_i said that he_i fell.'

The primary factor determining the occurrence of the logophoric construction is the CTP event class. Culy found an implicational hierarchy such that if a CTP expressing an event class in the hierarchy uses the logophoric construction, then CTPs expressing the semantic classes to the left in the hierarchy also use the logophoric construction (Culy 1994:1061–62):

utterance < thought < knowledge

This hierarchy is, of course, the upper end of the Binding Hierarchy. A logophoric construction with an utterance predicate was illustrated in (92). Example (97) illustrates a logophoric construction with a propositional attitude predicate from Donno Sɔ (Culy 1994:1066), and (98) illustrates the logophoric construction with a knowledge predicate from Mundani (Parker 1986:155; tone marks converted to IPA):

- (97) Oumar irənɔ yogo inyemɛñ wo waa maraze
 Oumar blacksmith.DEF tomorrow LOG.ACC 3SG see think.3SG
 'Oumar thinks that the blacksmith will see him, tomorrow.'
- (98) tà kɔ àghī yū yé à lɔ'ɔ għi lá
 3SG.SBJ IMMPST:know thing that LOG IPFV FUT1 do SUBR
 'He_i knows what he_i will do.'

Culy considers factivity to be the primary factor distinguishing knowledge and propositional attitude events, and appears to include commentative events since they are factive, like knowledge events. Commentative event CTPs using logophoric constructions are reported for Mundani, as in (99) (Parker 1986:154; the same is found in Gokana; see Hyman and Comrie 1981:21):

- (99) á bɔ tɔ ñdI yé à kpélé nyà lá
 it IMMPST:be_fine him how LOG IPFV eat meat SUBR
 'It seemed fine to him_i that he_i could get some meat to eat.'

Thus, we may extend Culy's hierarchy to include commentatives. Culy also discusses 'hear (from)' as a logophoric CTP. This CTP is not part of the

logophoric system in Donno Sō, but it is in Mundani (Parker 1986:154; see also Ewe in Comrie 2004:47, citing Clements 1975):

(100)	tà	zé	nē	yé	tsè	á	m̩bì
	3SG.SBJ	IMMPST:hear	COMP	LOG	IMMPST:pass	LOC	first
'He _i has heard that he _j has come first.'							

This predicate is similar to a hearsay evidential, not unlike a (epistemic) propositional attitude event. Culy places the hearsay event in between thought (propositional attitude) and knowledge predicates in his hierarchy, leading to the following, final version of the hierarchy:

$$\text{utterance} < \text{propositional attitude} < \text{hearsay} < \text{knowledge, commentative}$$

All of the complements on this part of the Binding Hierarchy denote propositional content: speech, thought, knowledge, and emotional attitude toward a proposition. Culy found no examples of logophoric systems with perception CTPs (Culy 1994:1067).⁵

Logophoric systems are similar in function to the reference tracking systems found in coordinate clause and adverbial clause constructions described in Chapter 16. However, they differ from them in at least two ways. First, logophoric systems are typically expressed via special pronoun forms, whereas the coordinate/adverbial reference tracking systems are expressed by deranked predicate forms (an exception to the former pattern is Gokana, as noted above; Comrie 2004:43). Second, logophoric systems track reference from a salient matrix clause participant to one of several different participants in the complement, such as the participant in the relative clause in (97). In contrast, the participant tracked in coordinate/adverbial reference tracking systems is a salient participant in both clauses.

There is another similarity between logophoric systems and the coordinate/adverbial reference tracking systems worth mentioning (cf. Comrie 2004:48). Just as there are three-way contrasts in the latter reference tracking systems, Mupun provides an example of a three-way contrast in a logophoric system. Example (101) uses a logophoric system for coreference between the source of speech and a complement participant, while example (102) uses a special addressee logophoric (glossed LOG-ADD) for coreference between the addressee of speech and a complement participant; example (103) illustrates the regular anaphoric pronoun for the non-logophoric construction (Frajzyngier 1993:108, 113; glossed as in Comrie 2004:47):

(101)	wu	sat	nə	di	nas	an
	he	say	COMP	he.LOG	beat	me
'He _i said that he _j beat me.'						

⁵ Despite Culy's description of the above systems as pure logophoric systems, i.e. restricted only to the predicates in this upper part of the Binding Hierarchy, Culy discusses some other uses of the logophoric forms (Culy 1994:1071–74). However, these are rare and will not be discussed here.

- (102) n-sat n-wur nə taaji gwar dəm n-kaano
 I-say to-he COMP PROH LOGADD go to-Kano
 'I told him_i that he_j may not go to Kano.'
- (103) n-sat n-wur nə taaji wur dəm n-kaano
 I-say to-he COMP PROH he go to-Kano
 'I told him_i that he_k may not go to Kano.'

Culy also discusses what he calls 'mixed logophoric systems,' namely systems in which the distinctive forms in the logophoric construction are also used in, and possibly are recruited from, other constructions. The best-known such system is the **long-distance reflexive (str)**, where a reflexive is recruited for a logophoric construction. An example of a long-distance reflexive is the Japanese example in (104) (Sells 1987:453; cf. Culy 1994:1077):

- (104) Takasi wa Taroo ni Yosiko ga zibun o nikundeiru
 Takasi TOP Taroo DAT Yosiko SBJ self OBJ was_hating
 koto o hanasita
 COMP OBJ told
 'Takasi_i told Taroo that Yosiko hated him_j.'

Culy argues that there are several differences between (pure) logophoric systems and long-distance reflexives, which questions how closely related they are to pure logophoric systems (Culy 1994:1079–82; 1997; cf. Cole, Hermon, and Huang 2001:xxii–xxv). Long-distance reflexives also occur in a variety of other constructions, such as the causal adverbial clause construction in (105) (Sells 1987:455; cf. Culy 1994:1077):

- (105) Takasi wa Yosiko ga mizu o zibun no ue ni
 Takashi TOP Yosiko SBJ water OBJ self GEN on LOC
 kobosita node nurete-simatta
 spilled because wet-got
 'Takasi_i got wet because Yosiko spilled water on him_j'.

There is clearly no propositional content being considered in this construction; it is a relation between two events. Culy also notes that the Japanese long-distance reflexive is found in the complements of perception CTPs, which never occurs in pure logophoric systems (Culy 1994:1077).

Finally, long-distance reflexives are optional when they occur in the complements of CTPs that typically allow logophoric constructions (in contrast, reflexives are obligatory in a simple clause, as in *He_i killed himself/*him_j*). Culy gives examples from Japanese, Icelandic, and Italian; example (106) is from Icelandic (Culy 1994:1081, from Thráinsson 1990:303):

- (106) Jón telur að María elski hann/sig
 John believes that Maria loves.SUBJ him/self
 'John_i believes that Maria loves [subjunctive] him/himself.'

Culy concludes that long-distance reflexives are ‘reflexives first,’ even in their uses outside a single clause, although they may indirectly indicate ‘point of view’ (Culy 1997). There is a wide range of sentence and discourse contexts in which long-distance reflexives are used, but they have not been systematically explored typologically, and those uses go beyond the topics covered in this textbook.

Terms Defined in this Chapter

18.1 Introduction: Events as Arguments (Complement Clauses) and Events as Modifiers (Relative Clauses)

18.2 The Semantics of Complement Clauses

18.2.1 Introduction

complement clause construction (*cxn*), complement dependent clause (*a.k.a.* complement) (*cxn*), complement-taking predicate (CTP) (*cxn*)

18.2.2 Semantic Types of Complement-Taking Predicates

utterance event (*sem*), direct report (*str*), indirect report (*str*), independent time reference (*sem*), necessary participant sharing (*sem*), propositional attitude event (*sem*), knowledge event (*sem*), pretense event (*sem*), commentative event (*sem*), factive (*sem*), fearing event (*cxn*), hoping event (*sem*), wishing event (*sem*), non-factive (*sem*), evaluative event (*sem*), perception event (*sem*), dependent time reference (*sem*), desiderative event (*sem*), manipulative event (*sem*), achievement event (*sem*), phasal event (*sem*)

18.3 Strategies for Complement Clause Constructions

18.3.1 Balancing and Deranking Strategies, and the Binding Hierarchy

complementizer (*str*), interrogative complement (*cxn*), Binding Hierarchy

18.3.2 How to Avoid Complements, and How to Create Them

quotative marker (*str*)

18.4 Argument Structure and Reference Tracking in Complement Clause Constructions

18.4.1 The Gradual Unification of Argument Structure in Complement Clause Constructions

split argument structure strategy (*str*), merged argument structure strategy (*str*), partially merged argument structure strategy (*str*)

18.4.2 Reference Tracking in Complement Constructions: Logophoric Systems

logophoric system (*str*), logophoric construction (*cxn*), long-distance reflexive (*str*)

19 Events as Modifiers

Relative Clause Constructions

19.1 The Semantics and Information Packaging of Relative Clause Constructions

In relative clause constructions (*cxn*), an action functions as a modifier of a referent (see also Keenan and Comrie 1977; sections 2.2.5, 4.1.5). Action or event modification, like reference to actions (Chapter 18), is a nonprototypical combination of semantic class and propositional act function. The prototypical semantic class in modification is property concepts. A property concept is a (prototypically) scalar, stative, inherent concept; an action concept is a (prototypically) nonscalar, dynamic, and transitory concept (section 2.1). However, both property concepts and action concepts are relational: they presuppose participants who possess the property or carry out the action. An important difference is that most property concepts have unary valency (section 6.1.2) – that is, they have only one participant (the one that possesses the property). In contrast, action concepts frequently have binary or ternary valency, as well as possibly expressing peripheral participants.

Relative clause constructions represent a figure–ground construal between the matrix clause and the relative clause (Reinhart 1984; see section 15.1.3). An unpublished survey of relative clauses in narratives and procedural texts in a crosslinguistic sample of twelve languages by the author and students in a 2014 seminar indicated that all the events denoted by the relative clauses had been mentioned or at least evoked previously in the text. That is, the proposition expressed by the relative clause is pragmatically presupposed (section 11.4.1), a typical feature of concepts that are functioning as the ground for a concept that serves as a figure. As will be seen below, there are morphosyntactic similarities between some relative clause strategies and adverbial clause strategies.

The presupposed status of relative clauses may motivate their being recruited to express the presupposed open proposition in identificational constructions using the equational strategy (section 11.4.2), and also in information questions, which are closely related to identificational constructions (section 12.3.2). Relative clauses are also recruited for thetic constructions (section 11.3.2). This is perhaps because thetic construction strategies tend to be differentiated from the topic–comment construction that expresses reference–predication information packaging: relative clauses express a reference (head)-modification packaging.

The relative clause construction consists of two clauses, the matrix clause and the **relative clause** (*cxn*). The relative clause functions as a modifier of the head of a referring phrase, the **relative clause head** (*cxn*). These parts of the relative clause construction are illustrated in the English example in (1): the relative clause, in brackets, is *I had lost*; the relative clause head, in boldface, is *the key*, and the matrix clause is *I found the key*. (The relative clause will be bracketed in all examples in this chapter.)

- (1) I found **the key** [I had lost].

The referent of the relative clause head is a participant in the relative clause event. The relative clause head referent is also a participant in the matrix clause event. In other words, there is a necessary shared participant between the relative clause event and the matrix clause event, namely the head referent. The participant sharing is necessary in the sense that it is part of the definition of a relative clause construction used in this book. The relative clause construction is related to other constructions that do not require the sharing of participants; these other constructions will be discussed in sections 19.2.3–19.2.4.

Perhaps the most important, and definitely the most distinctive, characteristics of the variation in relative clause constructions are a consequence of the fact that the head referent is a participant shared between the two events. First, there is how the shared participant is expressed as a referring phrase (or not expressed at all) in the matrix clause and the relative clause; this is how reference tracking is manifested in relative clause constructions (section 19.2). The sharing of participants in relative clause constructions is similar to the sharing of participants in complement clause constructions (section 18.4.1). This fact appears to motivate some morphosyntactic similarities between relative clause constructions and complement clause constructions (see sections 19.2.3–19.2.4). Second, there is how the participant roles of the shared participant are expressed in the construction, since the shared participant has one role in the matrix clause event and another role in the relative clause event (section 19.3). Relative clause constructions often differ depending on the role of the shared participant in the relative clause event, and sometimes depending on its role in the matrix clause event.

19.2 Strategies for Relative Clause Constructions

19.2.1 Balancing and Deranking

Like the other complex sentence constructions encountered in Part IV of this textbook, relative clause constructions may be balanced or deranked, and syndetic or asyndetic. English illustrates all of these strategies:

- (2)
- a. the book [**that** I bought]
 - b. the book [**Ø** I bought]
 - c. the book [sitting on the floor]

Examples (2a–b) are balanced in that the predicate form is identical to that found in declarative main clauses (*I bought a book*). The absence of an overtly expressed Direct Object is a consequence of the strategy that English uses for the expression of the shared participant in the relative clause (see section 19.2.2).

Example (2a) is syndetic: it includes the **relativizer (str) that** (though see section 19.2.2 for some debate over the analysis of *that*). Relativizers, like complementizers, frequently originate from pronominal forms. Relativizers also frequently originate from a definite article, which in turn frequently originates from a demonstrative pronoun (see section 3.3.2). K'ichee' preserves a three-way deictic distinction in its articles/relativizers. The relativizer *rī* in (3), the invisible form, is used for referents that are not present in the speech act situation and not visible (Mondloch 1978:83):

- (3) utz rī nu-tz̄'I [rī x-Ø-i-sipa-j ch<w>e]
 good ART.INVS 1SG.POSS-dog REL.INVS PF-3SG.ABS-2PL.ERG-give-TR <1SG>to
 'the dog that you gave me is good'

Overtly deranked predicate forms in relative clauses are typically called **participles (str)**, as in English and other European languages. The term 'participle' describes a deranked predicate form primarily or exclusively used for modification. If the deranked predicate affix is also used for reference, it is often called a 'nominalizer,' as in Turkish (Comrie 1989:142; see also section 19.3), although strictly it is a nominalizer that has been recruited here for the participle strategy:

- (4) [Hasan-in Sinan-a ver-dig-i] patates-i yedim
 Hasan-of Sinan-to give-NR-his potato-ACC I.ate
 'I ate the potato that Hasan gave to Sinan.'

19.2.2 Expression of the Shared Participant: The Externally Headed Strategy

The primary classification of relative clause strategies is based on how the shared participant of the matrix clause event and the relative clause event – the one that is denoted by the relative clause head – is expressed in the matrix and/or relative clause(s) (see Keenan and Comrie 1977; Lehmann 1984; Comrie 1989:ch. 7). Three broad groups have been identified: externally headed, internally headed, and adjoined. Of these, the first is by far the most common and has been divided into subtypes of strategies. The latter two strategies, along with strategies that are related to them, will be discussed in section 19.2.3.

An **externally headed (str)** relative clause construction expresses the shared participant as a full referring phrase in the matrix clause, and either as a pronoun or not at all in the relative clause. The relative clause is usually, though not always, adjacent to the external head. The English constructions in (2) in section 19.2.1 are examples of the externally headed strategy, with the relative clause following the external head (*the book*).

The externally headed strategy is the overwhelmingly most common strategy. It is the dominant strategy for around 90 percent of the 824 languages sampled in the relevant chapter of the World Atlas of Language Structures (Dryer 2013f; note that the WALS sample is not a stratified sample). The externally headed strategy is generally divided in two different ways: order of relative clause and external head, and expression of the shared participant in the relative clause. Dryer (2013f) divides the external head strategy by word order. The order external head – relative clause, called **postnominal (str)** or abbreviated NRel, is illustrated in examples (2) and (3) in section 19.2.1 from English and K'ichee', respectively. The postnominal strategy is found in three-quarters of the languages whose dominant strategy is externally headed (Dryer 2013f). The opposite order, called the **prenominal (str)**, is illustrated in example (4) from Turkish. The prenominal strategy is a decided minority, and is almost always found in languages with basic object–verb (OV) order. (A third word order strategy, extraposed, is described in section 19.2.4.) Postnominal and prenominal relative clauses also use either syndetic or asyndetic strategies, and either balanced or deranked strategies. However, no statistics have been published regarding the distribution of these strategies across word orders.

Three strategies are found for the expression of the shared participant in the relative clause in a relative clause construction using the externally headed strategy. One common strategy is simply no expression of the shared participant in the relative clause at all; this strategy is called the **gap strategy (str)** (e.g., Keenan and Comrie 1977:69; Comrie 1998b:63). The gap strategy is common for English, assuming that *that* is a relativizer (see below):

- (5) the men [that you had given the books to __]

The analysis of the “gap,” indicated by the underline in (5), is a matter of debate, and we will return to that topic in section 19.2.4. For now, we will simply say that there is only a single expression of the shared participant in the gap strategy: in the matrix clause, as the external head.

The second (sub)strategy for expression of the shared participant in the relative clause, also very frequent (Comrie 1998b:63), is with an anaphoric pronoun – that is, the form that would be found in a simple main clause construction with a relatively highly accessible referent. This strategy is known as the **pronoun retention strategy (str)** (Comrie 1998b:63) or the ‘resumptive pronoun’ strategy. Farsi uses the pronoun retention strategy (Lambton 1957:76; Comrie 1989:139):

- (6) mardha-i [ke ketabha-ra be anha dade budid] raftand
man that books-ACC to them you_had_given went
'The men that you had given the books to went.'

The third (sub)strategy for expression of the shared participant in the relative clause is rare and appears to be largely restricted to the European linguistic area; it is found in both Indo-European and non-Indo-European languages in this area

(Comrie 1998b:59–61). This is the **relative pronoun strategy (str)**: the use of a special pronoun different from the usual anaphoric pronoun, used exclusively in relative clause constructions, called the **relative pronoun (cxn)**. This strategy is also found in English, where (as in many Indo-European languages) the relative pronoun is etymologically related to the interrogative pronoun:

- (7) a. the girl [**who** won the prize]
 b. the book [**which** you bought]
 c. the men [**who** you gave the books to] / [to **whom** you gave the books]

The relative pronoun is usually not in the normal position for the argument phrase in the relative clause. In most of the European area languages, which have NRel word order, the relative pronoun is in initial position in the relative clause and thus adjacent to the external head that the relative pronoun is coferential with (Haiman 1985b:239–50). The relative pronoun often indicates flagging (see section 19.2.3); English is typologically unusual in leaving (“stranding”) the preposition in the location where the referring phrase would normally occur.

The different substrategies of the externally headed relative clause strategy are given in Table 19.1.

Examples (5), (6), and (7) are relatively clear cases of the gap, pronoun retention, and relative pronoun strategies, respectively. However, there are some strategies that are more complicated to categorize. For example, consider the Paameese relative clause construction in (8) (Crowley 1982:99; see also the K'ichee' example (3) in section 19.2.1):

- (8) Molatin kail [keke amualial] alongen ave.
 molätine käile kekee amuali~ali alongenV avea
 man PL SUBR 3PL.RL:go_to_bush:RDP 3PL.RL:hear.COMM bell
 ‘Those men who had gone to the bush heard the bell.’

The question arises as to which of the substrategies the construction in (8) belongs with, the gap strategy or the pronoun retention strategy. In the English example (5), it is obvious, because zero anaphora is not generally found in discourse coreference, as was noted in sections 16.2 and 18.4.1. In a language like Paameese or K'ichee', where zero anaphora occurs in discourse reference, it is not so clear that the gap strategy is being used. We will assume that the pronoun retention strategy requires an independent anaphoric pronoun.

Another problem arises because pronouns of one type or another are the diachronic sources of both complementizers and relative pronouns. The standard analysis of English *that* in (2a) and (5) is that it is a relativizer; in contrast, *which* in (7b) is standardly analyzed as a relative pronoun. Evidence from nonstandard varieties of English, and even Standard English, muddy the picture somewhat (Comrie 1999). Comrie notes that some linguists, such as Haiman (1990), have argued that *that* in (9a) is a relative pronoun because it is obligatory (Comrie 1999:83):

Table 19.1 Substrategies of the externally headed relative clause strategy

Argument phrase in matrix clause	Argument phrase in relative clause	Name of relative clause type	Comments
full noun	nothing ("gap")	externally headed relative clause, gap	usually next to head noun; pre- or postnominal
full noun	personal pronoun	externally headed rela- tive clause, pronoun retention	usually next to head noun; usu- ally postnominal
full noun	relative pronoun	externally headed relative clause, relative pronoun	usually next to head noun; always postnominal

- (9) a. I didn't like the guy [**that** spoke first].
 b. *I didn't like the guy [spoke first].

This analysis applies only when the shared participant functions as the subject referent of the relative clause; and, in fact, some speakers find (9b) acceptable (Comrie 1999:83). Comrie, however, notes that in Irish English, *that* may occur in the Genitive -'s form, making it look more like a pronoun (Comrie 1999:86, from Harris 1993:150–51):

- (10) Remember the man [**that's** house burned down]?

[Standard English: Remember the man **whose** house burned down?]

Conversely, the relative pronoun *which* may be combined with an anaphoric pronoun, i.e. the pronoun retention strategy, in contexts where the gap strategy is not allowed (Comrie 1999:89; [11a] is from Scottish English [Miller 1993]).

- (11) a. an address [**which** I hadn't stayed **there** for several years]
 b. the road [**which** I don't know where **it** leads]

The pronoun retention strategy may also be used with *that* in similar contexts where the gap strategy is not allowed, as in (12) (Comrie 1999:89, also from Scottish English [Miller 1993]; the examples in [11]–[12] are all typical of spoken American English as well):

- (12) the spikes [**that** you stick in the ground and throw rings over **them**]

In (11a–b), *which* seems to be grammaticalizing into a relativizer as in (12), or at least some type of subordinator (see section 19.2.4). The same has happened to the Farsi relativizer *ke*, which is the older form of the relative pronoun 'who' (Lambton 1957:76;) but is now also used for all relative clauses (Yousef 2018:289).

19.2.3 Expression of the Shared Participant: Internally Headed, Adjoined, and Related Strategies

The remaining strategies for relative clause constructions occur in a small minority of languages. Of these strategies, the **internally headed strategy (str)** is the most common, found as a dominant strategy in 24 of the 824 languages in the World Atlas of Language Structures sample (around 3 percent). It is an alternative strategy in another 39 languages, occurring therefore in a total of around 8 percent of the languages in Dryer's sample (Dryer 2013f).

The internally headed strategy expresses the shared participant only in the relative clause. The relative clause occurs in the position where the relative clause head would normally occur in the matrix clause. The internally headed relative clause may include nominal inflections that one would normally expect on the relative clause head alone, as in Imbabura Quechua (Cole 1982:55):

- (13) [kan kwitsa-man kwintu-ta villa-shka]-Ø-ka ali kwitsa-mi
 you girl-to story-ACC tell-NR-NOM-TOP good girl-VAL
 'The girl to whom you told the story is a good girl.'

The internally headed strategy expresses the entire relative clause morphosyntactically as if it were in the grammatical role of the relative clause head referring phrase. In this respect, the structure of an internally headed relative clause construction resembles that of the complement clause construction (Chapter 18), where the entire situation denoted by the complement is an argument of the main clause predicate. In Imbabura Quechua, the internally headed strategy essentially recruits a complement clause construction: compare (13) to the propositional attitude complement construction in (14) (Cole 1982:35):

- (14) sirtu-mi [Marya mishu shimi-ta parla-j]-Ø-ka
 true-VAL María mestizo language-ACC speak-NR-NOM-TOP
 'It is true that María speaks Spanish.'

The nominalizers used for the relative clause construction (Past *-shka*, Present *-j*, Future *-na*) are virtually the same as those used for Indicative complements (Past *-shka*, Present *-j ~ -y*, Future *-na*; Cole 1982:35, 47).

Complement clause constructions and relative clause constructions have in common that something in the dependent clause (complement or relative clause) is an argument of the predicate of the matrix clause (section 18.1). In the case of complements, it is the entire situation (event or proposition) expressed by the complement. In the case of relative clauses, it is the shared participant in the events expressed by the relative clause and the matrix clause. This similarity motivates the recruitment of the complement clause construction for the relative clause construction, at least in a minority of languages. The similarity may also motivate the recruitment of the relative clause construction for perception complement clauses, as noted in section 18.4.1.

The third broad strategy is the **adjoined strategy (str)**. In the adjoined strategy, the relative clause does not appear to function as a modifier of the relative clause head. This strategy is quite rare either as a dominant strategy or an alternative strategy, occurring in only 10 of the 824 languages in the World Atlas of Language Structures sample (Dryer 2013f). It is also geographically concentrated, all but two cases occurring in Australian languages.

Hale (1976) surveys the adjoined strategy in Australia; example (15) is from Warlpiri (Hale 1976:78):

- (15) ɳatjulu-ju ɳa yankiri pantu-ju [kutja-lpa ɳapa ɳa-ɳu]
 I-ERG AUX emu spear-PST COMP-AUX water drink-PST
 a. 'I speared the emu while it was drinking water.'
 b. 'I speared the emu which was drinking water.'

As the translation indicates, the adjoined relative clause construction in Warlpiri is essentially the same as the temporal adverbial clause. Hale notes that this is typical of adjoined relative clauses in Australian languages (Hale 1976:79). The same construction is used when there is no shared participant between the two clauses (Hale 1976:79):

- (16) ɳatjulu-ju lpa-ɳa kali tjantu-ɳu, [kutja-npa ya-nu-ɳu njuntu]
 I-ERG AUX boomerang trim-PST COMP-AUX walk-PST-hither you
 'I was trimming a boomerang when you came in.'

In other words, the adjoined strategy appears to simply be the recruitment of the temporal adverbial clause to function as a modifier of the relative clause head. The relative clause head is expressed only in the matrix clause, but this is presumably due to the fact that the shared participant is highly accessible and hence is not expressed in the relative clause (i.e., zero anaphora).

To summarize at this point: with respect to the expression of the shared participant, there is one overwhelmingly common strategy, the externally headed strategy, which can be subdivided into subtypes based on word order and/or the expression (or not) of the shared participant in the relative clause. Then there are two relatively rare strategies which appear to be recruited from other complex sentence constructions: the internally headed strategy appears to be recruited from the complement clause construction, and the adjoined strategy is recruited from the temporal adverbial clause construction.

In addition to these strategies, there are several other attested strategies, most of which are rare, that are morphosyntactically intermediate to the two rarer strategies described above.

One of these other strategies has been called the **correlative strategy (str)**. The correlative strategy is the dominant strategy for seven languages in the World Atlas of Language Structures sample; it is an alternative strategy in another sixteen languages, occurring therefore in a total of around 3 percent of the languages in the sample. However, it is geographically fairly restricted, with most examples found in South Asia, and another set of examples in far West Africa (Dryer 2013f).

In the correlative strategy, the relative clause head occurs as a full referring expression in the relative clause, but occurs again in the matrix clause, at least in pronominal form. An example from Hindi is given in (17) (Comrie 1989:146):

- (17) [admi ne jis cakū se murgī ko mara tha]
 man ERG which knife with chicken ACC killed
 us cakū ko rām ne dekhā
 that knife ACC Ram ERG saw
 'Ram saw the knife with which the man killed the chicken.'
 [lit. 'The man killed the chicken with which knife, that knife Ram saw']

Comrie notes that the referring phrase in the matrix clause in (17), *us cākū* 'that knife,' could also be expressed by a pronoun.

The correlative strategy resembles all three strategies in one respect or another. It resembles the internally headed strategy in that the full form of the relative clause head occurs inside the relative clause. In fact, Dryer describes the correlative strategy as a special case of the internally headed strategy, in which the relative clause head is expressed by a pronoun in the matrix clause (Dryer 2013f). The correlative strategy resembles the adjoined strategy in that the correlative relative clause appears to be a separate clause from the matrix clause. Comrie argues that the correlative strategy is a special case of the adjoined strategy because the relative clause is not a constituent of the matrix clause (Comrie 1989:146). Finally, the correlative strategy, at least in Hindi, resembles the relative pronoun substrategy of the externally headed strategy in that the relative clause head is combined with a relative pronoun form.

The prototypical internally headed relative clause expresses the entire relative clause as if it were an argument of the verb; its structure is that of a complement clause, or a simple main clause (if it is balanced). The prototypical correlative clause expresses the relative clause head in the matrix clause, at least as a pronoun; the relative clause has a relative marker and is adjoined to the matrix clause; it is neither an argument of the matrix clause nor a modifier of the relative clause head in the matrix clause. However, there are examples of other strategies that mix these morphosyntactic properties.

The Bambara construction in (19) expresses the relative clause head inside the relative clause, but it contains a relative marker *mìn*; compare the simple sentence (18) to the internally headed relative clause construction in (19) (Bird 1968:46, glossed as in Comrie 1989:145):

- (18) n ye so ' ye
 I PST house the see
 'I saw the house.'
- (19) tyè ' be [n ye so mìn ye] dyɔ
 man the PRS I PST house REL see build
 'The man is building the house that I saw.'

Thus, the internally headed strategy is not always identical to the strategy used in the complement clause construction or a simple main clause (the Bambara morpheme *min* is used in some complement clauses; Dumestre 2003:373). Dryer (2013f) treats (19) as an instance of the internally headed strategy.

Bambara also uses a correlative strategy, which differs from the construction in (19) by the presence of an overt pronoun form *ò* in the matrix clause, and by being adjoined to the matrix clause (Bird 1968:43; cf. Keenan 1985:165):

- (20) [n ye tyè min ye] ò be fini fère
I PST man REL see that PST cloth.the sell
'The man that I saw, he sells the cloth.'

Wappo has a prototypical internally headed relative clause, with flagging of the entire relative clause, as in (21) (Li and Thompson 1978:107). However, it also has a construction without flagging of the relative clause, with the relative clause adjoined to the matrix clause, and an overt pronoun in the matrix clause, as in (22) (Li and Thompson 1978:108; cf. Keenan 1985:162, 165; Sanuma has the same strategy as (22); see Borgman 1990:134):

- (21) [?i čhuya-Ø t'umt]-i šoy'ikhi?
me house-ACC bought-NOM burned_down
'The house I bought burned down.'

- (22) [?i čhuya-Ø t'umt] cephi šoy'ikhi?
me house-ACC bought it(NOM) burned_down
'The house I bought burned down.' [lit. 'I bought the house, it burned down.']}

There is also what Dryer calls the double-headed strategy, which is dominant in only one language in his sample, Kombai, and is an alternative strategy in only four other languages (Dryer 2013f). In the double-headed strategy, the relative clause is adjoined, and the shared participant is expressed as a full referring phrase in the relative clause, like Wappo example (22). But the shared participant is also expressed as a noun in the matrix clause, like Hindi example (17). The noun may be repeated in the matrix clause, as in (23); but, more often, it is a very general noun: *ro* for things as in (24), *rumu*, or another general noun for persons (de Vries 1993:78, 77; cf. Dryer 2013f):

- (23) [dou adiyano-no] dou, deyalukhe
sago give.3PL.NFUT-CONN sago finished.ADJ
'The sago that they gave is finished.'

- (24) [gana gu fali-kha] ro na-gana-ya
bush_knife 2SG carry-go.2SG.NFUT thing my-bush_knife-PRED
'The bush knife that you took away is my bush knife.'

Examples (22)–(24), and correlative relative clauses, are syntactically adjoined – that is, they do not occur in the position expected for the relative clause head

in the matrix clause. In this respect, they differ from the prototypical internally headed relative clause. They are similar to the internally headed strategy in that the relative clause head occurs as a full referring phrase in the relative clause. The prototypical adjoined relative clause, as in Warlpiri example (15), on the other hand, expresses the relative clause head in the matrix clause, as well as allowing a temporal adverbial interpretation. Thus, the adjoined relative clause appears to be quite different from the other strategies described in this section so far. But there is a strategy found in Japanese that seems to bridge this gap as well.

Japanese has a general externally headed relative clause strategy that will be described in the following section. It also has a more limited strategy, called an Internally Headed Relative Clause (IHRC) by Japanese linguists (Ohori 1995, 2001; Iwasaki 2013:229–34). The Japanese IHRC, like a prototypical internally headed relative clause, contains the relative clause head, which otherwise does not occur in the matrix clause. It also takes the flag appropriate for the relative clause head in the matrix clause, which is suffixed to the complementizers *no* or *tokoro* (Iwasaki 2013:230–31 argues that *no* is not a pronoun in this construction). Example (25) illustrates a Japanese IHRC which allows either *no* or *tokoro* (Ohori 2001:280, 285):

- (25) [yoogisya-ga heya-kara dete.kita tokoro]-o tukamae-ta
 suspect-NOM room-from came.out **tokoro**-ACC catch-PST
 '(X) caught the suspect who came out of the room.' or
 'As the suspect came out of the room, (X) caught him/her.'

The Japanese IHRC with *no* uses the same strategy as certain complement clause constructions (see section 19.2.4), not unlike the Imbabura Quechua internally headed relative clause in (13). In fact, at least one predicate, *toraeta* ‘grasped,’ allows for either a relative clause interpretation when it means ‘capture,’ or a complement clause interpretation when it means ‘realize’ (Ohori 1995:100–1):

- (26) wareware-wa [tekigun-ga atumatte iru]-no-o torae-ta
 we-NOM enemy_force-NOM get_together be-**no**-ACC grasp-PST
 'We captured the enemy forces who were getting together.' or
 'We realized that the enemy forces were getting together.'

However, as the translation to (25) indicates, the Japanese IHRC, like the Warlpiri adjoined relative clause, also has a temporal adverbial interpretation requiring temporal overlap or contiguity between the events (Iwasaki 2013:232). There are also examples where there is no necessary shared participant (Ohori 1995:102; X refers to an unexpressed participant):

- (27) [pittyaa-ga gaikaku hikume-o nerat-ta]-no-o
 pitcher-NOM outside low-ACC aim-PST-**no**-ACC
 sentaa-mae-ni hakonda
 center_field-front-DAT brought
 '(X) drove (the ball) to the center field as the pitcher aimed at low and outside.'

The *no* marker of the Japanese IHRC is a complementizer, as noted above, which fits with the flagging and position of the relative clause. The adverbial construal is surprising from this perspective. Ohori notes that *no* combines with oblique case suffixes to form adverbializers, though not the nominative or accusative cases that Japanese IHRCs occur with. He suggests that the Japanese IHRC with *no* may have been reanalyzed as an adverbial clause construction (Ohori 1995:102). *Tokoro* originated as a locational noun and came to be used in locative relative clauses in Old Japanese, as in (28), and then was extended to a more general circumstantial use as in (29), and, by Late Middle Japanese, came to be used with a temporal adverbial meaning that was also interpretable as a relative clause, as in (30) (Ohori 2001:282, 284):

- (28) ima-ha, [kano haber-i-si tokoro]-wo mo sute.te,...
now-TOP that be-PFV *tokoro*-ACC PRT abandon
'Now, (he) had abandoned the place where (he) used to live...'
(*Genzi*, vol. 3, 344)
- (29) [sode kahesu tokoro]-wo hito.wore... mahi-tamaheru
sleeve wave *tokoro*-ACC one_passage dance-POL
'(*Genzi*) danced a passage where (he) waved (his) sleeves.'
(*Genzi*, vol. 1, 292)
- (30) [asi-ni kakat.te tobu koto-wo enanda tokoro]-wo waranbe-domo
feet-DAT tangle fly COMP-ACC be_unable *tokoro*-ACC kid-PL
sono.mama yot.te tukamaeta
as_is come_close caught
'as (a crow) was unable to fly with its feet tangled (in a sheep's wooly back),
kids came across (it) and caught (it).' (*Amakusa/Isopo* 490) or
'kids came across and caught a crow that was unable to fly with its feet tangled.'

The morphosyntactic traits of the different rare relative clause strategies are listed in Table 19.2. Note that all but the prototypical adjoined strategy express the shared participant in the relative clause as a full referring expression.

Table 19.2 indicates that the two rare strategies described above, the internally headed strategy and the adjoined strategy, appear to be the endpoints of a continuum of equally rare relative clause strategies. The two endpoints of the continuum represent very different morphosyntactic structures. The adjoined relative clause is recruited from the temporal adverbial clause construction, while the prototypical internally headed relative clause is recruited from the complement clause construction. Yet the continuum between the two strategies means that dividing the attested strategies into distinct types is somewhat arbitrary. Also, not all intermediate strategies appear to be recruited from a complement clause construction or an adverbial clause construction. At least some of the intermediate types seem to originate with the combination of two independent clauses.

Table 19.2 *Continuum of rare relative clause strategies*

	Shared participant in matrix clause?	Form, meaning of relative clause?	Flagging, position of relative clause?	Examples
Prototypical internally headed strategy	not expressed	like complement clause	flagging, argument position	Imbabura Quechua ex. (13), Wappo ex. (21)
(unnamed strategy)	not expressed	relative marker	flagging, argument position	Bambara ex. (19)
(unnamed strategy)	expressed as pronoun	no marker	no flagging, adjoined	Wappo ex. (22), Sanuma Kombai exx. (23)–(24)
Dryer's 'double-headed' strategy	expressed as noun, often general	no marker	no flagging, adjoined	
Prototypical correlative strategy	expressed as pronoun or noun	relative marker	no flagging, adjoined	Hindi ex. (17), Bambara ex. (20)
(unnamed strategy)	not expressed	like complement clause, temporal adverbial meaning	flagging, argument position	Japanese exx. (25)–(27), (30)
Prototypical adjoined strategy	expressed as a noun – and zero anaphora in the relative clause	adverbial form, temporal adverbial meaning	no flagging, adjoined	Warpipi ex. (15)

19.2.4 Noun Modifying Clause Constructions as a Relative Clause Strategy

Comrie and Matsumoto (Matsumoto 1997; Comrie 1998b; Matsumoto, Comrie, and Sells 2017) argue that another strategy with respect to the expression of shared participants should be distinguished. They begin from the most generally used Japanese relative clause construction, illustrated in (31) (Comrie 1998b:68):

- (31) [gakusei ga katta] hon
student NOM bought book
‘the book which/that the student bought’

Example (31) seems to be a straightforward example of an asyndetic externally headed relative clause using the gap strategy. Comrie argues that it is not clear that there is actually a gap. He notes that the relative clause in (31) is identical to a simple clause, as in (32), since Japanese uses zero anaphora for high accessibility referents (Comrie 1998b:68):

- (32) gakusei ga katta
student NOM bought
‘The student bought [it].’

On the other hand, the zero anaphora proposed for (31) would precede the full expression of the referent *hon* ‘book,’ since the Japanese relative clause is prenominal.

However, the more crucial fact is that the same strategy is used for **noun complement clause constructions (cxn)**, where it is unclear that there is any shared participant (Comrie 1998b:70):

- (33) [gakusei ga hon o katta] zizitu
student NOM book ACC bought fact
'the fact that the student bought the book'

The truth value of the proposition expressed in the subordinate clause is hardly a “participant” in the event associated with the proposition. The term ‘noun complement’ represents the fact that the nouns “modified” by the **noun complement (cxn)** denote the same semantic class of concepts denoted by the complement-taking predicates at the upper end of the Binding Hierarchy (sections 18.2.2, 18.3.1): speech report, propositional attitude, evaluation.

In English, the strategy used for the noun complement clause construction is the same as the balanced complement clause construction strategy – namely, syndetic with the complementizer *that*. Of course, that is also a strategy used with English relative clauses (see section 19.2.1). Japanese uses an asyndetic balanced strategy for relative clause constructions and noun complement clause constructions, as seen in (31) and (33). However, Japanese uses a different strategy for balanced complement clause constructions (Comrie 1998b:71):

- (34) [gakusei ga hon o katta] no/koto o sir-ana-katta
student NOM book ACC bought HEAD/thing ACC know-NEG-PST
'[I] didn't know that the student had bought the book.'

The Japanese balanced complement clause construction uses a very general morpheme, either *koto* which can be translated as ‘thing’ or *no*, a word ‘lacking or virtually lacking lexical semantics’ (Comrie 1998b:71), which he glosses as HEAD (see also [26] in section 19.2.3). This very general nominal morpheme is modified by the asyndetic balanced construction observed in (33).

The asyndetic balanced strategy is not only used for a typical relative clause as in (31) and a noun complement clause construction as in (33). It is also used for modifying nouns referring to other entities that are remotely related to the event expressed by the noun complement, though slightly more closely related than just the factivity of the event in (33). Example (35) is from Comrie (1998b:71), and example (36) is from Matsumoto (1997:111):

- (35) [dareka ga doa o tataku] oto
someone NOM door ACC knock sound
'the noise of someone knocking on the door'

- (36) [paatii ni korare-nakatta] syukudai
 party GOAL come-could_not homework
 'the homework [because of having to do which] X couldn't come to the party'

Matsumoto argues that (31), (33), (35) and (36) all involve the evocation of a semantic frame in the sense of Fillmore (1982, 1985), which links together the complement and the head noun (Matsumoto 1997, especially ch. 3). In the prototypical cases of the relative clause function, such as (31), the connection is made by the frame evoked by the complement predicate: the book fills the role of the goods in the buying frame. In prototypical cases of the noun complement function, such as (33), it is the complement clause that fills the proposition role of the propositional attitude frame of the head noun *zizitu* 'fact.' In examples like (35) and (36), the complement and the head noun each evoke peripheral roles filled by the other. For example, knocking evokes a peripheral role of the sound produced by knocking, and a sound evokes the peripheral role of the source of the sound.

Thus, it is plausible to hypothesize that there is no gap in the Japanese relative clause strategy in (31), just as there is assumed to be no gap in (33), (35), or (36). The Japanese construction evokes a semantic frame associated with the relative clause event. That semantic frame may evoke a more central participant, in which case it expresses a relative clause construction as defined here. Or it may evoke a more peripheral entity in the semantic frame, in which case it expresses a noun complement clause construction. From the perspective of Matsumoto's analysis, the distinction between a relative clause construction and a noun complement clause construction is somewhat arbitrary. This is because the Japanese subordinate clause strategy does not make this distinction. Matsumoto et al. (2017) describe the construction that covers both the relative clause and noun complement clause as the 'general noun-modifying clause construction.' For us, it represents the recruitment of the strategy for one of these functions for use in the other function. We will call this recruitment strategy a **noun modifying clause strategy (str)**, and defer to the end of this section a discussion of what the possible historical direction of change is.

Comrie (1998b) argues that the noun modifying clause strategy is found in a number of Eurasian languages; Matsumoto et al. (2017) include chapters that describe several Eurasian languages using this strategy. Comrie, Forker, and Khalilova (2017) describe the noun modifying clause strategy for Hinuq, which uses a deranked Participle form. Examples (37)–(39) illustrate a relative clause function and two examples of the more general noun modifying function (Comrie et al. 2017:125, 134, 135):

- (37) [di essu Ø-ik-o goña] aqili
 me.GEN brother(CL) CLI-see-IPFV.CVB be-PTCP woman
 'the woman who saw my brother'
- (38) [de Ø-ečit-o goyomeru-(ni)] kampit
 me CLI-get_fat-IPFV.CVB be.PTCP.NEG-DEF chocolate
 'the chocolate where I don't get fat'

- (39) [uži: mecxer b-ik'ek-ko goča] xabar
 boy.ERG money(CLIII) CLIII-steal-IPFV.CVB be.PTCP story
 'the news (or story) that the boy stole the money'

Although we have emphasized the shared strategy between the relative clause construction and the noun complement construction, it is also possible for the noun complement construction and the complement clause construction to share a strategy. In English, the syndetic balanced strategy with *that* is used for all three constructions. In Khmer, either the complementizer *thaā* 'say' or the relativizer *dæl* may be used with noun complements (Comrie and Horie 1995:72–73):

- (40) damnəj [thaā qəwpuk baan slap]
 news COMP father PST die
 'the news that father had died'

- (41) riəŋ [dæl ckae kham tidaa]
 story REL dog bite Tidaa
 'the story that the dog had bitten Tidaa'

Matsumoto's frame semantic analysis offers an explanation for the relationship between the relative clause construction, the noun complement construction, and the complement clause construction (see also Langacker 1987:298–310 for a similar theory). There is a continuum depending on whether the dependent clause's event frame strongly evokes a role filled by the head referent – the relative clause construction – or whether the matrix clause's event frame strongly evokes a role filled by the dependent clause event – the complement clause construction. In between, the role(s) evoked by the frame of one or both elements in the construction are more peripheral, and sometimes both elements' frames evoke roles filled by the other element – this is the noun complement construction.

The alert reader may have noticed that, in addition to the *that* noun modifying clause strategy, English also recruits the relative pronoun strategy using *where* for the noun complement construction. Example (42a) illustrates a construction that is usually categorized as a relative clause construction, but applied to a peripheral role – namely, the location of the event. Examples (42b–c) illustrate more of a noun complement construction; (42b) is the translation of the Hinuq example in (38), and (42c) is the translation of a Bezhta example in Comrie et al. (2017:135):

- (42) a. the house [**where** Beethoven was born]
 b. the chocolate [**where** I don't get fat]
 c. cherries [**where** I don't have to wash my hands]

Similar constructions occur in Scottish (and American) English with *that* (Comrie 1999:88, from Miller 1993:112; see also Matsumoto 1989:233):

- (43) I haven't been to a **party** yet [**that** I haven't got home the same night].

These uses of *that* and *where* dependent clauses appear to be instances of the noun modifying clause strategy in English.

Example (43) combines with another word order strategy that is frequently found in languages using the externally headed relative clause strategy. The relative clause is not prenominal or postnominal; instead it is **extraposed (str)** to the end of the sentence, and not adjacent to the external relative clause head. Example (44) is an instance of a prototypical externally headed relative clause construction with an extraposed relative clause (McCawley 1998:104):

- (44) **Anyone** is welcome [**who** wants to come over].

Imbabura Quechua has an externally headed relative clause construction as well as the internally headed relative clause construction illustrated in section 19.2.3. The externally headed construction may be prenominal as in (45), or extraposed as in (46) (Cole 1982:48, 51):

- (45) [wagra-(ta) randi-shka] warmi
cow-ACC buy-NR **woman**
'the woman who bought a cow'

- (46) kwitsa-ta juya-ni [Juan-wan tushu-shka ka-shka-ta]
girl-ACC love-1 Juan-with dance-NR be-NR-ACC
'I love the girl who had danced with Juan.'

In spoken English, there are relative clause constructions using *which* that push the boundaries of the relative clause function in a somewhat different way than the noun modifying construction. A relatively clear noun modifying example is found in (47):

- (47) whenever I run into **someone like that** [**which** Raymond is definitely in
that category] (John M., December 10, 1990)

In (47), the relative clause can be analyzed as either postnominal or extraposed, since the relative clause head is at the end of the matrix clause. A gap strategy is not possible in this example, and a pronominal element *that (category)* is used.

However, attested examples in spoken English are relatively easy to find where it is not always clear what, if anything, in the main clause serves as the "relative clause head," even though the dependent clause introduced by *which* includes a pronominal element referring to a putative "head." Where a relative clause head can be identified, the relative clause is extraposed (suggesting that the relative clause in (47) is extraposed as well).

- (48) They said it would be done by 3:30, [**which** they might have **it** ready earlier]. (Bill C., April 20, 1984)

- (49) Sometimes people buy them and wear them for a couple of weeks and bring them back and say they can't wear them, [**which** **it** does happen some of the time]. (Birkenstock salesperson, San Rafael, California, January 7, 1985)

Examples (47)–(49) are instances of an extraposed externally headed relative clause construction that has been extended (i.e., recruited) to express situations

that look less and less like the relative clause function. Indeed, it seems to resemble a deranked coordinate construction in function. Likewise, the noun complement construction is not the prototypical relative clause function where the referent of the relative clause head fills a role evoked by the semantic frame of the relative clause predicate. It seems plausible that, like the English extraposed *which* strategy, the noun modifying clause strategy originated with the relative clause construction and then was extended to less relative-clause-like situations. The English *where* strategy illustrated in (42b–c) suggests that this is the diachronic scenario in at least some languages.

19.3 The Semantic Role(s) of the Shared Participant and the Accessibility Hierarchy

Some of the examples in section 19.2 show that a single language often has more than one relative clause construction, and the different relative clause constructions often use different strategies. For example, English has relative clause constructions using a deranked – that is, participle – strategy; a construction using a balanced strategy that is asyndetic or syndetic (with *that*); and another balanced strategy using a relative pronoun (*which*, *who*, etc.).

The distribution of different relative clause constructions within and across languages conforms to an implicational hierarchy – one of the earliest and most important typological universals discovered (Keenan and Comrie 1977; the data for this work was published in Keenan and Comrie 1979). The universal governing the distribution of relative clauses is based on the semantic role of the shared participant – the participant denoted by the relative clause head – in the event denoted by the relative clause. Table 19.3 illustrates the distribution of the English relative clause constructions in terms of the semantic role of the shared participant in the relative clause event.

Keenan and Comrie propose the following hierarchy of semantic roles governing the distribution of relative clause constructions, which they called the Accessibility Hierarchy (based on the idea that the semantic role is “accessible” to being the relative clause head):¹

Accessibility Hierarchy:
Subject (A/S) < Object (P) < Indirect Object (G), Oblique < Possessor

The Accessibility Hierarchy is basically the degree of salience of the participant in the relative clause event.

¹ Keenan and Comrie (1977) position Indirect Object higher on the hierarchy than Oblique, and include the standard of comparison (see section 17.2.1) at the lowest level in the hierarchy. However, Comrie (1989:164) omits these two categories due to limited crosslinguistic evidence. We will see below that Cristofaro’s (2003) data on relative clause deranking also groups together Indirect Object and Oblique.

Table 19.3 *Distribution of English relative clause construction strategies based on the semantic role of the shared participant in the relative clause event*

	Deranked	Balanced, Gap	Relative Pm
S (Intransitive subject)	Yes	Yes*	Yes
the boy sleeping on the sofa			
the boy that ran away			
the boy who ran away			
A (Transitive subject)	Yes	Yes*	Yes
the guy playing the flute			
the boy that ate all the cookies			
the guy who's playing the flute			
P (Transitive object)	* Yes	Yes	Yes
the ring found by Bilbo			
the ring (that) Bilbo found			
the ring which Bilbo found			
Indirect Object (G)		Yes	Yes
the student (that) she loaned the book to			
the student who she loaned the book to			
the student to whom she loaned the book			
Oblique		Yes	Yes
the pen (that) I was writing with			
the pen which I was writing with			
the pen with which I was writing			
Possessor			Yes
the boy whose father works in the mines			

* syndetic only

The Accessibility Hierarchy constrains the distribution of relative clause constructions in a number of specific ways. First, any particular relative clause construction, as defined by the strategies presented in sections 19.2.2–19.2.3, must apply to a continuous segment of the Accessibility Hierarchy (Keenan and Comrie 1977:67).² This is a basic fact for any valid typological hierarchy, since the hierarchy defines a 1-dimensional conceptual space (see section 3.5).

Second, all languages have a relative clause construction that allows subjects to be relativized (Keenan and Comrie 1977:67). Keenan and Comrie describe the relative clause construction that relativizes subjects as the 'primary relative clause construction' of the language (Keenan and Comrie 1977:68). An important qualification is how 'subject' is defined across languages. In some languages, relative clause constructions are distinguished by whether they are

² Keenan and Comrie use the term 'strategy' to describe a particular relative clause construction in a language, using a specific strategy roughly classified in the same way as those described in sections 19.2.2–19.2.3. For further discussion of how relative clause constructions and their strategies are defined, see Keenan and Comrie (1977), Maxwell (1979), Comrie and Keenan (1979) and Comrie (1989:147–53).

used with absolute relative clause arguments or ergative relative clause arguments. For example, Dyirbal uses a postnominal externally headed deranked construction for the absolute (S and P) relative clauses, as in (50)–(51). The ergative relative clause construction in (52) uses a special Antipassive verb form in addition to the deranking suffix *-ŋu* found in (50)–(51) (Dixon 1979a:127–8):

- (50) *ŋuma-ŋgu* *yabu-Ø* [dungara-ŋu-Ø] *bura-n*
 father-ERG mother-ABS cry-REL-ABS see-PST
 'Father saw mother, who was crying.' [S argument]
- (51) *ŋuma-Ø* [yabu-ŋgu *bura-ŋu-Ø*] dungara-n'u
 father-ABS mother-ERG see-REL-ABS cry-PST
 'Father, who mother saw, was crying.' [P argument]
- (52) *ŋuma-Ø* [bural-ŋa-ŋu-Ø *yabu-gu*] duŋara-n'u
 father-ABS see-ANTI-REL-ABS mother-DAT cry-PST
 'Father, who saw mother, was crying.' [A argument]

Third, the primary relative clause construction extends down the Accessibility Hierarchy from the left end (subject relativization) and stops at any point on the hierarchy. For example, Welsh has a primary relative clause construction that is used for subjects and objects; it uses a postnominal syndetic gap strategy with the complementizer *a*, as in (53). A secondary relative clause construction is used for roles lower on the hierarchy; this construction uses a postnominal syndetic pronoun retention strategy with the complementizer *y*, as in (54) (Keenan and Comrie 1977:70):

- (53) *y* *bachgen* *a* *oedd* *yn* *darllen*
 the boy REL was on reading
 'the boy who was reading'
- (54) *Dyma* '*r* *llyfr* *y* *darllenais* *y* *stori* *ynddo*
 here.is the book REL I.read the story in.it
 'Here is the book in which I read the story.'

Finally, there is a generalization about the particular types of strategies found in primary and secondary relative clause constructions. This generalization is formulated broadly as follows: 'wherever a language has a more explicit and a less explicit way of forming relative clauses ... then the more explicit type will be used lower down the hierarchy and the less explicit type higher up the hierarchy' (Comrie 1989:163).

Explicitness refers to how explicitly the strategy encodes the semantic role of the shared participant in the event denoted by the relative clause (Comrie 1989:148). This is also described as 'recoverability' (of the semantic role). Comrie (1989) treats explicitness as a matter of degree. The most explicit strategies are those described in section 19.2.3 (apart from the prototypical adjoined relative clause), where the relative clause head is fully expressed internally to

the relative clause, in its usual position, and with the usual flag that would be expected if it were a simple main clause.

The pronoun retention strategy is the next most explicit: the pronoun is typically in its usual position with its usual flag. The hearer need only determine what argument in the matrix clause the pronoun is coreferential with, as in (55) from Modern Hebrew (Keenan 1985:146):

- (55) ha-sarim [she-ha-nasi shalax otam la-mitsraim]
the-ministers REL-the-president sent **them** to-Egypt
 'the ministers that the President sent to Egypt'

The relative pronoun strategy is somewhat less explicit. The relative pronoun typically has the flag expected in the relative clause (but see below); but it is not in the usual position of the argument phrase (it is usually adjacent to the external relative clause head), as in (56) from Russian (Comrie 1989:149):

- (56) devuška, [kotor-uju ja videl]
girl.F.SG REL.PRN-F.SG.ACC I saw
 '[the] girl that I saw'

Finally, the gap strategy is the least explicit. There is no expression of the relative clause head in the relative clause, not even in a pronominal form. The hearer must infer from context what the role of the shared participant is in the relative clause event, as in (57) from Korean (Tagashira 1972:216, as transliterated and glossed by Comrie 1989:151):

- (57) [Hyønsik-i ki kä-lil ttäli-n] maktäki
 Hyensik-NOM the dog-ACC beat-REL stick
 'the stick with which Hyensik beat the dog'

Comrie notes that it is general world knowledge plus the specific context that allows the hearer to infer that the stick's role in (57) is instrument, and that (57) should not be translated 'the stick for which Hyensik beat the dog' or 'the stick behind which Hyensik beat the dog' (Comrie 1989:152).

We may apply Comrie's scale of explicitness or recoverability to the English balanced relative clause constructions in Table 19.3 above. The gap strategy is the least explicit and occurs at the top of the Accessibility Hierarchy (A, S, and P roles). The gap strategy is more explicit for the oblique roles (including the G role), which are lower on the hierarchy, because there is a stranded preposition (*to* and *with* in the examples in the table). But it cannot be used for a possessor, the bottom of the hierarchy. The relative pronoun strategy is less explicit at the top of the hierarchy: *who* and *which* distinguish the shared participant by animacy, not semantic role; the case marked relative pronoun *whom* is hardly used in spoken English. Lower in the hierarchy, the preposition again makes the semantic role more explicit. The relative pronoun strategy is the only one used for possessor, with *whose* flagged as Possessive. Although the relative pronoun strategy is now used for semantic roles across the entire Accessibility Hierarchy,

it originated with possessors and obliques at the bottom of the hierarchy and was extended upward (Romaine 1982:62).

Explicitness is inversely correlated with the Accessibility Hierarchy – that is, with the salience of the participant in the relative clause event. The more salient the participant is in the relative clause event, the less explicit the relative clause strategy needs to be, and vice versa. This is fundamentally a processing explanation for the distribution of relative clause strategies across the Accessibility Hierarchy.

The choice of a deranked vs. balanced relative clause strategy is also governed by the Accessibility Hierarchy. Deranked forms are found at the top end of the hierarchy, and may extend down the hierarchy from there (Lehmann 1986; Cristofaro 2003:203). This fact may also be illustrated by the English examples in Table 19.3. The deranked participles are used only for subject and object at the top of the hierarchy, while the balanced constructions are used further down the hierarchy (even though they also extend to the top of the hierarchy).

In some languages, the only way that certain semantic roles may be relativized is via nonbasic voice forms (see Chapters 8–9). For example, the Luganda primary relative clause construction, with a postnominal gap, is used only with subject and object roles, as in (58). It is possible, however, to relativize an instrument by using the instrumental applicative construction, as in (59) (Keenan 1972:186; cf. Keenan 1985:159):

- (58) omusajja [omukazi gwe-ya-kuba]
 the.man the.woman REL-she-hit
 'the man that the woman hit'
- (59) ekiso [John kye-yatt-is-a enkoko]
 knife John REL-kill-INS.APPL-TNS chicken
 'the knife with which John killed the chicken'

Keenan and Comrie (1977) do not include nonbasic voice constructions as a strategy for relative clause constructions. They argue that a language like Luganda only allows relative clauses to be formed with subjects and objects. Other languages, such as Malagasy, allow relative clauses to be formed only with subjects in this interpretation; but, like Luganda, other semantic roles can be relativized if the predicate is in a nonbasic voice form.

Comrie (2003b) presents numerous languages in which the “voice” markers are used only in relative clauses. For example, Macushi uses three morphemes, Subject Nominalizer, Object Nominalizer, and Instrument Nominalizer, used respectively to relativize subjects, as in (60), objects as in (61), and obliques with different semantic roles as in (62) (Comrie 2003b:13; examples from Abbott 1991:71, 72, 96; POSSN = Possessed Noun):

- (60) to' [era'ma-nenan] wîti'-pi Manaus pona
 3PL.PRN see-S.NR go-PST Manaus to
 'The ones who guarded them went to Manaus.'

- (61) sararu [ti-nyo n-arima-'pi] yanumî-'pi-i-ya
 meat 3.REFL-husband O.NR-send-PST pick_up-PST-3.ERG
 'She picked up the meat that her husband had sent.'
- (62) [u-we'na-to'] pata'-se mîrîrî
 1-sleep-INS.NR place-POSSN that
 'That is the place where I sleep.'

Example (60) uses a pronoun as the relative clause head. We will return to this phenomenon in section 19.4.

Keenan (1972) describes the Luganda and Malagasy examples as instances of a **verb-coding strategy (str)** for relative clause constructions. Keenan and Comrie (1977) exclude this strategy from their analysis. Comrie (2003b) includes only languages like Macushi as instances of the verb-coding strategy because the verb forms in such languages are used only in the relative clause construction. However, the facts of languages like Luganda and Malagasy and languages like Macushi can all be explained in the same way by the scale of explicitness or recoverability.

The Luganda relative clause construction used for subjects and objects is not very explicit, as it uses the gap strategy. When an instrument is relativized in Luganda, there is still a gap, but the construction is more explicit about the semantic role of the instrument due to the instrumental applicative form of the predicate. Likewise, the Macushi Nominalizers are explicit about the semantic role of the relative clause head in the relative clause. In fact, the same analysis applies to the Dyirbal examples in (50)–(52). The relative clause construction for the S and P roles is less explicit, as it also uses the gap strategy. The relative clause construction for the A role also uses the gap strategy, but it is more explicit in that the Antipassive suffix *-ŋa* indicates that the A role is the one that is relativized. For this reason, we will describe all of these constructions as instances of the verb-coding strategy.

There are some unusual cases in which there is unexpected marking of semantic roles in relative clause constructions. In Huallaga Quechua, it is possible for the flag of the external head to express the semantic role of the shared participant in the relative clause (Weber 1983:41–42, cited in Keenan 1985:155; compare Comrie 1989:153–54 for a similar example in Farsi):

- (63) [yaku-man yayku-shan] roopa-wan chakikuykan
 water-GOAL enter-REL clothes-COM they:are:drying
 'The clothes with which he entered the water are drying.'

Although *roopa-wan* 'with the clothes' has the flag expected for its role in the relative clause, the matrix clause predicate indexes *roopa-wan* with a 3rd Person Plural form (Keenan 1985:155). The use of the flag of the relative clause head for its referent's semantic role in the relative clause increases the recoverability of the semantic role.

In Uzbek, the head noun indexes the subject argument of the relative clause event (Sjoberg 1963:141; gloss added):

- (64) [(men-in) oqi-gan] kitōb-im
 (1SG-GEN) read-PTCP book-1SG.POSS
 'that book that I have read'

This construction also partially integrates the external head into the relative clause, but does not clearly increase the recoverability of the semantic role.

In Ancient Greek, the flag of the relative pronoun indicates the shared participant's role in the main clause event, not the relative clause event (Comrie 1989:154):

- (65) ek tōn pōleōn [hōn éxei]
 from the cities:GEN which:GEN he.has
 'from the cities which he has'

This construction somewhat unexpectedly decreases the recoverability of the semantic role of the shared participant in the relative clause event.

In the case of internally headed relative clause constructions, there is a different sort of recoverability problem: which participant in the internally headed relative clause is the relative clause head? In some languages, the construction is ambiguous if more than one participant is a plausible candidate for the relative clause head, as in the Navajo example in (66) (Platero 1974:209, cited in Ohori 1995:92; Ohori also cites Diegueño and Japanese examples):

- (66) ashkii hēéchäq'í yitztal-éé nahal'in
 boy dog 3:PFV:3:kick-REL IPFV:3:barks
 'The dog that the boy kicked is barking.' or
 'The boy that kicked the dog is barking (crying).'

Mesa Grande Diegueño distinguishes the two possibilities grammatically. The internally headed relative clause in (67) has its Object as the relative clause head (Couro and Langdon 1975:187, glossed in Dryer 2013f):

- (67) ['ehatt gaat akewii]=ve=ch chepam
 dog cat chase=DEF=SBJ get_away
 'The cat that the dog chased got away.'

If the Subject is the relative clause head, then a Nominalizing prefix is added to the predicate (Couro and Langdon 1975:186, glossed in Dryer 2013f):

- (68) ['ehatt gaat kw-akewii]=ve=ch nye-chuukuw
 dog cat REL.SBJ-chase=DEF=SBJ 1OBJ-bite
 'The dog that chased the cat bit me.'

We conclude this section with a brief discussion of the externally headed strategy with relative clauses that are themselves complex sentences of different kinds. In these relative clause constructions, there is a shared participant between the relative clause event as a whole and the matrix clause event. However, the shared participant plays a role in an event expressed in a clause

dependent on the relative clause event that modifies the relative clause head. Thus, the shared relationship is less direct than in the relative clause constructions discussed so far.

The comments here are tentative from a crosslinguistic perspective. There are many different types of complex sentences; crosslinguistic surveys of the patterns of distribution are quite limited; and the data is complex and not always easy to interpret. We will focus on one pattern here that appears to have some crosslinguistic support, and place it in the context of a possible explanation for the pattern.

English allows for the relativization of a shared participant from both balanced and deranked complement constructions (Hawkins 1999:263):

- (69) a. Here are **the cucumbers** [which I promised [I would bring]].
 b. Here are **the cucumbers** [which I promised [to bring]].

In Russian, only the translation equivalent of (69b) is grammatical (Comrie 1973b:297, cited in Hawkins 1999:263):

- (70) a. *Vot ogurcy [kotorye ja obeščal [čto prinesu]]
 here.are **cucumber:PL** which:PL I promise:PST COMP bring:1SG
 'Here are the cucumbers which I promised that I would bring.'
 b. Vot ogurcy [kotorye ja obeščal [prinesti]]
 here.are **cucumber:PL** which:PL I promise:PST bring:INF
 'Here are the cucumbers which I promised to bring.'

With respect to these patterns, German is like Russian, while French is like English (Hawkins 1999:263).

On the other hand, English disallows the relativization of a shared participant from an externally headed balanced relative clause or noun complement clause construction (Hawkins 1999:262):

- (71) a. ***a bone** [which I see **a dog** [that is gnawing on]]
 b. ***the student** [that you discussed **the fact** [that the professor taught]]

This restriction was originally observed by Ross (1967), who called it the Complex Noun Phrase Constraint.

However, a number of languages allow relativization in this particular complex relative clause construction, including Swedish (Hawkins 1999:262, from Allwood 1982):

- (72) ett ben [som jag ser en hund [som gnager på]]
 a bone which I see a dog which is.gnawing on
 'a bone which I see a dog that is gnawing on'

Moreover, at least for me, the deranked version of (71a) is acceptable, as in (73):

- (73) a bone which I see a dog gnawing on

It is also true that the nonstandard pronoun retention strategy allows for relativization of externally headed balanced relative clause constructions, for some speakers of English. Example (74) illustrates this phenomenon for a relative clause containing a noun complement clause:

- (74) I see the man [that Sally believes the rumor [that Mary hit him]].

In some languages which use the externally headed pronoun retention strategy more widely, such as Modern Hebrew, relativization from this construction is more generally possible (Keenan 1987:344; cf. Hawkins 1999:265):

- (75) ani roa et ha-iš [še-Sally ma'amina la-šmo'a [še-Miriam
I see OBJ the-man REL-Sally believes the-rumor REL-Mary
hikta oto]]
hit him

'I see the man that Sally believes the rumor that Mary hit him.'

However, the situation varies across languages that use the externally headed pronoun retention strategy. Toba Batak can relativize from a balanced complement clause with the pronoun retention strategy, as in (76), but it cannot relativize from inside an externally headed relative clause using this strategy (Keenan 1972:181–82, cited in Hawkins 1999:266).³

- (76) boruboru i, ima [na dirippu si Bissar [na manussi
woman the namely REL thought by Bissar COMP washes
abit ibana]]
clothes she

'the woman who Bissar thought that she washed the clothes'

How do we interpret these results? In relative clauses that are themselves complex sentences, it is more difficult to relativize from inside an externally headed relative clause than from inside a complement clause. It is also more difficult to relativize from inside a balanced dependent clause than a deranked dependent clause. And it is more difficult to relativize from a less explicit strategy (such as a gapping or a preposed relative pronoun strategy) than from a more explicit strategy (such as the pronoun retention strategy). Hawkins argues for a processing model that measures the complexity of the complex relative clause. This model can be supplemented by a processing model that measures the explicitness of the strategy for expressing the shared participant. Others have argued for an account based in a combination of processing and discourse prominence (Deane 1991; Engdahl 1997). Further exploration of the typological facts about relative clauses that are themselves complex sentences may reveal additional patterns of variation.

³ For a list of languages that do and do not allow relativization from inside an externally headed relative clause construction, see Maxwell (1979:366).

19.4 Anaphoric-Head Relative Clauses and the Origin of Externally Headed Relative Clauses

In all of the examples in the preceding sections, the referring expression that functions as the head modified by the relative clause event is expressed by a noun that denotes an object. There are also constructions in which the head is anaphoric. The semantic type of the pronominal head also varies. We will focus on the **anaphoric-head relative clause construction (cxn)** in this section.

The anaphoric-head relative clause construction corresponds to the anaphoric-head modification constructions described in section 5.4, except that the modifier is an action rather than a property.

- (77) a. She ate the **one(s)** [that/which Jack brought to the potluck].
 b. She ate **that** [which Jack brought to the potluck].

Examples (77a–b) are more or less synonymous, referring to an entity identifiable by the action expressed in the relative clause. Examples (77a–b) illustrate the overtly headed strategy (see section 5.4), where there is a pronominal external head combined with the relative clause.

Andrews gives an undisputed example of a headless strategy for an anaphoric-head relative clause construction, from Navajo (Kaufman 1974:527, cited in Andrews 2007:214):

- (78) [Kinłání-góó deeyáh-ígíí] bééhonisin
 Flagstaff-to 3SG.GO-REL.NPST 3SG.OBJ.IPFV.1SG.SBJ.know
 'I know the person/the one who is going to Flagstaff.'

The construction in (78) consists simply of the relative clause without an external head, and without internal expression of the shared participant either.

A common variant of the headless strategy is to combine the relative clause with a definite article recruited to serve as a relativizer (Keenan 1985:142), as in the K'ichee' example in (79) using the distal article / relativizer form (Mondloch 1978:87):

- (79) utz [le x-u-bij le achi]
 good REL.DIST PAST-3SG.ERG-say.TR ART.DIST man
 'That which/what the man said is good.'

We can compare the K'ichee' headless anaphoric-head relative clause in (79) to the externally headed relative clause from example (3) in section 19.2.1, repeated below as (80):

- (80) utz n̄ nu-tz'í' [n̄ x-Ø-í-sipa-j ch<w>e]
 good ART.INVS 1SG.POSS-dog REL.INVS PF-3SG.ABS-2PL.ERG-give-TR <1SG>to
 'the dog that you gave me is good'

In the K'ichee' externally headed relative clause in (80), both the relative clause head and the relative clause require an initial article; the relative clause can stand alone as in (79); and the externally headed relative clause is simply the juxtaposition of the anaphoric-head relative clause and a relative clause head.

In section 5.4, it was argued that referring expressions arise by the juxtaposition of anaphoric-head modifiers to a noun; see in particular the discussion of Supyire and Mambay in that section. The possible types of relative clauses in Macushi suggest that the same process may lead to the combination of an anaphoric-head relative clause and a noun. Macushi anaphoric-head and externally headed relative clauses are found in examples (60)–(61) from section 19.3, repeated below as (81)–(82):

- (81) to' [era'ma-nenan] wit̄'-pi Manaus pona
 3PL.PRN see-S.NR go-PST Manaus to
 'The ones who guarded them went to Manaus.'

- (82) sararu [ti-nyo n-arima'-pi] yanumî'-pî-i-ya
 meat 3.REFL-husband O.NR-send-PST pick_up-PST-3-ERG
 'She picked up the meat that her husband had sent.'

The anaphoric-head relative clause in (81) uses the overtly headed strategy with the pronoun *to'*. Macushi also uses the headless strategy for an anaphoric-head relative clause (Abbott 1991:93):

- (83) inkamoro [moro' pi' entamo'ka-koi-kon]
 those fish at eat-S.NR-COLL
 'Those are the ones that eat fish.'

It is possible that the externally headed strategy in (82) originated in the concatenation of the headless anaphoric-head relative clause with a noun. The headless relative clause can occur extraposed, with an intonation break between the putative matrix clause with its head and the headless relative clause (Abbott 1991:93):

- (84) in̄'ri pemonkon enna'po'-pi, [pan yenna-nen]
 again person return-PST salt buy-S.NR
 'Again the man returned, the one who buys salt.'

This would be the first step toward integration into an externally headed relative clause construction. The next step would be juxtaposition with the noun, as in (82). Example (85) suggests that this process is being repeated with the overtly headed anaphoric-head relative clause. The overtly headed relative clause with the pronoun *to'* occurs next to the head *surara-yamî* 'soldiers.' Although Abbott translates the example with an appositive, overtly headed anaphoric-head relative clause in English, no intonation break is indicated in the Macushi original (Abbott 1991:71):

- (85) surara-yamî [to' era'ma-nenan] wit̄'-pi Manaus pona
 soldier-PL 3PL.PRN see-S.NR go-PST Manaus to
 'The soldiers, the ones who guarded them, went to Manaus.'

Thus, it is likely that externally headed relative clause constructions arise via the juxtaposition of anaphoric-head relative clauses to a noun, like other modifiers, as argued in section 5.4.

Finally, there are **free relative clauses** (*cxn*), in which the head is ‘indefinite,’ that is, the head expresses one of several so-called ‘indefinite’ functions, in particular specific, irrealis, free-choice, and/or universal functions (see section 3.5). Since indefinite-head relative clauses have been little explored typologically, and the contexts of ambiguity vs. synonymy among these functions are quite complex (see Haiman 1974:342–48), we will not differentiate between these functions here. However, since free relative clauses are recruited for equative constructions, generic conditional constructions, and concessive conditional constructions – discussed in sections 17.2.4, 17.3.1, and 17.3.3, respectively – I will briefly describe them here.

Examples (86) and (87) illustrate English free relatives that recruit an interrogative pronoun⁴ (Haiman 1974:343):

- (86) You have taken [what you liked] (now go!)
 (87) You have taken [whatever you liked] (for years).

Example (86) provides a context for only a specific indefinite interpretation: you have taken something in a specific event. Example (87) is acceptable only in a generic or habitual context, in which case it has a free-choice interpretation: you have taken anything you liked (and *anything you liked* is an example of the overtly headed strategy for free relative clauses).

When a free relative clause construction is in the scope of a construction expressing volition or choice, such as the imperative in (88) or the habitual in (89), then the two English constructions are synonymous (Haiman 1974:343):

- (88) a. Take [what you like]. =
 b. Take [whatever you like].
- (89) a. Hortense will always do [what Max desires]. =
 b. Hortense will always do [whatever Max desires].

Haiman uses this observation to account for the fact that a common strategy for a free-choice head relative clause construction (and, for that matter, the free choice pronoun ‘anyone, etc.’ or quantifier ‘any’) is often based on a verb of choice, as in Latin (Haiman 1974:348):

- (90) ubi [quid-libet tetigerunt], tenent.
 where which-please they_touch they_hold_onto
 'Whatever they touch, they hold onto.'

⁴ The pronoun *what* is not a relative pronoun; if it were, it would be *which*; see McCawley 1998:455–56. Regarding the debate over whether the interrogative pronoun is part of the relative clause, see McCawley (1998:456–57) and Andrews (2007:213–14).

It was noted in section 17.3.3 that alternative and parametric concessive conditional constructions also recruit a verb of volition or choice; when concessive conditional constructions evolve into concessive constructions, the latter also may use a verb of volition (Haiman 1974:348–51; see section 17.4.2); generic conditionals also may recruit a free relative clause construction (section 17.3.1); and equative constructions may also recruit a free relative clause construction (section 17.2.4).

Terms Defined in this Chapter

19.1 The Semantics and Information Packaging of Relative Clause Constructions
relative clause construction (*cxn*), relative clause (*cxn*), relative clause head (*cxn*)

19.2 Strategies for Relative Clause Constructions

19.2.1 Balancing and Deranking

relativizer (*str*), participle (*str*)

19.2.2 Expression of the Shared Participant: The Externally Headed Strategy

externally headed (*str*), postnominal strategy (*str*), prenominal strategy (*str*), gap strategy (*str*), pronoun retention strategy (*str*), relative pronoun strategy (*str*), relative pronoun (*cxn*)

19.2.3 Expression of the Shared Participant: Internally Headed, Adjoined, and Related Strategies

internally headed strategy (*str*), adjoined strategy (*str*), correlative strategy (*str*)

19.2.4 Noun Modifying Clause Constructions as a Relative Clause Strategy

noun complement clause (*cxn*), noun complement constructions (*cxn*), noun modifying clause strategy (*str*), extraposed strategy (*str*)

19.3 The Semantic Role(s) of the Shared Participant and the Accessibility Hierarchy

Accessibility Hierarchy, explicitness, verb-coding strategy (*str*)

19.4 Anaphoric-Head Relative Clauses and the Origin of Externally Headed Relative Clauses

anaphoric-head relative clause construction (*cxn*), free relative clause (*cxn*)

Epilogue

The grammar of a language is not just a list of different constructions or syntactic structures. It is a conventional but systematic means to verbalize our experience for other members of our speech community. Our experience of the world, including the natural world, the world of social and cultural activities and institutions, and the world of our thoughts and emotions – what is called ‘semantics’ in this book – is vast and open-ended.

Our ways to conceptualize and verbalize our experience – what is called ‘information packaging’ here – serve as a means to structure that experience and communicate it to others. The pervasive role of information packaging in structuring the most fundamental grammatical categories and constructions provides a skeleton for understanding grammar, and yields the framework for grammatical constructions defined by their functions that governs the organization of this textbook. Of course, the presentation here is constrained by the linear, hierarchical structure of a book, and the need to explain some concepts in order to understand others. The many cross-references and the glossary attempt to make up for this limitation.

The true heart of language is the incredible diversity of strategies used to express the verbalization of experience in different speech communities around the world. Upon reaching this epilogue, the reader should not think that they have seen all the ways that particular meanings are expressed in languages; I have only touched upon the most common ones. A recurring theme in this book is the historical evolution of constructional strategies: which functions are the source of new constructions, how they are recruited for other functions, and how grammatical change alters them in different ways as they spread through the grammar.

In the Preface, I wrote that sixty years of modern syntactic typology has allowed a textbook like this one to be written. Modern syntactic typology is grounded in the documentation and description of the empirical diversity of grammatical constructions. This empirical grounding means that, if a typological sample is broad enough across genetic language families and geographical areas, the results of the research are lasting, even if their interpretation may change. It also allows for knowledge of crosslinguistic patterns of variation to accumulate through the decades since the publication of Joseph Greenberg’s seminal research on word order universals. This book is by necessity just a summary of our accumulated knowledge of language universals and linguistic diversity. I hope that it reflects how much we have learned about grammar and languages over this time.

References

- Abbott, Miriam. 1991. Macushi. *Handbook of Amazonian Languages*, vol. III, ed. Desmond C. Derbyshire and Geoffrey K. Pullum, 23–160. Berlin: Mouton de Gruyter.
- Abdel-Hafiz, Ahmed Sokarno. 1988. A reference grammar of Kunuz Nubian. Ph.D. dissertation, State University of New York at Buffalo.
- Adams, Karen Lee. 1989. *Systems of Numeral Classification in the Mon-Khmer, Nicobarese and Aslian Subfamilies of Austroasiatic*. (Pacific Linguistics, B101.) Canberra: Research School of Pacific Studies, Australian National University.
- Aikhengvald, Alexandra Y. 2000. *Classifiers: A Typology of Noun Categorization Devices*. Oxford: Oxford University Press.
- Aikhengvald, Alexandra Y. 2010. *Imperatives and Commands*. Oxford: Oxford University Press.
- Aikhengvald, Alexandra Y. 2012. The essence of mirativity. *Linguistic Typology* 16.435–85.
- Aikhengvald, Alexandra Y. 2018. *Serial Verbs*. Oxford: Oxford University Press.
- Aissen, Judith. 1980. Possessor ascension in Tzotzil. *Papers in Mayan Linguistics*, ed. Laura Martin, 89–108. Columbia, Mo.: Lucas Publishers.
- Aissen, Judith. 1983. Indirect object advancement in Tzotzil. *Studies in Relational Grammar*, vol. I, ed. David M. Perlmutter, 272–302. Chicago: University of Chicago Press.
- Akita, Kimi. 2009. A grammar of sound-symbolic words in Japanese: theoretical approaches to iconic and lexical properties of Japanese mimetics. Ph.D. dissertation, Kobe University.
- Allen, Cynthia L. 1997. Investigating the origins of the ‘group genitive’ in English. *Transactions of the Philological Society* 95.111–31.
- Allwood, Jens. 1982. The complex NP constraint in Swedish. *Readings on Unbounded Dependencies in Scandinavian Languages*, ed. Elisabet Engdahl and Eva Ejerhed, 15–32. Stockholm: Almqvist and Wiksell.
- Amberber, Mengistu. 2000. Valency-change and valency-encoding devices in Amharic. *Changing Valency: Case Studies in Transitivity*, ed. R. M. W. Dixon and Alexandra Y. Aikhengvald, 312–32. Cambridge: Cambridge University Press.
- Amberber, Mengistu. 2001. Testing emotional universals in Amharic. *Emotions in Crosslinguistic Perspective*, ed. Jean Harkins and Anna Wierzbicka, 35–67. Berlin: Mouton de Gruyter.
- Amberber, Mengistu. 2009. Quirky alternations of transitivity: the case of ingestive predicates. *The Linguistics of Eating and Drinking*, ed. John Newman, 45–63. Amsterdam: John Benjamins.

- Amha, Azeb. 2001. *The Maale Language*. Leiden: CNWS Publications.
- Andersen, Torben. 1991. Subject and topic in Dinka. *Studies in Language* 15.265–94.
- Anderson, Gregory D. S. 2006. *Auxiliary Verb Constructions*. Oxford: Oxford University Press.
- Anderson, Gregory D. S. 2011a. Auxiliary verb constructions (and other complex predicate types): a functional-constructional overview. *Language and Linguistics Compass* 5(11).795–828.
- Anderson, Gregory D. S. 2011b. Auxiliary verb constructions in the languages of Africa. *Studies in African Linguistics* 40.1–409. Available at <http://elanguage.net/journals/sal/issue/view/350>.
- Anderson, Gregory D. S. 2017. STAMP morphs in the Macro-Sudan Belt. *Diversity in African Languages*, ed. Doris L. Payne, Sara Pacchiarotti, and Mokaya Bosire, 513–39. Berlin: Language Science Press.
- Anderson, Gregory D. S., and Keith David Harrison. 1999. *Tyvan*. Munich: LINCOM Europa.
- Anderson, Lloyd B. 1986. Evidentials, paths of change, and mental maps: typologically regular asymmetries. *Evidentiality: The Linguistic Encoding of Epistemology*, ed. Wallace Chafe and Johanna Nichols, 273–312. Norwood: Ablex.
- Andrews, Avery D. 2007. Relative clauses. *Language Typology and Syntactic Description*, vol. II: *Complex Constructions*, 2nd edition, ed. Timothy Shopen, 206–36. Cambridge: Cambridge University Press.
- Andrews, J. Richard. 1975. *Introduction to Classical Nahuatl*. Austin: University of Texas Press.
- Annamalai, E. 1970. On moving from coordinate structures in Tamil. *Papers from the Sixth Regional Meeting of the Chicago Linguistic Society*, ed. Anon., 131–46. Chicago: Chicago Linguistic Society.
- Anonby, Erik J. 2011. *A Grammar of Mambay, an Adamawa Language of Chad and Cameroon*. Cologne: Rüdiger Köppe Verlag.
- Antunes de Araujo, Gabriel. 2004. *A Grammar of Sabané: A Nambikwaran Language*. Utrecht: LOT.
- Aoki, Haruo. 1970. *Nez Perce Grammar*. Berkeley: University of California Press.
- Ariel, Mira. 1988. Referring and accessibility. *Journal of Linguistics* 24.65–87.
- Ariel, Mira. 1990. *Accessing Noun Phrase Antecedents*. New York: Routledge.
- Aristar, Anthony Rodrigues. 1997. Marking and hierarchy types and the grammaticalization of case-markers. *Studies in Language* 21.313–68.
- Arndt, P. P. 1931. *Grammatik der Sika-Sprache*. Ende, Flores.
- Asher, R. E., and T. C. Kumari. 1997. *Malayalam*. London: Routledge.
- Ashton, E. O. 1947. *Swahili Grammar*, 2nd edition. London: Longmans, Green & Co.
- Aske, Jon. 1989. Path predicates in English and Spanish: a closer look. *Proceedings of the Fifteenth Annual Meeting of the Berkeley Linguistics Society*, ed. Kira Hall, Michael Meacham, and Richard Shapiro, 1–14. Berkeley: Berkeley Linguistics Society.
- Austin, Peter. 1981. Switch-reference in Australia. *Language* 57.309–34.
- Austin, Peter, and Joan Bresnan. 1996. Non-configurationality in Australian Aboriginal languages. *Natural Language and Linguistic Theory* 14.215–68.
- Aze, P. Richard. 1973. Clause patterns in Parengi-Gorum. *Patterns in Clause, Sentence and Discourse in Selected Languages of India and Nepal*, ed. Ronald L. Trail, 235–310. Norman: Summer Institute of Linguistics, University of Oklahoma.

- Ballantyne, Keira Gebbie. 2005. Textual structure and discourse prominence in Yapese narrative. Ph.D. dissertation, University of Hawaii at Honolulu.
- Bamgbose, Ayo. 1966. *A Grammar of Yoruba*. Cambridge: The University Press.
- Bamgbose, Ayo. 1974. On serial verbs and verbal status. *Journal of West African Languages* 9.17–48.
- Barnes, Janet. 1994. Tuyuca. *Typological Studies in Negation*, ed. Peter Kahrel and René van den Berg, 325–42. Amsterdam: John Benjamins.
- Barton, Francis Brown, and Edward Hinman Sirich. 1945. *New French Review Grammar and Composition*. New York: F. S. Crofts & Co.
- Bascom, Burton. 1982. Northern Tepehuan. *Uto-Aztec Grammar Sketches: Studies in Uto-Aztec Grammar* 3, ed. Ronald W. Langacker, 267–393. Norman: Summer Institute of Linguistics, University of Oklahoma.
- Bashir, Elena. 2010. Traces of mirativity in Shina. *Himalayan Linguistics* 9(2).1–55.
- Bauer, Winifred, with William Parker and Te Kareongawai Evans. 1993. *Maori*. London: Routledge.
- Beavers, John. 2011. On affectedness. *Natural Language and Linguistic Theory* 29.335–70.
- Beavers, John, Beth Levin, and Shiao Wei Tham. 2010. The typology of motion expressions revisited. *Journal of Linguistics* 46.331–77.
- Becher, Jutta. 2003. *Experiencer Constructions in Wolof*. (Hamburger Afrikanistische Arbeitspapiere [HAAP], 2.) Hamburg: Universität Hamburg, Institut für Afrikanistik und Äthopistik.
- Behaghel, Otto. 1924. *Deutsche Syntax. Eine geschichtliche Darstellung*, vol. II: *Die Wortklassen und Wortformen*. Heidelberg: Carl Winter's Universitätsbuchhandlung.
- Benveniste, Émile. 1971. The linguistic functions of ‘to be’ and ‘to have’. *Problems in General Linguistics*, trans. Mary Elizabeth Meck, 163–79. Coral Gables, Fl.: University of Miami Press, 1972.
- Berger, Hermann. 1998. *Die Burushaski-Sprache von Hunza und Nager, Teil I: Grammatik*. Wiesbaden: Harrassowitz.
- Berlin, Brent. 1968. *Tzeltal Numeral Classifiers: A Study in Ethnographic Semantics*. The Hague: Mouton.
- Beyer, Stephan V. 1992. *The Classical Tibetan Language*. Albany: State University of New York Press.
- Bhat, D. N. S. 2005. Third-person pronouns and demonstratives. *World Atlas of Language Structures*, ed. Martin Haspelmath, Matthew Dryer, David Gil, and Bernard Comrie, 178–79. Oxford: Oxford University Press.
- Bickel, Balthasar. 1998. Review of *Converbs in Crosslinguistic Perspective*, ed. Martin Haspelmath and Ekkehard König. *Linguistic Typology* 2.381–97.
- Bickel, Balthasar. 1999. From *ergativus absolutus* to topic marking in the Kiranti: a typological perspective. *Proceedings of the Twenty-fifth Annual Meeting of the Berkeley Linguistics Society*, ed. Steve S. Chang, Lily Liaw, and Josef Ruppenhofer, 38–49. Berkeley: Berkeley Linguistics Society.
- Bickel, Balthasar, Kristine A. Hildebrandt, and René Schierung. 2009. The distribution of phonological word domains: a probabilistic typology. *Phonological Domains: Universals and Deviations*, ed. Barış Kabak and Janet Grijzenhout, 47–75. Berlin: Mouton de Gruyter.

- Biligiri, H. S. 1965. *Kharia Phonology, Grammar and Vocabulary*. (Building Centenary and Silver Jubilee Series, 3). Poona: Deccan College Postgraduate and Research Institute.
- Bird, Charles S. 1968. Relative clauses in Bambara. *Journal of West African Languages* 5.35–47.
- Birner, Betty J., and Gregory Ward. 1998. *Information Status and Noncanonical Word Order in English*. Amsterdam: John Benjamins.
- Bisang, Walter. 1995. Verb serialization and converbs – differences and similarities. *Converbs in Cross-Linguistic Perspective: Structure and Meaning of Adverbial Verb Forms – Adverbials, Participles, Gerunds*, ed. Ekkehard König and Martin Haspelmath, 137–88. Berlin: Mouton de Gruyter.
- Blackings, Mairi, and Nigel Fabb. 2003. *A Grammar of Ma'di*. (Mouton Grammar Library, 32.) Berlin: Mouton de Gruyter.
- Blasi, Damián E. 2015. Assessing transitivity prominence from a statistical perspective: a commentary on Martin Haspelmath's 'Transitivity prominence.' *Valency Classes in the World's Languages*, ed. Andrej L. Malchukov and Bernard Comrie, 149–53. Berlin: Mouton de Gruyter.
- Bloomfield, Leonard. 1962. *The Menomini Language*. New Haven: Yale University Press.
- Blume, Kerstin. 1998. A contrastive analysis of interaction verbs with dative complements. *Linguistics* 36.253–80.
- Boas, Franz, and Ella Deloria. 1941. *Dakota Grammar*. (Memoirs of the National Academy of Sciences, vol. 23, no. 2.) Washington, D.C.: US Government Printing Office.
- Bogdanov, V. N. 1968. Osobyj slučaj dialektного soglasovanija skazuemogo s podležaščim po smyslu i kategorija predstivatel'nosti. *Naučnye doklady vysšej školy: filologičeskie nauki* 4.68–75.
- Bogoras, Waldemar. 1922. Chukchee. *Handbook of American Indian Languages, Part 2* (Bureau of American Ethnology Bulletin, 40), ed. Franz Boas, 631–903. Washington, D.C.: Government Printing Office.
- Bohnemeyer, Jürgen, Nicholas J. Enfield, James Essegbe, Iraide Ibarretxe-Antuñano, Sotaro Kita, Friederike Lüpke, and Felix K. Ameka. 2007. Principles of event segmentation: the case of motion events. *Language* 83.495–532.
- Böhtingk, Otto von. 1964. *Über die Sprache der Jakuten*. The Hague: Mouton. (Reprint of 1854 edition.)
- Bokamba, Eyamba G. 1985. Verbal agreement as a noncyclic rule in Bantu. *African Linguistics: Essays in Memory of M. W. K. Semikenke* (Studies in the Sciences of Languages), ed. Didier L. Goyvaerts, 9–54. Amsterdam: John Benjamins.
- Bolinger, Dwight. 1977. Another glance at main clause phenomena. *Language* 53.511–19.
- Bolinger, Dwight. 1978. Yes–no questions are not alternative questions. *Questions*, ed. Henry Hiz, 87–105. Dordrecht: Reidel.
- Bolkestein, Machtelt. 1983. Genitive and dative possessors in Latin. *Advances in Functional Grammar*, ed. Simon Dik, 55–91. Dordrecht: Foris.
- Bond, Oliver, and Gregory D. S. Anderson. 2014. Aspectual and focal functions of cognate head-dependent constructions: evidence from Africa. *Linguistic Typology* 18.215–50.
- Borg, Albert J. 1987–88. To be or not to be a copula in Maltese. *Journal of Maltese Linguistics* 17–18.54–71.

- Borg, Albert J., and Bernard Comrie. 1984. Object diffuseness in Maltese. *Objects*, ed. Frans Plank, 109–26. New York: Academic Press.
- Borgman, Donald M. 1990. Sanuma. *Handbook of Amazonian Languages*, vol. II, ed. Desmond C. Derbyshire and Geoffrey K. Pullum, 15–248. Berlin: Mouton de Gruyter.
- Bostoen, Koen, Sébastien Dom, and Guillaume Segerer. 2015. The antipassive in Bantu. *Linguistics* 53.731–72.
- Bradshaw, Joel, and Francisc Czobor. 2005. *Otto Dempwolff's Grammar of the Jabêm language in New Guinea*. (Oceanic Linguistics Special Publications, 32.) Honolulu: University of Hawaii Press.
- Bricker, Victoria. 1978. Antipassive constructions in Yucatec Maya. *Papers in Mayan Linguistics*, ed. Nora England, 3–24. Columbia: University of Missouri.
- Brinton, Laurel J., and Elizabeth Closs Traugott. 2005. *Lexicalization and Language Change*. Cambridge: Cambridge University Press.
- Brown, Penelope, and Stephen C. Levinson. 1987. *Politeness*. Cambridge: Cambridge University Press. (Originally published as ‘Universals of language usage: politeness phenomena.’ *Questions and Politeness: Strategies in Social Interaction*, ed. Esther N. Goody, 56–311. Cambridge: Cambridge University Press, 1978.)
- Bruce, Les. 1988. Serialization: from syntax to lexicon. *Studies in Language* 12.19–49.
- Burling, Robbins. 1961. *A Garo Grammar*. (Deccan College Monograph Series, 25.) Poona: Deccan College Postgraduate and Research Institute.
- Butt, John, and Carmen Benjamin. 2004. *A New Reference Grammar of Modern Spanish*, 4th edition. New York: McGraw Hill.
- Bybee, Joan L. 1985. *Morphology: A Study into the Relation between Meaning and Form*. Amsterdam: John Benjamins.
- Bybee, Joan L., Revere D. Perkins, and William Pagliucca. 1994. *The Evolution of Grammar: Tense, Aspect and Modality in the Languages of the World*. Chicago: University of Chicago Press.
- Campbell, Lyle. 1985. *The Pipil Language of El Salvador*. Berlin: Mouton de Gruyter.
- Carlson, Robert Joel. 1994. *A Grammar of Supyire*. (Mouton Grammar Library, 15.) Berlin: Mouton de Gruyter.
- Carnie, Andrew. 2013. *Syntax: A Generative Introduction*, 3rd edition. Chichester: Wiley-Blackwell.
- Chafe, Wallace. 1974. Language and consciousness. *Language* 50.111–33.
- Chafe, Wallace. 1976. Givenness, contrastiveness, definiteness, subjects, topics and points of view. *Subject and Topic*, ed. Charles Li, 25–56. New York: Academic Press.
- Chafe, Wallace. 1977. The recall and verbalization of past experience. *Current Issues in Linguistic Theory*, ed. Peter Cole, 215–46. Bloomington: Indiana University Press.
- Chafe, Wallace (ed.). 1980. *The Pear Stories*. New York: Ablex.
- Chafe, Wallace. 1987. Cognitive constraints on information flow. *Coherence and Grounding in Discourse*, ed. Russell Tomlin, 21–52. Amsterdam: John Benjamins.
- Chappell, Hilary, and Denis Creissels. 2019. Topicality and the typology of predicative possession. *Linguistic Typology* 23.467–532.
- Chappell, Hilary, and William McGregor. 1989. Alienability, inalienability and nominal classification. *Proceedings of the Fifteenth Annual Meeting of the Berkeley Linguistics Society*, ed. Kira Hall, Michael Meacham, and Richard Shapiro, 24–36. Berkeley: Berkeley Linguistics Society.

- Chappell, Hilary, and William McGregor (eds.). 1995. *The Grammar of Inalienability: A Typological Perspective on Body Part Terms and the Part–Whole Relation*. Berlin: Mouton de Gruyter.
- Charney, Jean Ormsbee. 1993. *A Grammar of the Comanche Language*. Lincoln: University of Nebraska Press.
- Chavula, Jean Josephine. 2016. *Verbal Derivation and Valency in Citumbuka*. (Ph.D. dissertation, University of Leiden.) Utrecht: LOT Publications.
- Chen, Ping. 1996. Pragmatic interpretation of structural topics in Chinese. *Journal of Pragmatics* 26.389–406.
- Childs, G. Tucker. 1995. *A Grammar of Kisi*. Berlin: Mouton de Gruyter.
- Churchward, C. Maxwell 1940. *Rotuman Grammar and Dictionary*. Sydney: Australian Medical Publishing Company.
- Cinque, Guglielmo. 1988. On Si-constructions and the theory of arb. *Linguistic Inquiry* 19.521–81.
- Clark, Eve V. 1978. Existentials, locatives and possessives. *Universals of Human Language*, vol. IV: *Syntax*, ed. Joseph H. Greenberg, Charles A. Ferguson, and Edith A. Moravcsik, 85–126. Stanford: Stanford University Press.
- Clark, Herbert H. 1996. *Using Language*. Cambridge: Cambridge University Press.
- Clark, Herbert H., and E. F. Schaefer. 1989. Contributing to discourse. *Cognitive Science* 13.259–94.
- Claudi, Ulrike, and Bernd Heine. 1989. On the nominal morphology of ‘alienability’ in some African languages. *Current Approaches to African Linguistics*, vol. V, ed. Paul Newman and Robert D. Botne, 3–19. Dordrecht: Foris.
- Clausner, Timothy C. 1991. Sentence types and salience. *University of Michigan Working Papers in Linguistics*, ed. William Croft, 1–11. Ann Arbor: Department of Linguistics, University of Michigan.
- Clements, George N. 1975. The logophoric pronoun in Ewe: its role in discourse. *Journal of West African Languages* 2.141–77.
- Cohen, Kevin Bretonnel. 2000. *Aspects of the Grammar of Kukù*. Munich: LINCOM Europa.
- Cole, Peter. 1982. *Imbabura Quechua*. (Lingua Descriptive Studies, 5.) Amsterdam: North-Holland.
- Cole, Peter. 1983. The grammatical role of the causee in universal grammar. *International Journal of American Linguistics* 49.115–33.
- Cole, Peter. 1984. Clause reduction in Ancash Quechua. *The Syntax of Native American Languages* (Syntax and Semantics, 16), ed. Eung-Do Cook and Donna B. Gerdts, 105–21. New York: Academic Press.
- Cole, Peter, Wayne Harbert, Gabriella Hermon, and S. N. Sridhar. 1980. The acquisition of subjecthood. *Language* 56.719–43.
- Cole, Peter, Gabriella Hermon, and C.-T. James Huang. 2001. Introduction. *Long-Distance Reflexives* (Syntax and Semantics, 33), ed. Peter Cole, Gabriella Hermon, and C.-T. James Huang, xiii–xlvii. New York: Academic Press.
- Collinder, Björn. 1957. *Survey of the Uralic Languages*. Stockholm: Almqvist & Wiksell.
- Collins, B. 1962. *Tonga Grammar*. London: Longmans, Green & Co.
- Comrie, Bernard. 1973a. The ergative: variations on a theme. *Lingua* 32.239–53.
- Comrie, Bernard. 1973b. Clause structure and movement constraints in Russian. *You Take the High Node and I'll Take the Low Node: Papers from the Comparative*

- Syntax Festival, ed. Claudia Corum, T. Cedric Smith-Stark, and Ann Weiser, 291–304. Chicago: Chicago Linguistic Society.
- Comrie, Bernard. 1976. *Aspect*. Cambridge: Cambridge University Press.
- Comrie, Bernard. 1977. In defense of spontaneous demotion: the impersonal passive. *Grammatical Relations* (Syntax and Semantics, 8), ed. Peter Cole and Jerry M. Sadock, 47–58. New York: Academic Press.
- Comrie, Bernard. 1979. Definite and animate objects: a natural class. *Linguistica Silesiana* 3.13–21.
- Comrie, Bernard. 1982a. Grammatical relations in Huichol. *Studies in Transitivity* (Syntax and Semantics, 15), ed. Paul Hopper and Sandra Thompson, 95–115. New York: Academic Press.
- Comrie, Bernard. 1982b. Future time reference in the conditional protasis. *Australian Journal of Linguistics* 2.143–52.
- Comrie, Bernard. 1983. Switch-reference in Huichol: a typological study. *Switch-reference and Universal Grammar*, ed. John Haiman and Pamela Munro, 17–37. Amsterdam: John Benjamins.
- Comrie, Bernard. 1986a. Markedness, grammar, people and the world. *Markedness*, ed. Fred R. Eckman, Edith A. Moravcsik, and Jessica R. Wirth, 85–196. New York: Plenum Press.
- Comrie, Bernard. 1986b. Conditionals: a typology. *On Conditionals*, ed. Elizabeth Closs Traugott, Alice ter Meulen, Judy Snitzer Reilly, and Charles A. Ferguson, 77–99. Cambridge: Cambridge University Press.
- Comrie, Bernard. 1989. *Language Universals and Linguistic Typology*, 2nd edition. Chicago: University of Chicago Press.
- Comrie, Bernard. 1998a. Switch reference in Haruai: grammar and discourse. *Productivity and Creativity: Studies in General and Descriptive Linguistics in Honor of E. M. Uhlenbeck*, ed. Jark Janse and An Verlinden, 421–32. Berlin: Mouton de Gruyter.
- Comrie, Bernard. 1998b. Rethinking the typology of relative clauses. *Language Design* 1.59–86.
- Comrie, Bernard. 1999. Relative clauses: structure and typology on the periphery of standard English. *The Clause in English: In Honour of Rodney Huddleston*, ed. Peter Collins and David Lee, 81–91. Amsterdam: John Benjamins.
- Comrie, Bernard. 2003a. On explaining language universals. *The New Psychology of Language: Cognitive and Functional Approaches to Language Structure*, vol. II, ed. Michael Tomasello, 195–209. Mahwah, N.J.: Lawrence Erlbaum Associates.
- Comrie, Bernard. 2003b. The verb-marking relative clause strategy, with special reference to Austronesian languages. *Linguistik Indonesia* 21.1–18.
- Comrie, Bernard. 2004. West African logophorics and the typology of reference-tracking. *Journal of West African Languages* 30.41–52.
- Comrie, Bernard. 2011. Action nominals between verbs and nouns. *Rivista di Linguistica* 23.7–20.
- Comrie, Bernard. 2013a. Alignment of case marking of full noun phrases. *The World Atlas of Language Structures Online*, ed. Matthew S. Dryer and Martin Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology. Available at <http://wals.info/chapter/98>, accessed March 12, 2017.
- Comrie, Bernard. 2013b. Alignment of case marking of pronouns. *The World Atlas of Language Structures Online*, ed. Matthew S. Dryer and Martin Haspelmath.

- Leipzig: Max Planck Institute for Evolutionary Anthropology. Available at <http://wals.info/chapter/99>, accessed March 12, 2017.
- Comrie, Bernard, Diana Forker, and Zaira Khalilova. 2017. General noun-modifying clause constructions in Hinuq and Bezhta, with a note on other Daghestanian languages. *Noun-Modifying Clause Constructions in Languages of Eurasia: Rethinking Theoretical and Geographical Boundaries*, ed. Yoshiiko Matsumoto, Bernard Comrie, and Peter Sells, 121–46. Amsterdam: John Benjamins.
- Comrie, Bernard, Martin Haspelmath, and Andrej Malchukov. 2010. Questionnaire on ditransitive constructions. *Studies in Ditransitive Constructions: A Comparative Handbook*, ed. Andrej Malchukov, Martin Haspelmath, and Bernard Comrie, 65–73. Berlin: Mouton de Gruyter.
- Comrie, Bernard, and Kaoru Horie. 1995. Complement clauses versus relative clauses: some Khmer evidence. *Discourse Grammar and Typology: Papers in Honor of John W. M. Verhaar*, ed. Werner Abraham, T. Givón, and Sandra A. Thompson, 65–75. Amsterdam: John Benjamins.
- Comrie, Bernard, and Edward Keenan. 1979. Noun phrase accessibility revisited. *Language* 55.649–64.
- Cooreman, Ann. 1987. *Transitivity and Discourse Continuity in Chamorro Narratives*. Berlin: Mouton de Gruyter.
- Cooreman, Ann. 1988. The antipassive in Chamorro: variations on the theme of transitivity. *Passive and Voice*, ed. Masayoshi Shibatani, 561–94. Amsterdam: John Benjamins.
- Cooreman, Ann. 1994. A functional typology of antipassives. *Voice: Form and Function*, ed. Barbara Fox and Paul Hopper, 49–88. Amsterdam: John Benjamins.
- Corbett, Greville G. 1978. Numerous squishes and squishy numerals in Slavic. *Classification of Grammatical Categories* (Current Inquiry into Language and Linguistics, 21), ed. Bernard Comrie, 43–73. Edmonton: Linguistic Research, Inc.
- Corbett, Greville G. 1979. The agreement hierarchy. *Journal of Linguistics* 15.203–24.
- Corbett, Greville G. 1983. *Hierarchies, Targets and Controllers: Agreement Patterns in Slavic*. University Park: Pennsylvania State University Press.
- Corbett, Greville G. 1991. *Gender*. Cambridge: Cambridge University Press.
- Corbett, Greville G. 2000. *Number*. Cambridge: Cambridge University Press.
- Corbett, Greville G. 2006. *Agreement*. Cambridge: Cambridge University Press.
- Cornish, Frances. 1996. ‘Antecedentless’ anaphors: deixis, anaphora, or what? Some evidence from English and French. *Journal of Linguistics* 32.19–41.
- Courto, Ted, and Margaret Langdon. 1975. *Let's Talk 'Iipay Aa: An Introduction to the Mesa Grande Diegueño Language*. Ramona, Calif.: Ballena Press.
- Cowell, Andrew, with Alonzo Moss Sr. 2008. *The Arapaho Language*. Boulder: University Press of Colorado.
- Cowell, Mark 1964. *A Reference Grammar of Syrian Arabic*. Washington, D.C.: Georgetown University Press.
- Craig, Colette Grinevald. 1977. *The Structure of Jacalteco*. Austin: University of Texas Press.
- Craig, Colette Grinevald, and Kenneth Hale. 1988. Relational preverbs in some languages of the Americas: typological and historical perspectives. *Language* 64.312–44.
- Creissels, Denis. 2017. Copulas originating from the imperative of ‘see/look’ verbs in Mande languages. *Unity and Diversity in Grammaticalization Scenarios*, ed. Walter Bisang and Andrej Malchukov, 45–66. Berlin: Language Science Press.
- Creissels, Denis. 2019. Inverse-location predication in typological perspective. *Italian Journal of Linguistics* 31.37–16.

- Cristofaro, Sonia. 2003. *Subordination*. Oxford: Oxford University Press.
- Cristofaro, Sonia. 2007. Deconstructing categories: finiteness in a functional-typological perspective. *Finiteness*, ed. Irina Nikolaeva, 91–114. Oxford: Oxford University Press.
- Croft, William. 1985. Indirect object ‘lowering.’ *Proceedings of the Eleventh Annual Meeting of the Berkeley Linguistics Society*, ed. Mary Nipokuj et al., 39–51. Berkeley: Berkeley Linguistics Society.
- Croft, William. 1988. Agreement vs. case marking and direct objects. *Agreement in Natural Language: Approaches, Theories, Descriptions*, ed. Michael Barlow and Charles A. Ferguson, 159–80. Stanford: Center for the Study of Language and Information.
- Croft, William. 1990a. *Typology and Universals*. Cambridge: Cambridge University Press.
- Croft, William. 1990b. A conceptual framework for grammatical categories (or, a taxonomy of propositional acts). *Journal of Semantics* 7.245–79.
- Croft, William. 1990c. Possible verbs and event structure. *Meanings and Prototypes: Studies on Linguistic Categorization*, ed. S. L. Tsohatzidis, 48–73. London: Routledge.
- Croft, William. 1991a. *Syntactic Categories and Grammatical Relations: The Cognitive Organization of Information*. Chicago: University of Chicago Press.
- Croft, William. 1991b. The evolution of negation. *Journal of Linguistics* 27.1–27.
- Croft, William. 1993. Case marking and the semantics of mental verbs. *Semantics and the Lexicon*, ed. James Pustejovsky, 55–72. Dordrecht: Kluwer Academic.
- Croft, William. 1994a. Semantic universals in classifier systems. *Word* 45.145–71.
- Croft, William. 1994b. Sentence typology and the taxonomy of speech acts. *Foundations of Speech Act Theory*, ed. Savas L. Tsohatzidis, 460–77. London: Routledge.
- Croft, William. 1995. Intonation units and grammatical structure. *Linguistics* 33.839–82.
- Croft, William. 1998. Event structure in argument linking. *The Projection of Arguments: Lexical and Compositional Factors*, ed. Miriam Butt and Wilhelm Geuder, 1–43. Stanford: Center for the Study of Language and Information.
- Croft, William. 2001. *Radical Construction Grammar: Syntactic Theory in Typological Perspective*. Oxford: Oxford University Press.
- Croft, William. 2003. *Typology and Universals*, 2nd edition. Cambridge: Cambridge University Press.
- Croft, William. 2006. A Radical Construction Grammar analysis of noun phrase structure. Invited plenary speaker, High Desert Linguistic Society, University of New Mexico, Albuquerque, New Mexico.
- Croft, William. 2007a. The origins of grammar in the verbalization of experience. *Cognitive Linguistics* 18.339–82.
- Croft, William. 2007b. Intonation units and grammatical structure in Wardaman and in crosslinguistic perspective. *Australian Journal of Linguistics* 27.1–39.
- Croft, William. 2008. On iconicity of distance. *Cognitive Linguistics* 19.49–57.
- Croft, William. 2009. A typological asymmetry in noun phrase structure. Invited plenary speaker, Workshop on Noun Phrase Structure, University of Vigo, Vigo, Spain.
- Croft, William. 2010. The origins of grammaticalization in the verbalization of experience. *Linguistics* 48.1–48.

- Croft, William. 2012. *Verbs: Aspect and Causal Structure*. Oxford: Oxford University Press.
- Croft, William. 2013. Agreement as anaphora, anaphora as coreference. *Languages across Boundaries: Studies in Memory of Anna Siewierska*, ed. Dik Bakker and Martin Haspelmath, 107–29. Berlin: Mouton de Gruyter.
- Croft, William. 2014. Comparing categories and constructions crosslinguistically (again): the diversity of ditransitives [Review article on Studies in *Ditransitive Constructions: A Comparative Handbook*, ed. Andrej Malchukov, Martin Haspelmath, and Bernard Comrie]. *Linguistic Typology* 18.533–51.
- Croft, William. 2016a. Comparative concepts and language-specific categories: theory and practice. *Linguistic Typology* 20.377–93.
- Croft, William. 2016b. Typology and the future of Cognitive Linguistics. *Cognitive Linguistics* 27.587–602.
- Croft, William. 2017. Using typology to develop guidelines for Universal Dependencies. Invited talk, Workshop on Universal Dependencies, Gothenburg, Sweden. Available at www.universaldependencies.org/udw17/invited_talk_2.pdf, accessed August 8, 2017.
- Croft, William. 2019. Comparative concepts and practicing typology: on Haspelmath's proposal for 'flagging' and '(person) indexing.' *Te Reo* 62.116–29.
- Croft, William, Jóhanna Barðdal, Willem Hollmann, Violeta Sotirova, and Chiaki Taoka. 2010. Revising Talmy's typological classification of complex event constructions. *Contrastive Construction Grammar*, ed. Hans Boas, 201–35. Amsterdam: John Benjamins.
- Croft, William, and D. Alan Cruse. 2004. *Cognitive Linguistics*. Cambridge: Cambridge University Press.
- Croft, William, Dawn Nordquist, Katherine Looney, and Michael Regan. 2017. Linguistic typology meets universal dependencies. *Proceedings of the 15th International Workshop on Treebanks and Linguistic Theories (TLT15)*, ed. Markus Dickinson, Jan Hajič, Sandra Kübler, and Adam Przepiórkowski, 63–75. CEUR Workshop Proceedings. Available at [CEUR-WS.org/Vol-1779](http://ceur-ws.org/Vol-1779).
- Croft, William, and Keith T. Poole. 2008. Inferring universals from grammatical variation: multidimensional scaling for typological analysis. *Theoretical Linguistics* 34.1–37.
- Croft, William, Hava Bat-Zeev Shyldkrot, and Suzanne Kemmer. 1987. Diachronic semantic processes in the middle voice. *Papers from the 7th International Conference on Historical Linguistics*, ed. Anna Giacalone Ramat, Onofrio Carruba, and Giuliano Bernini, 179–92. Amsterdam: John Benjamins.
- Croft, William, and Meagan Vigus. 2020. Event causation and force dynamics in argument structure constructions. *Perspectives on Causation*, ed. Elitzur Bar-Asher Siegal and Nora Boneh, 151–83. Berlin: Springer.
- Crowley, Terry. 1982. *The Paamese Language of Vanuatu*. (Pacific Linguistics, B87.) Canberra: Research School of Pacific Studies, Australian National University.
- Crowley, Terry. 1987. Serial verbs in Paamese. *Studies in Language* 11.35–84.
- Crowley, Terry. 1995. Inalienable possession in Paamese grammar. *The Grammar of Inalienability: A Typological Perspective on Body Part Terms and the Part-Whole Relation*, ed. Hilary Chappell and William McGregor, 383–432. Berlin: Mouton de Gruyter.

- Crowley, Terry. 1998. *An Errromangan (Sye) Grammar*. Honolulu: University of Hawaii Press.
- Crowley, Terry. 2002. *Serial Verbs in Oceanic: A Descriptive Typology*. Oxford: Oxford University Press.
- Cruse, D. Alan, and Pagona Togia. 1995. Towards a cognitive model of antonymy. *Lexicology* 1:113–41.
- Culy, Christopher. 1994. Aspects of logophoric marking. *Linguistics* 32.1055–94.
- Culy, Christopher. 1997. Logophoric pronouns and point of view. *Linguistics* 35.845–59.
- Cyffer, Norbert. 1974. *Syntax des Kanuri, Dialekt von Yerwa (Maiduguri)*. Hamburg: Helmut Buske.
- Cysouw, Michael. 2003. *The Paradigmatic Structure of Person Marking*. Oxford: Oxford University Press.
- Dahl, Östen. 1979. Typology of sentence negation. *Linguistics* 17.79–106.
- Dahl, Östen. 1985. *Tense and Aspect Systems*. Oxford: Basil Blackwell.
- Dahl, Östen, and Maria Koptjevskaja-Tamm. 1998. Alienability splits and the grammaticalization of possessive constructions. *Papers from the XVIth Scandinavian Conference of Linguistics* (Publications of the Department of Finnish and General Linguistics of the University of Turku, 60), ed. Timo Haukioja, 38–49. Turku: University of Turku and Åbo Akademi.
- Dahl, Östen, and Maria Koptjevskaja-Tamm. 2001. Kinship in grammar. *Dimensions of Possession*, ed. Irène Baron, Michael Herslund, Michael Sørensen, and Finn Sørensen, 201–25. Amsterdam: John Benjamins.
- Dalrymple, Mary, Makoto Kanazawa, Yookyoung Kim, Sam Mchombo, and Stanley Peters. 1998. Reciprocal expressions and the concept of reciprocity. *Linguistics and Philosophy* 21.159–210.
- Davies, John. 1981. *Kobon*. (Lingua Descriptive Series, 3.) Amsterdam: North-Holland.
- Dayley, Jon P. 1989. *Tzutujil Reference Grammar*. (University of California Publications in Linguistics, 107.) Berkeley and Los Angeles: University of California Press.
- Deane, Paul. 1991. Limits to attention: a cognitive theory of island phenomena. *Cognitive Linguistics* 2.1–63.
- DeLancey, Scott. 1981. An interpretation of split ergativity and related patterns. *Language* 57.626–57.
- DeLancey, Scott. 1982. Aspect, transitivity and viewpoint. *Tense–Aspect: Between Semantics and Pragmatics*, ed. Paul Hopper, 167–84. Amsterdam: John Benjamins.
- DeLancey, Scott. 1984. Notes on agentivity and causation. *Studies in Language* 8.181–214.
- DeLancey, Scott. 1997. Mirativity: the grammatical marking on unexpected information. *Linguistic Typology* 1.33–52.
- de Marneffe, Marie-Catherine, Christopher D. Manning, Joakim Nivre, and Daniel Zeman. 2021. Universal dependencies. *Computational Linguistics* 47.255–308.
- Denison, David. 1993. *English Historical Syntax*. London: Longman.
- Denison, David, and Alison Cort. 2010. *Better as a Verb: Subjectification, Intersubjectification and Grammaticalization*, ed. Kristin Davidse, Lieven Vandelanotte, and Hubert Cuyckens, 349–83. Berlin: Mouton de Gruyter.
- Derbyshire, Desmond C. 1979. *Hixkaryana*. (Lingua Descriptive Studies, 1.) Amsterdam: North-Holland.

- de Vries, Lourens. 1993. *Forms and Functions in Kombai, an Awyu Language of Irian Jaya*. (Pacific Linguistics, B108.) Canberra: Research School of Pacific Studies, Australian National University.
- Diessel, Holger. 1999. *Demonstratives: Form, Function and Grammaticalization*. (Typological Studies in Language, 42.) Amsterdam: John Benjamins.
- Dik, Simon C. 1997. *The Theory of Functional Grammar, Part 1: The Structure of the Clause*, 2nd rev. edition, ed. Kees Hengeveld. Berlin: Mouton de Gruyter.
- Dimmendaal, Gerrit Jan. 1983. *The Turkana Language*. Dordrecht: Foris.
- Dingemanse, Mark. 2011. The meaning and use of ideophones in Siwu. Ph.D. dissertation, Radboud Universiteit Nijmegen.
- Dingemanse, Mark. 2012. Advances in the cross-linguistic study of ideophones. *Language and Linguistics Compass* 6.654–72.
- Dixon, R. M. W. 1968. Noun classes. *Lingua* 21:104–25.
- Dixon, R. M. W. 1972. *The Dyirbal Language of North Queensland*. Cambridge: Cambridge University Press.
- Dixon, R. M. W. 1977. Where have all the adjectives gone? *Studies in Language* 1.19–80.
- Dixon, R. M. W. 1979a. Ergativity. *Language* 55.59–138.
- Dixon, R. M. W. 1979b. Corrections and comments concerning Heath's 'Is Dyirbal ergative?' *Linguistics* 17.1003–15.
- Dixon, R. M. W. 1988. *A Grammar of Boumaa Fijian*. Chicago: University of Chicago Press.
- Dixon, R. M. W. 2000. A typology of causatives: form, syntax and meaning. *Changing Valency: Case Studies in Transitivity*, ed. R. M. W. Dixon and Alexandra Aikhenvald, 30–83. Cambridge: Cambridge University Press.
- Dixon, R. M. W. 2010a. *Basic Linguistic Theory*, vol. I: *Methodology*. Oxford: Oxford University Press.
- Dixon, R. M. W. 2010b. *Basic Linguistic Theory*, vol. II: *Grammatical Topics*. Oxford: Oxford University Press.
- Dobrushina, Nina. 2012. Subjunctive complement clauses in Russian. *Russian Linguistics* 36.121–56.
- Dobrushina, Nina. 2021. Negation in complement clauses of fear-verbs. *Functions of Language* 28.121–52.
- Doke, Clement. 1935. *Bantu Linguistic Terminology*. London: Longmans, Green.
- Donaldson, Tamsin. 1980. *Ngiyambaa: The Language of the Wangaaybuwan*. Cambridge: Cambridge University Press.
- Donohue, Mark. 1999. *A Grammar of Tukang Besi*. (Mouton Grammar Library, 20.) Berlin: Mouton de Gruyter.
- Donohue, Mark. 2001. Coding choices in argument structure: Austronesian applicatives in texts. *Studies in Language* 25.217–54.
- Donohue, Mark, and Lea Brown. 1999. Ergativity: some additions from Indonesia. *Australian Journal of Linguistics* 19.57–76.
- Douglas, W. H. 1964. *An Introduction to the Western Desert Language*, revised edition. (Oceania Linguistics Monographs, 4.) Sydney: University of Sydney.
- Downing, Pamela. 1977. On the creation and use of English compound nouns. *Language* 53.810–42.
- Drabbe, Petrus. 1957. *Spraakkunst van het Aghu-dialect van de Awju-taal*. 's-Gravenhage: Martinus Nijhoff.

- Dryer, Matthew S. 1986. Primary objects, secondary objects and antidative. *Language* 62:808–45.
- Dryer, Matthew S. 1989. Discourse-governed word order and word order typology. *Belgian Journal of Linguistics* 4:69–90.
- Dryer, Matthew S. 1992. The Greenbergian word order correlations. *Language* 68:81–138.
- Dryer, Matthew S. 1997. On the six-way word order typology. *Studies in Language* 21:69–103.
- Dryer, Matthew S. 2005a. Negative morphemes. *World Atlas of Language Structures*, ed. Martin Haspelmath, Matthew S. Dryer, David Gil, and Bernard Comrie, 454–57. Oxford: Oxford University Press.
- Dryer, Matthew S. 2005b. Polar questions. *World Atlas of Language Structures*, ed. Martin Haspelmath, Matthew S. Dryer, David Gil, and Bernard Comrie, 470–73. Oxford: Oxford University Press.
- Dryer, Matthew S. 2005c. Position of polar question particles. *World Atlas of Language Structures*, ed. Martin Haspelmath, Matthew S. Dryer, David Gil, and Bernard Comrie, 374–77. Oxford: Oxford University Press.
- Dryer, Matthew S. 2005d. Position of interrogative phrases in content questions. *World Atlas of Language Structures*, ed. Martin Haspelmath, Matthew S. Dryer, David Gil, and Bernard Comrie, 378–81. Oxford: Oxford University Press.
- Dryer, Matthew S. 2013a. On the six way word order typology, again. *Studies in Language* 37:267–301.
- Dryer, Matthew S. 2013b. Order of subject, object and verb. *The World Atlas of Language Structures Online*, ed. Matthew S. Dryer and Martin Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology. Available at <http://wals.info/chapter/81>, accessed March 13, 2017.
- Dryer, Matthew S. 2013c. Order of subject and verb. *The World Atlas of Language Structures Online*, ed. Matthew S. Dryer and Martin Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology. Available at <http://wals.info/chapter/82>, accessed March 13, 2017.
- Dryer, Matthew S. 2013d. Order of object and verb. *The World Atlas of Language Structures Online*, ed. Matthew S. Dryer and Martin Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology. Available at <http://wals.info/chapter/83>, accessed March 13, 2017.
- Dryer, Matthew S. 2013e. Order of adposition and noun phrase. *The World Atlas of Language Structures Online*, ed. Matthew S. Dryer and Martin Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology. Available at <http://wals.info/chapter/85>, accessed March 13, 2017.
- Dryer, Matthew S. 2013f. Order of relative clause and noun. *The World Atlas of Language Structures Online*, ed. Matthew S. Dryer and Martin Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology. Available at <http://wals.info/chapter/90>, accessed November 14, 2020.
- Dryer, Matthew S. 2014. Competing methods for uncovering linguistic diversity: the case of definite and indefinite articles. *Language* 90:e232–e249 (online only).
- Dryer, Matthew S. 2018. On the order of demonstrative, numeral, adjective and noun. *Language* 94:798–833.

- Dryer, Matthew S., with Orin D. Gensler. 2013. Order of object, oblique, and verb. *The World Atlas of Language Structures Online*, ed. Matthew S. Dryer and Martin Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology. Available at <http://wals.info/chapter/84>, accessed March 13, 2017.
- DuBois, John W. 1980. Beyond definiteness: the trace of identity in discourse. *The Pear Stories: Cognitive, Cultural and Linguistic Aspects of Narrative Production*, ed. Wallace L. Chafe, 203–74. Norwood, NJ: Ablex.
- DuBois, John W. 1987. The discourse basis of ergativity. *Language* 64.805–55.
- Du Feu, Veronica. 1996. *Rapanui*. (Routledge Descriptive Grammars.) London: Routledge.
- Dumestre, Gérard. 2003. *Grammaire fondamentale du bambara*. Paris: Éditions Karthala.
- Dumont, Jenny. 2011. NPs in conversation and narratives: the effects of genre, information flow and interaction. Ph.D. dissertation, University of New Mexico.
- Durie, Mark. 1985. *A Grammar of Acehnese on the Basis of a Dialect of North Aceh*. Dordrecht: Foris.
- Durie, Mark. 1997. Grammatical structures in verb serialization. *Complex Predicates*, ed. Alex Alsina, Joan Bresnan, and Peter Sells, 289–354. Stanford: Center for the Study of Language and Information.
- Durrell, Martin. 1996. *Hammer's German Grammar and Usage*, 3rd edition. London: Arnold.
- Eades, Diana. 1979. Gumbaynggir. *Handbook of Australian Languages*, vol. I, ed. R. M. W. Dixon and Barry J. Blake, 245–361. Amsterdam: John Benjamins.
- Eberhard, David Mark. 2009. Mamaindē grammar: a Northern Nambikwara language and its cultural context. Ph.D. dissertation, Vrije Universiteit Amsterdam. Utrecht: LOT.
- Ekundayo, S. A., and F. N. Akinnaso. 1983. Yorùbá serial verb string commutability constraints. *Lingua* 60.115–33.
- Elbert, Samuel H. 1988. *Echoes of a Culture: A Grammar of Rennell and Bellona*. (Oceanic Linguistics Special Publication, 22.) Honolulu: University of Hawaii Press.
- Elbert, Samuel H., and Mary Kawena Pukui. 1979. *Hawaiian Grammar*. Honolulu: University Press of Hawaii.
- Enfield, N. J. 2007. *A Grammar of Lao*. (Mouton Grammar Library, 38.) Berlin: Mouton de Gruyter.
- Engdahl, Elisabet. 1997. Relative clauses in context. *Working Papers in Scandinavian Syntax* 60.51–79. Lund: Department of Scandinavian Languages.
- England, Nora C. 1983. *A Grammar of Mam, a Mayan Language*. Austin: University of Texas Press.
- Erguvanlı, Eser. 1984. *The Function of Word Order in Turkish*. Berkeley: University of California Press.
- Eriksen, Pål, Seppo Kittilä, and Leena Kolehmainen. 2010. The linguistics of weather: cross-linguistic patterns of meteorological expressions. *Studies in Language* 34.565–601.
- Eriksen, Pål, Seppo Kittilä, and Leena Kolehmainen. 2012. Weather and language. *Language and Linguistics Compass* 6.383–402.
- Estrada-Fernández, Zarina, Mercedes Tubino Blanco, and Jesús Francisco Villalpando Quiñonez. 2013. Yaqui valency patterns. *Valency Patterns* Leipzig, ed. Iren Hartmann, Martin Haspelmath, and Bradley Taylor. Leipzig: Max Planck Institute for

- Evolutionary Anthropology. Available at <http://valpal.info/sentences/yaqu1251-124>, accessed August 12, 2017.
- Evans, Nicholas. 2000. Kinship verbs. *Approaches to the Typology of Word Classes*, ed. Bernard Comrie and Petra Vogel, 103–72. Berlin: Mouton de Gruyter.
- Evans, Nicholas. 2007. Insubordination and its uses. *Finiteness: Theoretical and Empirical Foundations*, ed. Irina Nikolaeva, 366–431. Oxford: Oxford University Press.
- Evans, Nicholas, Alice Gaby, and Rachel Nordlinger. 2007. Valency mismatches and the coding of reciprocity in Australian languages. *Linguistic Typology* 11.541–97.
- Evans, Nicholas, and Toshiki Osada. 2005. Mundari and argumentation in word class analysis. *Linguistic Typology* 9.442–57.
- Evans, Nicholas, and Honoré Watanabe (eds.). 2016. *Insubordination*. (Typological Studies in Language, 115.) Amsterdam: John Benjamins.
- Faraclas, Nicholas G. 1984. *A Grammar of Obolo*. Bloomington: Indiana University Linguistics Club.
- Farkas, Donka F., and Yoko Sugioka. 1983. Restrictive *if/when* clauses. *Linguistics & Philosophy* 6.225–58.
- Fauconnier, Gilles. 1985. *Mental Spaces*. Cambridge, Mass.: MIT Press.
- Feldman, Harry. 1986. *A Grammar of Awtuw*. (Pacific Linguistics, B94.) Canberra: Research School of Pacific Studies, The Australian National University.
- Fennell, J. 1961. *The Penguin Russian Course*. Harmondsworth, UK: Penguin.
- Feuillet, Jack. 1998. Typologie de ‘être’ et phrases essives. *Actance et valence dans les langues de l’Europe*, ed. Jack Feuillet, 663–751. Berlin: Mouton de Gruyter.
- Fillmore, Charles J. 1970. The grammar of hitting and breaking. *Readings in English Transformational Grammar*, ed. R. Jacobs and P. Rosenbaum, 120–33. Waltham, Mass.: Ginn.
- Fillmore, Charles J. 1977. The case for case reopened. *Grammatical Relations* (Syntax and Semantics, 8), ed. Peter Cole and Jerrold M. Sadock, 59–82. New York: Academic Press.
- Fillmore, Charles J. 1982. Frame semantics. *Linguistics in the Morning Calm*, ed. The Linguistic Society of Korea, 111–37. Seoul: Hanshin.
- Fillmore, Charles J. 1985. Frames and the semantics of understanding. *Quaderni di semantica* 6:222–54.
- Fillmore, Charles J. 1986. Pragmatically-controlled zero anaphora. *Proceedings of the Twelfth Annual Meeting of the Berkeley Linguistics Society*, ed. Vassiliki Nikiforidou et al., 95–107. Berkeley: Berkeley Linguistics Society.
- Fillmore, Charles J. 1987. Varieties of conditional sentences. *Proceedings of the Third Eastern States Conference on Linguistics*, ed. Fred Marshall, Ann Miller, and Zheng-sheng Zhang, 163–82. Columbus: Ohio State University Department of Linguistics.
- Fillmore, Charles F. 1990a. Epistemic stance and grammatical form in English conditional sentences. *Papers from the 26th Regional Meeting of the Chicago Linguistic Society*, ed. Michael Ziolkowski, Manuela Naske, and Karen Deaton, 137–62. Chicago: Chicago Linguistic Society.
- Fillmore, Charles J. 1990b. The contribution of linguistics to language understanding. *Proceedings of the First Symposium on Cognition, Language and Culture: Cross-disciplinary Dialog in Cognitive Sciences*, ed. Aura Bocaz, 109–28. Santiago: Universidad de Chile.

- Fillmore, Charles J., and B. T. S. Atkins. 1992. Towards a frame-based lexicon: the semantics of RISK and its neighbors. *Frames, Fields and Contrasts: New Essays in Semantics and Lexical Organization*, ed. Adrienne Lehrer and Eva Feder Kittay, 75–102. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Fillmore, Charles J., Christopher R. Johnson, and Miriam R. L. Petrucc. 2003. Background to FrameNet. *International Journal of Lexicography* 16.235–50.
- Fillmore, Charles J., Paul Kay, and Mary Catherine O'Connor. 1988. Regularity and idiomaticity in grammatical constructions: the case of *let alone*. *Language* 64.501–38.
- Fischer, Wolfdietrich, and Otto Jastrow (eds.). 1980. *Handbuch der arabischen Dialekte*. (Porta Linguarum Orientalium, n.s., 16.) Wiesbaden: Harrassowitz.
- Foley, William A. 1986. *The Papuan Languages of New Guinea*. Cambridge: Cambridge University Press.
- Foley, William A., and Robert D. Van Valin, Jr. 1984. *Functional Syntax and Universal Grammar*. Cambridge: Cambridge University Press.
- Ford, Cecelia E., and Sandra A. Thompson. 1986. Conditionals in discourse: a text-based study from English. *On Conditionals*, ed. Elizabeth Closs Traugott, Alice ter Meulen, Judy Snitzer Reilly, and Charles A. Ferguson, 353–72. Cambridge: Cambridge University Press.
- Foris, David Paul. 2000. *A Grammar of Sochiapan Chinantec*. (Studies in Chinantec Languages, 6.) Dallas: Summer Institute of Linguistics.
- Fortescue, Michael. 1984. *West Greenlandic*. (Croom Helm Descriptive Grammars.) Dover, NH: Croom Helm.
- Fox, B. J. 1979. *Big Nambas Grammar*. (Pacific Linguistics, B60.) Canberra: Research School of Pacific Studies, Australian National University.
- Frachtenberg, Leo J. 1922. Siuslawan. *Handbook of American Indian Languages, Part 2* (Bureau of American Ethnology Bulletin, 40), ed. Franz Boas, 431–629. Washington, D.C.: Government Printing Office.
- Frajzyngier, Zygmunt. 1993. *A Grammar of Mupun*. Berlin: Dietrich Reimer Verlag.
- François, Alexandre. 2001. Contraintes de structures et liberté dans l'organisation du discours. Une description du mwotlap, langue océanienne du Vanuatu. Thesis, Université Paris-IV Sorbonne.
- Fraurud, Kari. 1990. Definiteness and the processing of noun phrases in natural discourse. *Journal of Semantics* 7.397–433.
- Furbee, N. Louanna. 1974. Identity in Gapping and the lexical insertion of verbs. *Linguistic Inquiry* 4.299–304.
- Galloway, Brent D. 1993. *A Grammar of Upriver Halkomelem*. (University of California Publications in Linguistics, 96.) Berkeley: University of California Press.
- García Macías, José Hugo. 2016. From the unexpected to the unbelievable: thetics, miratives and exclamatives in conceptual space. Ph.D. dissertation, University of New Mexico.
- Gast, Volker, and Johan van der Auwera. 2011. Scalar additive operators in the languages of Europe. *Language* 87.2–54.
- Gast, Volker, and Johan van der Auwera. 2013. Scalar additive operators in Transeurasian languages – a comparison with Europe. *Shared Grammaticalization: A Special Focus on the Transeurasian Languages*, ed. Martine Robbeets and Hubert Cuyckens, 113–45. Amsterdam: John Benjamins.

- Genetti, Carol. 1986. The development of subordinators from postpositions in Bodic languages. *Proceedings of the Twelfth Annual Meeting of the Berkeley Linguistics Society*, ed. Vassiliki Nikiforidou, Mary VanClay, Mary Niepokuj, and Deborah Feder, 387–400. Berkeley: Berkeley Linguistics Society.
- Gilligan, Gary Martin. 1987. A cross-linguistic approach to the pro-drop parameter. Ph.D. dissertation, University of Southern California.
- Givón, Talmy. 1971. Dependent modals, performatives, factivity, Bantu subjunctives and what not. *Studies in African Linguistics* 2.61–81.
- Givón, Talmy. 1976. Topic, pronoun and grammatical agreement. *Subject and Topic*, ed. Charles Li, 149–89. New York: Academic Press.
- Givón, Talmy. 1979. *On Understanding Grammar*. New York: Academic Press.
- Givón, Talmy. 1980. The binding hierarchy and the typology of complements. *Studies in Language* 4.333–77.
- Givón, Talmy. 1981a. On the development of the numeral ‘one’ as an indefinite marker. *Folia Linguistica Historica* 2.35–53.
- Givón, Talmy. 1981b. Typology and functional domains. *Studies in Language* 5:163–93.
- Givón, Talmy. 1983. Topic continuity in discourse: an introduction. *Topic Continuity in Discourse*, ed. Talmy Givón, 1–41. Amsterdam: John Benjamins.
- Givón, Talmy. 1984. The speech-act continuum. *Interrogativity: A Colloquium on the Grammar, Typology and Pragmatics of Questions in Seven Diverse Languages*, ed. William S. Chisholm, Jr., 245–54. Amsterdam: John Benjamins.
- Givón, Talmy. 1994. Irrealis and the subjunctive. *Studies in Language* 18.265–337.
- Givón, Talmy. 2001a. *Syntax*, vol. I. Amsterdam: John Benjamins.
- Givón, Talmy. 2001b. *Syntax*, vol. II. Amsterdam: John Benjamins.
- Glinert, Lewis. 1989. *The Grammar of Modern Hebrew*. Cambridge: Cambridge University Press.
- Goldberg, Adele E. 1995. *Constructions: A Construction Grammar Approach to Argument Structure*. Chicago: University of Chicago Press.
- Goldberg, Adele E. 2006. *Constructions at Work: The Nature of Generalization in Language*. Oxford: Oxford University Press.
- Goldsmith, John, and Eric Woisetschlaeger. 1982. The logic of the English progressive. *Linguistic Inquiry* 13.79–89.
- Graczyk, Randolph. 2007. *A Grammar of Crow*. Lincoln: University of Nebraska Press.
- Gradin, Dwight. 1976. The verb in Jeh. *Mon-Khmer Studies* 5.43–75.
- Green, Georgia. 1976. Main clause phenomena in subordinate clauses. *Language* 52.382–97.
- Greenberg, Joseph H. 1966a. *Language Universals, with Special Reference to Feature Hierarchies*. (Janua Linguarum, Series Minor 59.) The Hague: Mouton.
- Greenberg, Joseph H. 1966b. Some universals of grammar with particular reference to the order of meaningful elements. *Universals of Grammar*, 2nd edition, ed. Joseph H. Greenberg, 73–113. Cambridge, Mass.: MIT Press. (Reprinted in Greenberg 1990, 40–70.)
- Greenberg, Joseph H. 1968. *Anthropological Linguistics*. New York: Random House.
- Greenberg, Joseph H. 1975. Dynamic aspects of word order in the numeral classifier. *Word Order and Word Order Change*, ed. Charles Li, 27–47. Austin: University of Texas Press. (Reprinted in Greenberg 1990, 227–40.)

- Greenberg, Joseph H. 1977. Numeral classifiers and substantival number: problems in the genesis of a linguistic type. *Linguistics at the Crossroads*, ed. Adam Makkai, Valerie Becker Makkai, and Luigi Heilmann, 276–300. Padua: Liviana Editrice. (Originally published in *Working Papers in Language Universals* 9.1–40, 1972; reprinted in Greenberg 1990, 166–93.)
- Greenberg, Joseph H. 1978a. How does a language acquire gender markers? *Universals of Human Language*, vol. III: *Word Structure*, ed. Joseph H. Greenberg, Charles A. Ferguson, and Edith A. Moravcsik, 47–82. Stanford: Stanford University Press. (Reprinted in Greenberg 1990, 241–70.)
- Greenberg, Joseph H. 1978b. Generalizations about numeral systems. *Universals of Human Language*, vol. III: *Word Structure*, ed. Joseph H. Greenberg, Charles A. Ferguson and Edith A. Moravcsik, 249–296. Stanford: Stanford University Press. (Reprinted in Greenberg 1990, 271–309.)
- Greenberg, Joseph H. 1981. Nilo-Saharan movable *k*- as a stage III article (with a Penutian typological parallel). *Journal of African Languages and Linguistics* 3.105–12. (Reprinted in Greenberg 1990, 476–83.)
- Greenberg, Joseph H. 1990. *On Language: Selected Writings of Joseph H. Greenberg*, ed. Keith Denning and Suzanne Kemmer. Stanford: Stanford University Press.
- Gregores, Emma, and Jorge A. Suárez. 1967. *A Description of Colloquial Guarani*. The Hague: Mouton.
- Grierson, G. A. 1909. *Linguistic Survey of India*, vol. III: part 1, *Tibeto-Burman Family: General Introduction, Specimens of the Tibetan Dialects, the Himalayan Dialects, and the North Assam Group*. Reprint published by Low Price Publication, Delhi, India.
- Grimes, Joseph E. 1975. *The Thread of Discourse*. The Hague: Mouton.
- Grüssner, Karl-Heinz. 1978. *Arleng Alam: die Sprache der Mikir*. Wiesbaden: Franz Steiner.
- Gruzdeva, Ekaterina. 1998. *Nivkh*. Munich: LINCOM Europa.
- Guillaume, Antoine. 2008. *A Grammar of Cavineña*. (Mouton Grammar Library, 44.) Berlin: Mouton de Gruyter.
- Gundel, Jeannette K., Nancy Hedberg, and Ron Zacharski. 1993. Cognitive status and the form of referring expressions in discourse. *Language* 69.274–307.
- Guy, J. B. M. 1974. *A Grammar of the Northern Dialect of Sakao*. (Pacific Linguistics, B33.) Canberra: Research School of Pacific Studies, Australian National University.
- Haider, Hubert, and Ronald Zwanziger. 1984. Relatively attributive: the ‘ezāfe’-construction from Old Iranian to Modern Persian. *Historical Syntax*, ed. Jacek Fisiak, 137–72. Berlin: Mouton de Gruyter.
- Haiman, John. 1974. Concessives, conditionals, and verbs of volition. *Foundations of Language* 11.341–59.
- Haiman, John. 1977. Connective particles in Hua; an essay on the parts of speech. *Oceanic Linguistics* 16.53–107.
- Haiman, John. 1978a. A study in polysemy. *Studies in Language* 2.1–34.
- Haiman, John. 1978b. Conditionals are topics. *Language* 54.564–89.
- Haiman, John. 1980. *Hua: A Papuan Language of the Eastern Highlands of New Guinea*. (Studies in Language Companion Series, 5.) Amsterdam: John Benjamins.
- Haiman, John. 1983a. Iconic and economic motivation. *Language* 59.781–819.

- Haiman, John. 1983b. On some origins of switch-reference marking. *Switch-Reference and Universal Grammar*, ed. John Haiman and Pamela Munro, 105–28. Amsterdam: John Benjamins.
- Haiman, John. 1985a. Symmetry. *Iconicity in Grammar* ed. John Haiman, 73–96. Amsterdam: John Benjamins.
- Haiman, John. 1985b. *Natural Syntax: Iconicity and Erosion*. Cambridge: Cambridge University Press.
- Haiman, John. 1990. Schizophrenic complementizers. *Studies in Typology and Diachrony for Joseph H. Greenberg*, ed. William Croft, Keith Denning, and Suzanne Kemmer, 79–94. Amsterdam: John Benjamins.
- Haiman, John. 2011. *Cambodian (Khmer)*. Amsterdam: John Benjamins.
- Haiman, John, and Pamela Munro (ed.). 1983. *Switch-Reference and Universal Grammar*. Amsterdam: John Benjamins.
- Hakulinen, Auli, and Fred Karlsson. 1979. *Nykysuomen lauseoppia*. Juväskylä: Suomalaisen Kirjallisuuden Seura.
- Hale, Kenneth. 1976. The adjoined relative clause in Australian languages. *Grammatical Categories in Australian Languages*, ed. R. M. W. Dixon, 78–105. Canberra: Australian Institute of Aboriginal Studies.
- Hale, Kenneth. 1991. Misumalpan verb sequencing constructions. *Serial Verbs: Grammatical, Comparative and Cognitive Approaches*, ed. Claire Lefebvre, 1–35. Amsterdam: John Benjamins.
- Halmøy, Jane-Odile. 1982. *Le gérondef. Éléments pour une description syntaxique et sémantique*. (Contributions Norvégiennes aux Études Romanes, 6.) Trondheim: Tapir.
- Hancher, Michael. 1979. The classification of co-operative illocutionary acts. *Language in Society* 8.1–14.
- Harbert, Wayne. 2007. *The Germanic Languages*. Cambridge: Cambridge University Press.
- Harning, Kerstin Eksell. 1980. *The Analytic Genitive in the Modern Arabic Dialects*. Göteborg: Acta Universitatis Gothoburgensis.
- Harris, Alice C., and Lyle Campbell. 1995. *Historical Syntax in Cross-Linguistic Perspective*. Cambridge: Cambridge University Press.
- Harris, John. 1993. The grammar of Irish English. *Real English: The Grammar of English in the British Isles*, ed. James Milroy and Lesley Milroy, 139–86. London: Longman.
- Harris, Zellig S. 1951. *Methods in Structural Linguistics*. Chicago: University of Chicago Press.
- Harrison, Sheldon P. 1976. *Mokilese Reference Grammar*. Honolulu: University Press of Hawaii.
- Hartmann, Iren, Martin Haspelmath, and Michael Cysouw. 2014. Identifying semantic role clusters and alignment types via microrole coexpression tendencies. *Studies in Language* 38.463–84.
- Haspelmath, Martin. 1989. From purposive to infinitive – a universal path of grammaticalization. *Folia Linguistica Historica* 10.287–310.
- Haspelmath, Martin. 1993a. More on the typology of inchoative/causative verb alternations. *Causatives and Transitivity*, ed. Bernard Comrie and Maria Polinsky, 87–120. Amsterdam: John Benjamins.

- Haspelmath, Martin. 1993b. *A Grammar of Lezgian*. Berlin: Mouton de Gruyter.
- Haspelmath, Martin. 1995. The converb as a cross-linguistically valid category. *Converbs in Cross-Linguistic Perspective: Structure and Meaning of Adverbial Verb Forms – Adverbials, Participles, Gerunds*, ed. Ekkehard König and Martin Haspelmath, 1–55. Berlin: Mouton de Gruyter.
- Haspelmath, Martin. 1997. *Indefinite Pronouns*. Oxford: Oxford University Press.
- Haspelmath, Martin. 1999a. Explaining article–possessor complementarity: economic motivation in noun phrase syntax. *Language* 75.227–43.
- Haspelmath, Martin. 1999b. External possession in a European areal perspective. *External Possession*, ed. Doris L. Payne and Immanuel Barshi, 109–35. Amsterdam: John Benjamins.
- Haspelmath, Martin. 2003. The geometry of grammatical meaning: semantic maps and cross-linguistic comparison. *The New Psychology of Language*, vol. II, ed. Michael Tomasello, 211–42. Mahwah, N.J.: Lawrence Erlbaum Associates.
- Haspelmath, Martin. 2004. Coordinating constructions: an overview. *Coordinating Constructions*, ed. Martin Haspelmath, 3–39. Amsterdam: John Benjamins.
- Haspelmath, Martin. 2007. Coordination. *Language Typology and Syntactic Description, Second Edition*, vol. II: *Complex Constructions*, ed. Timothy Shopen, 1–51. Cambridge: Cambridge University Press.
- Haspelmath, Martin. 2008. Frequency vs. iconicity in explaining grammatical asymmetries. *Cognitive Linguistics* 19.1–33.
- Haspelmath, Martin. 2010a. Framework-free grammatical theory. *The Oxford Handbook of Linguistic Analysis*, ed. Bernd Heine and Heiko Narrog, 341–65. Oxford: Oxford University Press.
- Haspelmath, Martin. 2010b. Comparative concepts and descriptive categories in cross-linguistic studies. *Language* 86.663–87.
- Haspelmath, Martin. 2011a. The indeterminacy of word segmentation and the nature of morphology and syntax. *Folia Linguistica* 45.31–80.
- Haspelmath, Martin. 2011b. On S, A, P, T, and R as comparative concepts for alignment typology. *Linguistic Typology* 15.535–67.
- Haspelmath, Martin. 2013. Argument indexing: a conceptual framework for the syntactic status of bound person forms. *Languages Across Boundaries: Studies in Memory of Anna Siewierska*, ed. Dik Bakker and Martin Haspelmath, 197–226. Berlin: Mouton de Gruyter.
- Haspelmath, Martin. 2015. Transitivity prominence. *Valency Classes in the World's Languages*, ed. Andrej L. Malchukov and Bernard Comrie, 131–47. Berlin: Mouton de Gruyter.
- Haspelmath, Martin. 2016. The serial verb construction: comparative concept and cross-linguistic generalization. *Language and Linguistics* 17.291–319.
- Haspelmath, Martin. 2021. Role-reference associations and the explanation of argument coding splits. *Linguistics* 59.123–74.
- Haspelmath, Martin, with Oda Buchholz. 1998. Equative and simulative constructions in the languages of Europe. *Adverbial Constructions in the Languages of Europe*, ed. Johan van der Auwera, 277–334. Berlin: Mouton de Gruyter.
- Haspelmath, Martin, Andrea Calude, Michael Spagnol, Heiko Narrog, and Elif Ban-yaci. 2014. Coding causal–noncausal verb alternations: a form–frequency correspondence explanation. *Journal of Linguistics* 50.587–625.

- Haspelmath, Martin, and Ekkehart König. 1998. Concessive conditionals in the languages of Europe. *Adverbial Constructions in the Languages of Europe*, ed. Johan van der Auwera, 563–640. Berlin: Mouton de Gruyter.
- Haspelmath, Martin, and Andrea D. Sims. 2010. *Understanding Morphology*, 2nd edition. London: Hodder.
- Haude, Katerina. 2006. A grammar of Movima. Ph.D. dissertation, Radboud Universiteit Nijmegen.
- Hawkins, John A. 1983. *Word Order Universals*. New York: Academic Press.
- Hawkins, John A. 1991. On (in)definite articles: implicatures and (un)grammaticality prediction. *Journal of Linguistics* 27.405–42.
- Hawkins, John A. 1999. Processing complexity and filler-gap dependencies across grammars. *Language* 75.244–85.
- Hawkinson, Annie, and Larry Hyman. 1974. Natural hierarchies of topic in Shona. *Studies in African Linguistics* 5.147–70.
- Heath, Jeffrey. 1979. Is Dyirbal ergative? *Linguistics* 17.401–63.
- Heath, Jeffrey. 1980. Dyirbal ergativity: counter-rejoinder to Dixon. *Linguistics* 18.505–21.
- Hedinger, Robert. 2008. *A Grammar of Akoose, a Northwest Bantu Language*. Arlington, Tex.: Summer Institute of Linguistics and the University of Texas at Arlington.
- Heim, Irene. 1983. File change semantics and the familiarity theory of definiteness. *Meaning, Use and Interpretation of Language*, ed. Rainer Bäuerle, Christoph Schwartz, and Arnim von Stechow, 164–89. Berlin: Walter de Gruyter.
- Heine, Bernd. 1997. *Possession: Cognitive Sources, Forces, and Grammaticalization*. Cambridge: Cambridge University Press.
- Heine, Bernd, and Mechthild Reh. 1984. *Grammaticalization and Reanalysis in African Languages*. Hamburg: Helmut Buske Verlag.
- Henderson, James. 1995. *Phonology and Grammar of Yele, Papua New Guinea*. (Pacific Linguistics, B112.) Canberra: Research School of Pacific Studies, Australian National University.
- Hengeveld, Kees. 1992. *Non-Verbal Predication: Theory, Typology, Diachrony*. Berlin: Mouton de Gruyter.
- Herslund, Michael. 1980. Problèmes de syntaxe de l'ancien français: compléments datifs et génitifs. *Études Romanes de l'Université de Copenhague*. (Revue Romane, numéro spécial 21).
- Hetzron, Robert. 1976. On the Hungarian causative verb and its syntax. *The Grammar of Causative Constructions* (Syntax and Semantics, 6), ed. Masayoshi Shibatani, 371–98. New York: Academic Press.
- Hewitt, B. G. 1979. *Abkhaz*. (Lingua Descriptive Studies, 2.) Amsterdam: North-Holland.
- Himmelmann, Nikolaus P. 1996. Demonstratives in narrative discourse: a taxonomy of universal uses. *Studies in Anaphora*, ed. Barbara Fox, 205–54. Amsterdam: John Benjamins.
- Himmelmann, Nikolaus P., and Eva Schultze-Berndt. 2005. Issues in the syntax and semantics of participant-oriented adjuncts: an introduction. *Secondary Predication and Adverbial Modification: The Typology of Depictives*, ed. Nikolaus Himmelmann and Evan Schultze-Berndt, 1–67. Oxford: Oxford University Press.
- Hodson, Arnold W., and Craven H. Walker. 1922. *An Elementary and Practical Grammar of the Galla or Oromo Language*. London: Society for Promoting Christian Knowledge.

- Hoffman, Carl. 1963. *A Grammar of the Margi Language*. London: Oxford University Press.
- Hoffmann, J. 1903. *Mundari Grammar*. Calcutta: Bengal Secretariat Press.
- Hofling, Charles Andrew. 2000. *Itzaj Maya Grammar*. Salt Lake City: University of Utah Press.
- Holisky, Dee Ann. 1987. The case of the intransitive subject in Tsova-Tush (Batsbi). *Lingua* 71.103–32.
- Holmes, Philip, and Ian Hinchliffe. 1994. *Swedish: A Comprehensive Grammar*. London: Routledge.
- Holton, David, Peter Mackridge, and Irene Philippaki-Warburton. 1997. *Greek: A Comprehensive Grammar of the Modern Language*. London: Routledge.
- Hopper, Paul J. 1991. Dispersed verbal predicates in vernacular written narrative. *Proceedings of the Seventeenth Annual Meeting of the Berkeley Linguistics Society*, ed. Laurel A. Sutton and Christopher Johnson with Ruth Shields, 402–13. Berkeley: Berkeley Linguistics Society. Available at <http://elanguage.net/journals/bls/article/view/2719/2700>.
- Hopper, Paul, and Sandra A. Thompson. 1980. Transitivity in grammar and discourse. *Language* 56.251–99.
- Hopper, Paul, and Sandra A. Thompson (eds.) 1982. *Studies in Transitivity*. (Syntax and Semantics, 15.) New York: Academic Press.
- Hopper, Paul, and Elizabeth Traugott. 2003. *Grammaticalization*, 2nd edition. Cambridge: Cambridge University Press.
- Hoyt, Frederick. 2000. Agreement, specificity effects, and phrase structure in rural Palestinian Arabic existential constructions. MA thesis, Cornell University.
- Huffman, Franklin E. 1967. *Modern Spoken Cambodian*. New Haven, Conn.: Yale University Press.
- Hurford, James. 2003. The interaction between numerals and nouns. *Noun Phrase Structure in the Languages of Europe*, ed. Frans Plank, 561–620. Berlin: Mouton de Gruyter.
- Hyman, Larry M., and Bernard Comrie. 1981. Logophoric reference in Gokana. *Journal of African Languages and Linguistics* 3.19–37.
- Ichihashi-Nakayama, Kumiko. 1996. The ‘applicative’ in Hualapai: its functions and meanings. *Cognitive Linguistics* 7.227–39.
- Imai, Shingo. 2003. Spatial deixis. Ph.D. dissertation, University at Buffalo.
- Innes, Gordon. 1966. *An Introduction to Grebo*. London: School of Oriental and African Studies, University of London.
- Iwasaki, Shoichi. 2013. *Japanese*, revised edition. Amsterdam: John Benjamins.
- Iwasaki, Shoichi, and Preeya Ingkaphirom. 2005. *A Reference Grammar of Thai*. Cambridge: Cambridge University Press.
- Iwata, Seizi. 2006. Argument resultatives and adjunct resultatives in a lexical constructional account: the case of resultatives with adjectival result phrases. *Language Sciences* 28.449–96.
- Jacobsen, Wesley. 1982. *Transitivity in the Japanese Verbal System*. Bloomington: Indiana University Linguistics Club.
- Jacobsen, William H., Jr. 1979. Noun and verb in Nootkan. *The Victoria Conference on Northwestern Languages*. (British Columbia Provincial Museum Heritage Record, 4.) Victoria, BC: British Columbia Provincial Museum, 83–155.

- Jagersma, Abraham Hendrik. 2010. A descriptive grammar of Sumerian. Ph.D. dissertation, Universiteit Leiden.
- Jagger, Philip. 1992. *An Advanced Hausa Reader with Grammatical Notes and Exercises*. London: School of Oriental and African Studies.
- James, Deborah. 1982. Past tense and the hypothetical: a cross-linguistic study. *Studies in Language* 6.375–403.
- James, Deborah. 1984. Raising to subject in Moose Cree: a problem for Subjacency. *The Syntax of Native American Languages* (Syntax and Semantics, 16), ed. Eung-Do Cook and Donna B. Gerdts, 205–13. New York: Academic Press.
- Janaš, Pětr. 1984. *Niedersorbische Grammatik*, 2nd edition. Bautzen: Domowina-Verlag [1st edition, 1976].
- Janda, Laura, and Steven J. Clancy. 2002. *The Case Book for Russian*. Bloomington: Slavica.
- Jelinek, Eloise, and Richard A. Demers. 1983. The agent hierarchy and voice in some Coast Salishan languages. *International Journal of American Linguistics* 49.167–85.
- Jespersen, Otto. 1924. *The Philosophy of Grammar*. New York: Norton.
- Johnston, R. L. 1980. *Nakanai of New Britain: The Grammar of an Oceanic Language*. (Pacific Linguistics, B70.) Canberra: Research School of Pacific Studies, The Australian National University.
- Kähler, Hans. 1965. *Grammatik der Bahasa Indonésia*. Wiesbaden: Otto Harrassowitz.
- Karlsson, Fred. 2018. *Finnish: A Comprehensive Grammar*. London: Routledge.
- Kaufman, Daniel. 2011. Exclamatives and temporal nominalizations in Austronesian. *Nominalization in Asian Languages: Diachronic and Typological Perspectives*, ed. Foong Ha Yap, Karen Grunow-Härsta, and Janick Wrona, 721–54. Amsterdam: John Benjamins.
- Kaufman, Ellen S. 1974. Navajo spatial enclitics: a case for unbounded rightward movement. *Linguistic Inquiry* 5.507–34.
- Kawachi, Kazuhiro. 2007. A grammar of Sidaama (Sidamo), a Cushitic language of Ethiopia. Ph.D. dissertation, University at Buffalo.
- Kay, Paul, and Karl Zimmer. 1990. On the semantics of compounds and genitives in English. *Meaning and Prototypes*, ed. Savas L. Tsohatzidis, 239–46. (Originally published in the *Proceedings of the Sixth California Linguistics Association Conference*, 1976.)
- Keenan, Edward L. 1972. Relative clause formation in Malagasy* (and some related and some not so related languages). *The Chicago Which Hunt: Papers from the Relative Clause Festival*, ed. Paul Peranteau, Judith N. Levi, and Gloria C. Phares, 169–89. Chicago: Chicago Linguistic Society.
- Keenan, Edward L. 1976. Remarkable subjects in Malagasy. *Subject and Topic*, ed. Charles N. Li, 247–301. New York: Academic.
- Keenan, Edward L. 1978. The syntax of subject-final languages. *Syntactic Typology: Studies in the Phenomenology of Language*, ed. Winfred P. Lehmann, 267–327. Austin: University of Texas Press.
- Keenan, Edward L. 1985. Relative clauses. *Language Typology and Syntactic Description*, vol. II: *Complex Constructions*, ed. Timothy Shopen, 141–70. Cambridge: Cambridge University Press.
- Keenan, Edward L. 1987. The logical status of deep structures: logical constraints on syntactic processes. *Universal Grammar: 15 Essays*, 337–60. London: Croom Helm.

- (Originally published in *Proceedings of the Eleventh International Congress of Linguists*, ed. Luigi Heilmann, 477–95. Bologna: Società editrice il Mulino, 1972.)
- Keenan, Edward L., and Bernard Comrie. 1977. Noun phrase accessibility and universal grammar. *Linguistic Inquiry* 8:63–99. (Reprinted in Edward L. Keenan, *Universal Grammar: 15 Essays*, 3–46. London: Croom Helm, 1987.)
- Keenan, Edward L., and Bernard Comrie. 1979. Data on the noun phrase accessibility hierarchy. *Language* 55:333–51.
- Kemmer, Suzanne. 1993. *The Middle Voice*. (Typological Studies in Language, 23.) Amsterdam: John Benjamins.
- Kemmer, Suzanne and Arie Verhagen. 1994. The grammar of causatives and the conceptual structure of events. *Cognitive Linguistics* 5:115–56.
- Kenesei, István, Robert M. Vago, and Anna Fenyvesi. 1998. *Hungarian*. (Routledge Descriptive Grammars.) London: Routledge.
- Kibrik, Aleksandr E. (ed.). 2001. *Bagvalinskij jazyk: grammatika, teksty, slovari*. Moscow: IMLI RAN, Nasledie.
- Kibrik, Andrej A. 2004. Coordination in Upper Kuskokwim Athabaskan. *Coordinating Constructions*, ed. Martin Haspelmath, 537–53. Amsterdam: John Benjamins.
- Kilian-Hatz, Christa. 2008. *A Grammar of Modern Khwe (Central Khoisan)*. Cologne: Rüdiger Köppe Verlag.
- Kimball, Geoffrey. 1991. *Koasati Grammar*. Lincoln: University of Nebraska Press.
- Kimenyi, Alexandre 1980. *A Relational Grammar of Kinyarwanda*. (University of California Publications in Linguistics, 91.) Berkeley and Los Angeles: University of California Press.
- Kirsner, Robert, and Sandra A. Thompson. 1976. The role of pragmatic inference in semantics: a study of sensory verb complements in English. *Glossa* 10:200–40.
- Kittilä, Seppo. 2006. The anomaly of the verb ‘give’ explained by its high (formal and semantic) transitivity. *Linguistics* 44:569–612.
- Koch, Peter. 2012. Location, existence and possession: a constructional-typological exploration. *Linguistics* (special issue: New Directions in Lexical Typology) 50:533–603.
- König, Christa. 2008. *Case in Africa*. Oxford: Oxford University Press.
- König, Ekkehart. 1986. Conditionals, concessive conditionals and concessives: areas of contrast, overlap and neutralization. *On Conditionals*, ed. Elizabeth Closs Traugott, Alice ter Meulen, Judy Snitzer Reilly, and Charles A. Ferguson, 229–46. Cambridge: Cambridge University Press.
- König, Ekkehart. 1988. Concessive connectives and concessive sentences: cross-linguistic regularities and pragmatic principles. *Explaining Language Universals*, ed. John A. Hawkins, 145–66. Oxford: Blackwell.
- König, Ekkehart, and Volker Gast. 2006. Focused assertion of identity: a typology of intensifiers. *Linguistic Typology* 10:223–76.
- König, Ekkehart, and Volker Gast. 2008. Reciprocity and reflexivity – description, typology and theory. *Reciprocals and Reflexives: Theoretical and Typological Explorations*, ed. Ekkehard König and Volker Gast, 1–31. Berlin: Mouton de Gruyter.
- König, Ekkehart, and Shigehiru Kokutani. 2006. Towards a typology of reciprocal constructions: focus on German and Japanese. *Linguistics* 46:271–302.
- König, Ekkehart, and Pieter Siemund. 2007. Speech act distinctions in grammar. *Language Typology and Syntactic Description, 2nd Edition*, vol. I: *Clause Structure*, ed. Timothy Shopen, 276–324. Cambridge: Cambridge University Press.

- Koptjevskaja-Tamm, Maria. 1993. *Nominalizations*. London: Routledge.
- Koptjevskaja-Tamm, Maria. 2001. 'A slice of the cake' and 'a cup of tea': partitive and pseudo-partitive constructions in the Circum-Baltic languages. *Circum-Baltic Languages: Their Typology and Contacts*, ed. Östen Dahl and Maria Koptjevskaja-Tamm, 523–68. Amsterdam: John Benjamins.
- Koptjevskaja-Tamm, Maria. 2002. Adnominal possession in the European languages: form and function. *Sprachtypologie und Universalienforschung* 55.141–72.
- Koptjevskaja-Tamm, Maria. 2003a. *A woman of sin, a man of duty, and a hell of a mess*: non-determiner genitives in Swedish. *Noun Phrase Structure in the Languages of Europe*, ed. Frans Plank, 515–58. Berlin: Mouton de Gruyter.
- Koptjevskaja-Tamm, Maria. 2003b. Possessive noun phrases in the languages of Europe. *Noun Phrase Structure in the Languages of Europe*, ed. Frans Plank, 621–722. Berlin: Mouton de Gruyter.
- Koptjevskaja-Tamm, Maria. 2004. *Maria's ring of gold*: adnominal possession and non-anchoring relations in the European languages. *Possessives and Beyond: Semantics and Syntax* (University of Massachusetts Occasional Papers in Linguistics, 29), ed. Ji-yung Kim, Yury A. Lander, and Barbara H. Partee, 155–81. Amherst, Mass.: GLSA Publications.
- Koptjevskaja-Tamm, Maria. 2009. 'A lot of grammar with a good portion of lexicon': towards a typology of partitive and pseudo-partitive nominal constructions. *Form and Function in Language Research: Papers in Honour of Christian Lehmann*, ed. Johannes Helmbrecht, Yoko Nishina, Yong-Min Shin, Stavros Skopeteas, and Elisabeth Verhoeven, 329–46. Berlin: Mouton de Gruyter.
- Koptjevskaja-Tamm, Maria. 2013. *A Mozart sonata and the Palme funeral*: the structure and uses of proper-name compounds in Swedish. *Morpho-Syntactic Categories and the Expression of Possession*, ed. Kersti Börjars, David Denison, and Alan Scott, 253–90. Amsterdam: John Benjamins.
- Kortmann, Bernd. 1991. *Free Adjuncts and Absolutes in English: Problems of Control and Interpretation*. London: Routledge.
- Kossmann, Maarten G. 2000. *Esquisse grammaticale du rifain oriental*. Paris: Peeters.
- Kraft, C. H., and A. H. M. Kirk-Greene. 1973. *Hausa*. London: English Universities Press.
- Krueger, John R. 1962. *Yakut Manual*. (Indiana University Publications, Uralic and Altaic Series, 21.) Bloomington: Indiana University.
- Kühner, Raphael 1879. *Ausführliche Grammatik der lateinischen Sprache, Zweiter Band, Zweite Abteilung*. Hannover: Hahnsche Buchhandlung.
- Kühner, Raphael, and Carl Stegmann. 1955. *Ausführliche Grammatik der lateinischen Sprache: Satzlehre*, vol. II. Leverkusen: Gottschalk.
- Künnap, Ago. 1999. *Kamass*. Munich: LINCOM Europa.
- Kuno, Susumu. 1972. Functional sentence perspective: a case study from Japanese and English. *Linguistic Inquiry* 3.269–320.
- Kuno, Susumu. 1973. *The Structure of the Japanese Language*. Cambridge, Mass.: MIT Press.
- Kuroda, S.-Y. 1972. The categorical and the thetic judgement: evidence from Japanese syntax. *Foundations of Language* 9.153–85.
- Kutsch Lojenga, Constance. 1994. *Ngiti: A Central Sudanic Language of Zaire*. Cologne: Rüdiger Köppe Verlag.
- Lafitte, Pierre. 1962. *Grammaire Basque*. Bayonne: Éditions des 'Amis du Musée Basque' et 'Ikas.'

- Lakoff, George. 1984. Performative subordinate clauses. *Proceedings of the Tenth Annual Meeting of the Berkeley Linguistics Society*, ed. Claudia Brugman et al., 472–80. Berkeley: Berkeley Linguistics Society.
- Lambrecht, Knud. 1988. There was a farmer had a dog: syntactic amalgams revisited. *Proceedings of the Fourteenth Annual Meeting, Berkeley Linguistics Society*, ed. Shelley Axmaker, Annie Jaissier, and Helen Singmaster, 319–39. Berkeley: Berkeley Linguistics Society.
- Lambrecht, Knud. 1994. *Information Structure and Sentence Form: Topic, Focus and the Mental Representations of Discourse Referents*. Cambridge: Cambridge University Press.
- Lambrecht, Knud. 2000. When subjects behave like objects: an analysis of the merging of S and O in sentence-focus constructions across languages. *Studies in Language* 24.611–82.
- Lambrecht, Knud, and Kevin Lemoine. 2005. Definite null objects in (spoken) French: a Construction-Grammar account. *Grammatical Constructions: Back to the Roots*, ed. Mirjam Fried and Hans C. Boas, 13–55. Amsterdam: John Benjamins.
- Lambrecht, Knud, and Maria Polinsky. 1997. Typological variation in sentence focus constructions. *CLS 33: Papers from the Panels*, ed. Kora Singer, Randall Eggert, and Gregory Anderson, 189–206. Chicago: Chicago Linguistic Society.
- Lambton, Ann K. S. 1957. *Persian Grammar*. Cambridge: Cambridge University Press.
- Langacker, Ronald W. 1974. Movement rules in functional perspective. *Language* 50.630–64.
- Langacker, Ronald W. 1975. Functional stratigraphy. *Papers from the Parasession on Functionalism, Eleventh Regional Meeting of the Chicago Linguistic Society*, ed. Robin E. Grossman, L. James San, and Timothy J. Vance, 351–97. Chicago: Chicago Linguistic Society.
- Langacker, Ronald W. 1987. *Foundations of Cognitive Grammar*, vol. I: *Theoretical Prerequisites*. Stanford: Stanford University Press.
- Langacker, Ronald W. 1991. *Foundations of Cognitive Grammar* vol. II: *Descriptive Application*. Stanford: Stanford University Press.
- Langacker, Ronald W. 1993. Reference point constructions. *Cognitive Linguistics* 4.1–38.
- Langacker, Ronald W. 2008. *Cognitive Grammar: A Basic Introduction*. Oxford: Oxford University Press.
- Langdon, Margaret, and Pamela Munro. 1979. Subject and (switch-)reference in Yuman. *Folia Linguistica* 13.321–44.
- Lanz, Linda A. 2010. A grammar of Inupiaq morphosyntax. Ph.D. dissertation, Rice University.
- Laughlin, Robert M. 1977. *Of Cabbages and Kings: Tales from Zinacantán*. (Smithsonian Contributions to Anthropology, 23.) Washington, D.C.: Smithsonian.
- Laughren, Mary. 1989. The configurationality parameter and Warlpiri. *Configurationality: The Typology of Asymmetries*, ed. László Marácz and Peter Muysken, 319–53. Dordrecht: Foris.
- Launey, Michel. 1994. *Une grammaire onmiprédicative: essai sur la morphosyntaxe du nahuatl classique*. Paris: CNRS Éditions.
- Launey, Michel. 2003. *Awna parikwaki: introduction à la langue palikur de Guyane et de l'Amapá*. Montpellier: IRD Éditions.

- Lazard, Gilbert. 1975. La catégorie de l'éventuel. *Mélanges linguistiques offerts à Émile Benveniste*, ed. Société de linguistique, 347–58. Leuven: Peeters.
- Lazard, Gilbert. 1992. *A Grammar of Contemporary Persian*, trans. Shirley A. Lyon. Costa Mesa, Calif.: Mazda Publishers.
- Lee, Kee-Dong. 1975. *Kusaiean Reference Grammar*. Honolulu: University Press of Hawaii.
- Lefebvre, Claire. 2004. Coordinating constructions in Fongbe with reference to Haitian Creole. *Coordinating Constructions*, ed. Martin Haspelmath, 123–64. Amsterdam: John Benjamins.
- Lehmann, Christian. 1982. Universal and typological aspects of agreement. *Apprehension: Das sprachliche Erfassen von Gegenständen*, vol. II, ed. Hansjakob Seiler and Franz Josef Stachowiak, 201–67. Tübingen: Gunter Narr.
- Lehmann, Christian. 1984. *Der Relativsatz: Typologie seiner Strukturen, Theorie seiner Funktionen, Kompendium seiner Grammatik*. Tübingen: Gunter Narr.
- Lehmann, Christian. 1986. On the typology of relative clauses. *Linguistics* 24.663–80.
- Lehmann, Christian. 2002. *Thoughts on Grammaticalization: A Programmatic Sketch*, vol. I. (Arbeitspapiere des Seminars für Sprachwissenschaft der Universität Erfurt, 9.) Erfurt: Seminar für Sprachwissenschaft der Universität. (Originally published as *Arbeiten des Kölner Universalien-Projekts*, 48. Cologne: Institut für Sprachwissenschaft, 1982. Revised edition published by LINCOM Europa, Munich, 1995.)
- Lehmann, Walter. 1920. *Zentral-Amerika*, vol. I: *Die Sprachen Zentral-Amerikas*, i. Berlin: Riemer.
- Leko, Nedžad. 2000. Syntax of noun headed structures in Serbo-Croatian and corresponding phrasal structures in English. Ph.D. dissertation, Indiana University. Distributed by UMI, Ann Arbor, reference 86-28003.
- Levin, Beth. 1993. *English Verb Classes and Alternations*. Chicago: University of Chicago Press.
- Levin, Beth. 2015. Verb classes within and across languages. *Valency Classes: A Comparative Handbook*, vol. II: *Case Studies from Austronesia and the Pacific, the Americas, and Theoretical Outlook*, ed. Bernard Comrie and Andrej Malchukov, 1627–70. Berlin: de Gruyter.
- Levin, Beth, and Malka Rappaport Hovav. 2013. Lexicalized meaning and manner/result complementarity. *Studies in the Composition and Decomposition of Event Predicates*, ed. Boban Arsenijević, Berit Gehrke, and Rafael Marín, 49–70. Dordrecht: Springer.
- Lewis, G. L. 1967. *Turkish Grammar*. Oxford: Oxford University Press.
- Li, Charles, and Sandra A. Thompson. 1978. Relativization strategies in Wappo. *Proceedings of the Fourth Annual Meeting of the Berkeley Linguistics Society*, ed. Jeri J. Jaeger, Anthony C. Woodbury et al., 106–13. Berkeley: Berkeley Linguistics Society.
- Li, Charles, and Sandra A. Thompson. 1981. *Mandarin Chinese: A Functional Reference Grammar*. Berkeley and Los Angeles: University of California Press.
- Li, Charles, and Sandra A. Thompson. 1984. Mandarin. *Interrogativity: A Colloquium on the Grammar, Typology and Pragmatics of Questions in Seven Diverse Languages*, ed. William S. Chisholm, Jr., 47–61. Amsterdam: John Benjamins.
- Lichtenberk, Frantisek. 1983a. Relational classifiers. *Lingua* 60.147–76.
- Lichtenberk, Frantisek. 1983b. *A Grammar of Manam*. (Oceanic Linguistics Special Publication, 18.) Honolulu: University of Hawaii Press.

- Lichtenberk, Frantisek. 1985. Multiple uses of reciprocal constructions. *Australian Journal of Linguistics* 5.19–41.
- Lichtenberk, Frantisek. 1995. Apprehensional epistemics. *Modality in Grammar and Discourse*, ed. Joan Bybee and Suzanne Fleischman, 293–327. Amsterdam: John Benjamins.
- Lichtenberk, Frantisek. 2000. Inclusory pronominals. *Oceanic Linguistics* 39.1–52.
- Lin, You-Min. 2016. Chinese constructions in secondary predication: historical and typological perspectives. Ph.D. dissertation, University of New Mexico.
- Lister-Turner, R., and J. B. Clark. 1930. *Revised Motu Grammar and Vocabulary*. Port Moresby: Edward G. Baker, Government Printer.
- Loeb-Diehl, Flora. 2005. The typology of manner expressions. Ph.D. dissertation, Radboud Universiteit Nijmegen.
- Lord, Carol. 1976. Evidence for syntactic reanalysis: from verb to complementizer in Kwa. *Papers from the Parasession on Diachronic Syntax, Chicago Linguistic Society*, ed. Sanford B. Steever, Carol A. Walker, and Salikoko S. Mufwene, 179–91. Chicago: Chicago Linguistic Society.
- Lorimer, David Lockhart Robinson. 1935. *The Burushaski Language* (3 vols.). Lisse: The Peter de Ridder Press.
- Louagie, Dana, and Jean-Christophe Verstraete. 2016. Noun phrase constituency in Australian languages: a typological study. *Linguistic Typology* 20.25–80.
- Luraghi, Silvia. 2001. Syncretism and the classification of semantic roles. *Sprachtypologie und Universalienforschung* 54.35–51.
- Lutkat, Florence-Silvia, and Cornelius Hasselblatt. 1993. *Estnisch intensiv: Lehrbuch der estnischen Sprache*. Hamburg: Bibliotheca Baltica.
- Lyngfelt, Benjamin. 2012. Re-thinking FNI: on null instantiation and control in Construction Grammar. *Constructions and Frames* 4.1–23.
- MacCana, Proinsias. 1973. On Celtic word order and the Welsh ‘abnormal’ sentence. *Iriu* 24.90–120.
- MacDonald, Lorna. 1990. *A Grammar of Taya*. Berlin: Mouton de Gruyter.
- MacKay, Carolyn J. 1999. *A Grammar of Misantla Totonac*. Salt Lake City: University of Utah Press.
- Malandra, Alfred. 1952. *A New Acholi Grammar*. Kampala, Uganda: Eagle Language Study Series.
- Malchukov, Andrej L. 2004. Towards a semantic typology of adversative and contrast marking. *Journal of Semantics* 21.177–98.
- Malchukov, Andrej L. 2005. Case pattern splits, verb types and construction competition. *Competition and Variation in Natural Languages: The Case for Case*, ed. Mengistu Amberber and Helen de Hoop, 73–117. Amsterdam: Elsevier.
- Malchukov, Andrej L., and Bernard Comrie (eds.). 2015. *Valency Classes in the World’s Languages* (2 vols.). Berlin: Mouton De Gruyter.
- Malchukov, Andrej, Martin Haspelmath, and Bernard Comrie. 2010. Ditransitive constructions: a typological overview. *Studies in Ditransitive Constructions: A Comparative Handbook*, ed. Andrej Malchukov, Martin Haspelmath, and Bernard Comrie, 1–64. Berlin: Mouton de Gruyter.
- Mallinson, Graham, and Barry Blake. 1981. *Language Typology*. Amsterdam: North-Holland.
- Marnita, Rina A. S. 1996. Classifiers in Minangkabau. MA thesis, Australian National University.

- Masica, Colin. 1976. *Defining a Linguistic Area: South Asia*. Chicago: University of Chicago Press.
- Maslova, Elena. 2003. *Tundra Yukaghir*. Munich: LINCOM Europa.
- Maslova, Elena. 2008. Reflexive encoding of reciprocity: cross-linguistic and language-internal variation. *Reciprocals and Reflexives: Theoretical and Typological Explorations*, ed. Ekkehard König and Volker Gast, 225–57. Berlin: Mouton de Gruyter.
- Maslova, Elena, and Giuliano Bernini. 2006. Sentence topics in the languages of Europe and beyond. *Pragmatic Organization of Discourse in the Languages of Europe*, ed. Giuliano Bernini and Marcia L. Schwartz, 67–120. Berlin: Mouton de Gruyter.
- Mason, J. Alden. 1916. The Mutsun dialect of Costanoan based on the vocabulary of de la Cuesta. *University of California Papers on American Anthropology and Ethnology* 11.399–472.
- Mason, J. Alden. 1918. The language of the Salinan Indians. *University of California Publications in American Archeology and Ethnology* 14.1–154.
- Matisoff, James. 1969. Verb concatenation in Lahu: the syntax and semantics of ‘simple’ juxtaposition. *Acta Linguistica Hafniensa* 12:69–120.
- Matsumoto, Yo. 1996. *Complex Predicates in Japanese: A Syntactic and Semantic Study of the Notion ‘Word’*. Stanford: Center for the Study of Language and Information.
- Matsumoto, Yoshiko. 1989. Japanese-style noun modification ... in English. *Proceedings of the Fifteenth Annual Meeting of the Berkeley Linguistics Society*, ed. Kira Hall, Michael Meacham, and Richard Shapiro, 226–37. Berkeley: Berkeley Linguistics Society.
- Matsumoto, Yoshiko. 1997. *Noun Modifying Constructions in Japanese: A Frame-Semantic Approach*. (Studies in Language Companion Series, 35.) Amsterdam: John Benjamins.
- Matsumoto, Yoshiko, Bernard Comrie, and Peter Sells. 2017. Noun-modifying clause constructions in languages of Eurasia: rethinking theoretical and geographical boundaries. *Noun-Modifying Clause Constructions in Languages of Eurasia: Rethinking Theoretical and Geographical Boundaries*, ed. Yoshiko Matsumoto, Bernard Comrie, and Peter Sells, 3–21. Amsterdam: John Benjamins.
- Matthews, Peter H. 1981. *Syntax*. Cambridge: Cambridge University Press.
- Matthews, Stephen, and Virginia Yip. 1994. *Cantonese: A Comprehensive Grammar*. London: Routledge.
- Mauri, Caterina, Eugenio Goria, and Ilaria Fiorentini. 2019. Non-exhaustive lists in spoken language: a construction grammatical account. *Constructions and Frames* 11.290–316.
- Maxwell, Daniel Newhall. 1979. Strategies of relativization and NP accessibility. *Language* 55.352–71.
- McCawley, James D. 1998. *The Syntactic Phenomena of English*, 2nd edition. Chicago: University of Chicago Press.
- McGregor, R. S. 1972. *Outline of Hindi Grammar*. Oxford: Clarendon Press.
- McGregor, William B. 1990. *A Functional Grammar of Gooniyandi*. Philadelphia: John Benjamins Publishers.
- McGregor, William B. 1997. Functions of noun phrase discontinuity in Gooniyandi. *Functions of Language* 4.83–114.
- McLendon, Sally. 1975. *A Grammar of Eastern Pomo*. Berkeley: University of California Press.

- McLendon, Sally. 1978. Ergativity, case, and transitivity in Eastern Pomo. *International Journal of American Linguistics* 44.1–9.
- Merlan, Francesca. 1976. Noun incorporation and discourse reference in modern Nahuatl. *International Journal of American Linguistics* 42.177–91.
- Merlan, Francesca. 1994. *A Grammar of Wardaman*. Berlin: Mouton de Gruyter.
- Meyer-Bahlburg, Hilke. 1972. *Studien zur Morphologie und Syntax des Musgu*. Hamburg: Helmut Buske.
- Michaelis, Laura. 2001. Exclamative constructions. *Language Typology and Language Universals*, ed. Martin Haspelmath, Ekkehard König, Wulf Österreicher, and Wolfgang Raible, 1038–50. Berlin: Mouton de Gruyter.
- Michaelis, Laura A. 2004. Type shifting in construction grammar: an integrated approach to aspectual coercion. *Cognitive Linguistics* 15.1–67.
- Michaelis, Laura, and Knud Lambrecht. 1996. The exclamative sentence type in English. *Conceptual Structure, Discourse and Language*, ed. Adele Goldberg, 375–89. Stanford: Center for the Study of Language and Information.
- Mikami, Kyoko. 2006. Nihongo-no giongo/gitaigo-ni okeru imi-no kakuktyoo: Konsekitiki ninti/yokiteki ninti-no kanten-kara. [Semantic extensions in Japanese mimetics: from the perspectives of vestigial/prospective cognitions]. *Nitigo/ninibungaku kenkyuu* [Studies on Japanese Language and Literature] 57(1).199–217.
- Miller, Jim. 1993. The grammar of Scottish English. *Real English: The Grammar of English in the British Isles*, ed. James Milroy and Lesley Milroy, 99–138. London: Longman.
- Miller, Jim. 2006. Focus in the languages of Europe. *Pragmatic Organization of Discourse in the Languages of Europe*, ed. Giuliano Bernini and Marcia L. Schwartz, 121–214. Berlin: Mouton de Gruyter.
- Mistry, P. J. 1976. Subject in Gujarati: an examination of verb-agreement phenomena. *The Notion of Subject in South Asian Languages*. (South Asian Studies, 2.) Madison: University of Wisconsin.
- Mithun, Marianne. 1984a. The evolution of noun incorporation. *Language* 60.847–94.
- Mithun, Marianne. 1984b. How to avoid subordination. *Proceedings of the Tenth Annual Meeting of the Berkeley Linguistics Society*, ed. Claudia Brugman et al., 493–523. Berkeley: Berkeley Linguistics Society.
- Mithun, Marianne. 1988. The grammaticalization of coordination. *Clause Combining in Grammar and Discourse*, ed. John Haiman and Sandra A. Thompson, 331–59. Amsterdam: John Benjamins.
- Mithun, Marianne. 1991. Active/agentive case marking and its motivations. *Language* 67:510–46.
- Mithun, Marianne. 1993. ‘Switch-reference’: clause combining in Central Pomo. *International Journal of American Linguistics* 59.119–37.
- Mithun, Marianne. 1996. Multiple reflections of inalienability in Mohawk. *The Grammar of Inalienability: A Typological Perspective on Body Part Terms and the Part–Whole Relation*, ed. Hilary Chappell and William McGregor, 633–49. Berlin: Mouton de Gruyter.
- Mithun, Marianne. 2006. Threads in the tapestry of syntax: complementation and Mohawk. *Proceedings of the Forty-second Meeting of the Chicago Linguistic Society*, ed. Jacqueline Bunting, Sapna Desai, Robert Peachey, Christopher Straight, and Zuzana Tomková, 213–38. Chicago: Chicago Linguistic Society.

- Mithun, Marianne, and Wallace Chafe. 1999. What are S, A and O? *Studies in Language* 23.569–96.
- Mohanan, Tara. 1994. *Argument Structure in Hindi*. Stanford: CSLI Publications.
- Mondloch, James L. 1978. *Basic Quiché Grammar*. (Institute for Mesoamerican Studies, 2.) Albany: Institute for Mesoamerican Studies.
- Moravcsik, Edith A. 1978. On the distribution of ergative and accusative patterns. *Lingua* 45.233–79.
- Moreno, Martino Mario. 1955. *Il Somalo della Somali*. Rome: Istituto Poligrafico dello Stato.
- Mosel, Ulrike. 2004. Complex predicates and juxtapositional constructions in Samoan. *Complex Predicates in Oceanic Languages*, ed. Isabelle Bril and Françoise Ozanne-Rivierre, 263–96. Berlin: Mouton de Gruyter.
- Mosel, Ulrike, and Even Hovdhaugen. 1992. *Samoan Reference Grammar*. Oslo: Scandinavian University Press.
- Mous, Maarten. 2004. The grammar of conjunctive and disjunctive coordination in Iraqw. *Coordinating Constructions*, ed. Martin Haspelmath, 109–22. Amsterdam: John Benjamins.
- Moyse-Faurie, Claire. 2013. Xârâcùù valency patterns. *Valency Patterns Leipzig*, ed. Iren Hartmann, Martin Haspelmath, and Bradley Taylor. Leipzig: Max Planck Institute for Evolutionary Anthropology. Available at <http://valpal.info/languages/xaracuu/examples/6>, accessed August 12, 2017.
- Mulder, Jean Gail. 1994. *Ergativity in Coast Tsimshian (Sm'algyax)*. (University of California Publications in Linguistics, 124.) Berkeley: University of California Press.
- Munro, Pamela (ed.). 1980. *Studies of Switch Reference*. (UCLA Papers in Syntax, 8.) Los Angeles: UCLA Department of Linguistics.
- Munro, Pamela. 1982. On the transitivity of ‘say’ verbs. *Studies in Transitivity* (Syntax and Semantics, 15), ed. Paul Hopper and Sandra A. Thompson, 301–18. New York: Academic Press.
- Munro, Pamela, and Lynn Gordon. 1982. Syntactic relations in Western Muskogean: a typological perspective. *Language* 58.81–115.
- Myhill, John, and Zhiqun Xing. 1996. Towards an operational definition of contrast. *Studies in Language* 20.303–60.
- Naess, Åshild. 2009. How transitive are EAT and DRINK? *The Linguistics of Eating and Drinking*, ed. John Newman, 27–43. Amsterdam: John Benjamins.
- Naït-Zerrad, Kamal. 2001. *Grammaire moderne du kabyle*. Paris: Karthala.
- Nedjalkov, Vladimir P. 1976. Diathesen und Satzstruktur im Tschuktschischen. *Satzstruktur und Genus verbi*, ed. Ronald Lötzsch and Rudolf Růžička, 181–211. Berlin: Akademie-Verlag.
- Nedjalkov, Vladimir P., and G. G. Silnitsky. 1973. The typology of morphological and lexical causatives. *Trends in Soviet Theoretical Linguistics*, ed. Ferenc Keiper, 1–32. Dordrecht: Reidel.
- Nedyalkov, Igor. 1994. Evenki. *Typological Studies in Negation*, ed. Peter Kahrel and René van den Berg, 1–34. Amsterdam: John Benjamins.
- Newman, Paul. 1970. *A Grammar of Tera*. (University of California Publications in Linguistics, 57.) Berkeley: University of California Press.
- Newman, Paul. 1974. *The Kanakuru Language*. Leeds: The Institute of Modern English Language Studies.

- Newman, Paul. 2000. *The Hausa Language: An Encyclopedic Reference Grammar*. New Haven: Yale University Press.
- Newman, Paul. 2001. Are ideophones really as weird and extra-systematic as linguists make them out to be? *Ideophones*, ed. F. K. Erhard Voeltz and Christa Kilian-Hatz, 251–58. Amsterdam: John Benjamins.
- Newman, Stanley. 1944. *Yokuts Language of California*. (Viking Fund Publications in Anthropology, 2.) New York: Viking Fund.
- Nichols, Johanna. 1978. Secondary predicates. *Proceedings of the Fourth Annual Meeting of the Berkeley Linguistics Society*, ed. Jeri Jaeger, Anthony Woodbury, Farrell Ackerman, et al., 114–27. Berkeley: Berkeley Linguistics Society.
- Nichols, Johanna. 1984. Direct and oblique objects in Chechen-Ingush and Russian. In *Objects*, ed. Frans Plank, 183–209. New York: Academic Press.
- Nichols, Lynn. 1990. Direct quotation and switch reference in Zuni. *Proceedings of the Sixteenth Annual Meeting of the Berkeley Linguistics Society, Special Session on General Topics in American Indian Linguistics*, ed. David J. Costa, 91–100. Berkeley: Berkeley Linguistics Society.
- Nichols, Lynn. 2000. Rethinking switch reference. *Papers in Honor of Ken Hale* (Working Papers on Endangered and Less Familiar Languages, 1), ed. Andrew Carnie, Eloise Jelinek, and Mary Ann Willie, 5–18. Cambridge, Mass.: MITWPL, Department of Linguistics, Massachusetts Institute of Technology.
- Nivre, Joakim. 2015. Towards a universal grammar for natural language processing. *Computational Linguistics and Intelligent Text Processing*, ed. Alexander Gelbukh, 3–16. New York: Springer.
- Nivre, Joakim, Marie-Catherine de Marneffe, Filip Ginter, Yoav Goldberg, Jan Hajíč, Christopher D. Manning, Ryan McDonald, Slav Petrov, Sampo Pyysalo, Natalia Silveira, Reut Tsarfaty, and Daniel Zeman. 2016. Universal dependencies v1: a multilingual treebank collection. *Proceedings of the 10th International Conference on Language Resources and Evaluation*, 1659–66. European Language Resources Association.
- Noonan, Michael. 2007. Complementation. *Language Typology and Syntactic Description*, vol. II: *Complex Constructions*, 2nd edition, ed. Timothy Shopen, 52–150. Cambridge: Cambridge University Press. (Slightly revised version from the 1st edition [1985], 42–140.)
- Noonan, Michael. 1992. *A Grammar of Lango*. Berlin: Mouton.
- Norman, William. 1976. Quiché text. *Mayan Texts I* (IJAL Native American Texts Series, vol. 1, no. 1), ed. Louanna Furbee-Losee, 40–60. Chicago: University of Chicago Press.
- Nuckolls, Janis B. 2001. Ideophones in Pastaza Quechua. *Ideophones*, ed. F. K. Erhard Voeltz and Christa Kilian-Hatz, 271–85. Amsterdam: John Benjamins.
- Oates, Lynette Francis. 1964. *A Tentative Description of the Gunwinggu Language (of Western Arnhem Land)*. (Oceania Linguistic Monographs, 10.) Sydney: University of Sydney.
- Ohori, Toshio. 1995. Problems of Japanese IHRCs: argument linking and reference tracking. *Language, Information and Text* 2.89–108. University of Tokyo.
- Ohori, Toshio. 2001. Clause integration as grammaticalization: a case from Japanese *Tokoro*-complements. *Cognitive-Functional Linguistics in an East Asian Context*, ed. Shigeru Sato and Kaoru Horie, 279–301. Tokyo: Kuroshio.

- Okell, John. 1969. *A Reference Grammar of Colloquial Burmese, Parts I and II*. London: Oxford University Press.
- Olawsky, Knut J. 2006. *A Grammar of Urarina*. (Mouton Grammar Library, 37.) Berlin: Mouton de Gruyter.
- Osborne, C. R. 1974. *The Tiwi Language*. Canberra: Australian Institute of Aboriginal Studies.
- Owens, Jonathan. 1985. *A Grammar of Harar Oromo (Northeastern Ethiopia)*. Hamburg: Buske.
- Palmer, Bill. 2009. *Kokota Grammar*. (Oceanic Linguistics Special Publications, 35.) Honolulu: University of Hawaii Press.
- Palmer, F. R. 2001. *Mood and Modality*, 2nd edition. Cambridge: Cambridge University Press.
- Parker, Elizabeth. 1986. Mundani pronouns. *Pronominal Systems*, ed. Ursula Wiesemann, 131–65. Tübingen: Gunter Narr.
- Patz, Elizabeth. 2002. *A Grammar of the Kuku Yalanji Language of North Queensland*. (Pacific Linguistics, 527.) Canberra: Research School of Pacific Studies, Australian National University.
- Pawley, Andrew. 1993. A language which defies description by ordinary means. *The Role of Theory in Language Description*, ed. William A. Foley, 87–129. Berlin: Mouton de Gruyter.
- Payne, Doris, and Immanuel Barshi (ed.). 1999. *External Possession*. (Typological Studies in Language, 39.) Amsterdam: John Benjamins.
- Payne, Doris L., and Thomas E. Payne. 1989. Yagua. *Handbook of Amazonian Languages 2*, ed. Desmond C. Derbyshire and Geoffrey K. Pullum, 249–474. Berlin: Mouton de Gruyter.
- Payne, John R. 1985. Complex phrases and complex sentences. *Language Typology and Syntactic Description*, vol. II: *Complex Constructions*, ed. Timothy Shopen, 3–41. Cambridge: Cambridge University Press.
- Payne, Thomas E. 1997. *Describing Morphosyntax: A Guide for Field Linguists*. Cambridge: Research School of Pacific Studies, Cambridge University Press.
- Pensalfini, Robert. 2011. *Jingulu Texts and Dictionary*. (Pacific Linguistics, 620.) Canberra: Research School of Pacific Studies, Australian National University.
- Penzl, Herbert. 1955. *A Grammar of Pashto*. Washington, D.C.: American Council of Learned Societies.
- Pepper, Steve. 2020. The typology and semantics of binominal lexemes: noun–noun compounds and their functional equivalents. Ph.D. thesis, University of Oslo.
- Persson, Andrew M., and Janet R. Persson. 1991. *Mödö-English Dictionary with Grammar*. (Bilingual Dictionaries of Sudan, 1.) Nairobi, Kenya: Summer Institute of Linguistics – Sudan.
- Peterson, David A. 2007. *Applicative Constructions*. Oxford: Oxford University Press.
- Pike, Kenneth. 1967. Grammar as wave. *Report of the 18th Annual Round Table Meeting on Linguistics and Language Studies* (Georgetown University Monographs on Language and Linguistics, 20), ed. Edward L. Blansitt, Jr., 1–14. Washington, D.C.: Georgetown University Press.
- Pitkin, Harvey. 1984. *Wintu Grammar*. (University of California Publications in Linguistics, 94.) Berkeley and Los Angeles: University of California Press.

- Pittier de Fabrega, H. F. 1898. *Die Sprache der Bribri-Indianer in Costa Rica*. Vienna: Kaiserliche Akademie der Wissenschaften.
- Platero, Paul. 1974. The Navajo relative clause. *International Journal of American Linguistics* 40.202–46.
- Polinsky, Maria. 2013. Applicative constructions. *The World Atlas of Language Structures Online*, ed. Matthew S. Dryer and Martin Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology. Available at <http://wals.info/chapter/109>, accessed September 5, 2017.
- Polinsky, Maria. 2017. Antipassive. *The Oxford Handbook of Ergativity*, ed. Jessica Coon, Diane Massam, and Lisa deMena Travis, 308–31. Oxford: Oxford University Press.
- Poulos, George, and Sonja E. Bosch. 1997. *Zulu*. Munich: LINCOM Europa.
- Price, Glanville. 1971. *The French Language: Present and Past*. London: Edward Arnold.
- Prince, Ellen F. 1978. A comparison of WH-clefts and *it*-clefts in discourse. *Language* 54.883–906.
- Prince, Ellen F. 1992. The ZPG letter: subjects, definiteness and information-status. *Discourse Description: Diverse Linguistic Analyses of a Fund-Raising Text*, ed. William C. Mann and Sandra A. Thompson, 295–325. Amsterdam: John Benjamins.
- Pulkina, I., and E. Zakhava-Nekrasova. n.d. *Russian*. Moscow: Progress.
- Pulte, William. 1971. Gapping and word order in Quechua. *Papers from the Seventh Regional Meeting, Chicago Linguistic Society*, 193–97. Chicago: Chicago Linguistic Society.
- Pustet, Regina (transl. and ed.). 2021. *Lakota Texts: Narratives of Lakota Life and Culture in the Twentieth Century*. Lincoln: University of Nebraska Press.
- Quick, Phil. 2007. *A Grammar of the Pendau Language of Central Sulawesi, Indonesia*. (Pacific Linguistics, PL590.) Canberra: Research School of Pacific Studies, Australia National University.
- Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik. 1985. *A Comprehensive Grammar of the English Language*. London: Longman.
- Rambaud, Jean-Baptiste. 1903. *La langue wolof*. Paris: Imprimerie Nationale.
- Rappaport Hovav, Malka, and Beth Levin. 2001. An event structure account of English resultatives. *Language* 77.766–97.
- Raz, Shlomo. 1983. *Tigre Grammar and Texts*. (Afroasiatic Dialects, 4.) Malibu: Undena Press.
- Reesink, Ger. 1980. *Structures and Their Functions in Usan*. Amsterdam: John Benjamins.
- Reesink, Ger. 2014. Topic management and clause combination in the Papuan language Usan. *Information Structure and Reference Tracking in Complex Sentences*, ed. Rik van Gijn, Jeremy Hammond, Dejan Matić, Saskia van Putten, and Ana Vilacy Galucio, 231–61. Amsterdam: John Benjamins.
- Refsing, K. 1986. *The Ainu Language: The Morphology and Syntax of the Shizunai Dialect*. Aarhus: Aarhus University Press.
- Regier, Terry, Naveen Khetarpal, and Asifa Majid. 2013. Inferring semantic maps. *Linguistic Typology* 17.89–105.
- Reh, Mechthild (ed.). 1998. *Experiens-Kodierung in afrikanischen Sprachen typologisch gesehen: Formen und ihre Motivierung*. Hamburg: Universität Hamburg, Institut für Afrikanistik und Äthopistik.

- Rehg, Kenneth L. 1981. *Ponapean Reference Grammar*. Honolulu: University Press of Hawaii.
- Reinhart, Tanya. 1984. Principles of gestalt perception in the temporal organization of narrative texts. *Linguistics* 22.779–809.
- Rheinfelder, Hans. 1967. *Altfranzösische Grammatik*, vol II: *Formenlehre und Syntax*. Munich: Max Hueber.
- Rhodes, Richard. 1977. Semantics in a relational grammar. *Papers from the Thirteenth Regional Meeting, Chicago Linguistic Society*, ed. Woodford A. Beach, Samuel E. Fox, and Shulamith Philosoph, 503–14. Chicago: Chicago Linguistic Society.
- Rice, Keren. 1989. *A Grammar of Slave*. Berlin: Mouton de Gruyter.
- Richter genannt Kemmermann, Doris. 2015. *A Grammar of Mbembe*. Leiden: Brill.
- Riese, Timothy. 2001. *Vogul*. Munich: LINCOM Europa.
- Roberts, John R. 1987. *Amele*. London: Croom Helm.
- Robins, R. H. 1958. *The Yurok Language: Grammar, Texts, Lexicon*. (University of California Publications in Linguistics, 15.) Berkeley and Los Angeles: University of California Press.
- Rogers, Phillip. 2016. Illustrating the prototype structures of parts of speech: a multi-dimensional scaling analysis. Master's thesis, Department of Linguistics, University of New Mexico.
- Romaine, Suzanne. 1982. *Sociohistorical Linguistics*. Cambridge: Cambridge University Press.
- Rood, David, and Allan R. Taylor. 1976. *Beginning Lakota*, vols. I–II. Boulder: University of Colorado Lakota Project.
- Rooth, Mats. 1992. A theory of focus interpretation. *Natural Language Semantics* 1.75–116.
- Rosenbaum, Harvey. 1977. Zapotec gapping as counterevidence of some universal proposals. *Linguistic Inquiry* 8.379–95.
- Ross, John R. 1967. Constraints on variables in syntax. Ph.D. dissertation, Massachusetts Institute of Technology.
- Ross, Malcolm. 1980. Some elements of Vanimo, a New Guinea tone language. *Papers in New Guinea Linguistics*, 20, 77–109. (Pacific Linguistics, A56.) Canberra: Research School of Pacific Studies, Australian National University.
- Ross, Malcolm, and John Natu Paol. 1978. *A Waskia Grammar Sketch and Vocabulary*. (Pacific Linguistics, B56.) Canberra: Research School of Pacific Studies, Australian National University.
- Rost, Reinhold (ed.). 1887. *Grammaire albanaise, by P. W.* (Trübner's Collection of Simplified Grammars of the Principal Asiatic and European Languages.) London: Trübner.
- Rowlands, Evan Colyn. 1969. *Yoruba*. Sevenoaks, Kent: Hodder and Stoughton.
- Rude, Noel. 1991. Verbs to promotional suffixes in Sahaptian and Klamath. *Approaches to Grammaticalization*, vol. II, ed. Elizabeth Traugott and Paul Hopper, 183–99. Amsterdam: John Benjamins.
- Rude, Noel. 1999. External possession in Sahaptian. *External Possession*, ed. Doris L. Payne and Immanuel Barshi, 403–27. Amsterdam: John Benjamins.
- Ruppenhofer, Josef, Michael Ellsworth, Miriam R. L. Petrucci, Christopher R. Johnson, and Jan Scheffczyk. 2010. *FrameNet II: Extended Theory and Practice*, edition of September 14, 2010. Available at https://framenet.icsi.berkeley.edu/fndrupal/the_book, accessed October 7, 2012.

- Ruwet, Nicolas. 1991. *Syntax and Human Experience*, ed. and trans. John Goldsmith. Chicago: University of Chicago Press.
- Sadock, Jerrold M., and Arnold Zwicky. 1985. Speech act distinctions in syntax. *Language Typology and Syntactic Description*, vol. I: *Clause Structure*, ed. Timothy Shopen, 155–96. Cambridge: Cambridge University Press.
- Sadowska, Iwona. 2012. *Polish: A Comprehensive Grammar*. London: Routledge.
- Saeed, John. 1999. *Somali*. Amsterdam: John Benjamins.
- Saksena, Anuradha. 1980. The affected agent. *Language* 56.812–26.
- Salo, Merja. 2011. Meteorological verbs in Uralic languages – are there any impersonal structures to be found? *Impersonal Constructions: A Cross-Linguistic Perspective*, ed. Andrej Malchukov and Anna Siewierska, 395–438. Amsterdam: John Benjamins.
- Saltarelli, Mario. 1988. *Basque*. (Croom Helm Descriptive Grammars.) London: Croom Helm.
- Sand, Diane E. Z. 1971. Agreement of the predicate with quantitative subjects in Serbo-Croatian. Ph.D. dissertation, University of Pennsylvania.
- Sanders, Gerald A. 1976. A functional typology of elliptical coordinations. *Current Themes in Linguistics: Bilingualism, Experimental Linguistics, and Language Typologies*, ed. Fred R. Eckman, 241–70. Washington, D.C.: Hemisphere.
- Sapir, Edward. 1921. *Language*. New York: Harcourt, Brace & World.
- Sasse, Hans-Jürgen. 1981. ‘Basic word order’ and functional sentence perspective in Boni. *Folia Linguistica* 15.253–90.
- Sasse, Hans-Jürgen. 1987. The thetic-categorical distinction revisited. *Linguistics* 25.511–80.
- Sasse, Hans-Jürgen. 1991. *Arvanitika: die albanischen Sprachreste in Griechenland*. Wiesbaden: Otto Harrassowitz.
- Sasse, Hans-Jürgen. 2006. Theticity. *Pragmatic Organization of Discourse in the Languages of Europe*, ed. Giuliano Bernini and Marcia L. Schwartz, 255–308. Berlin: Mouton de Gruyter.
- Scatton, Ernest A. 1983. *A Reference Grammar of Modern Bulgarian*. Columbus, Ohio: Slavica.
- Schachter, Paul, and Fe T. Otanes. 1972. *Tagalog Reference Grammar*. Berkeley and Los Angeles: University of California Press.
- Schachter, Paul, and Timothy Shopen. 2007. Parts of speech systems. *Language Typology and Syntactic Description*, vol. I: *Clause Structure*, 2nd edition, ed. Timothy Shopen, 1–60. Cambridge: Cambridge University Press.
- Schaefer, Ronald P. 2001. Ideophonic adverbs and manner gaps in Emai. *Ideophones*, ed. F. K. Erhard Voeltz and Christa Kilian-Hatz, 339–54. Amsterdam: John Benjamins.
- Schaub, Willi. 1985. *Babungo*. (Croom Helm Descriptive Grammars.) Dover, NH: Croom Helm.
- Schiering, René, Balthasar Bickel, and Kristine A. Hildebrandt. 2010. The prosodic word is not universal. *Journal of Linguistics* 46.657–709.
- Schiller, Eric. 1990. An autolexical account of subordinating serial constructions. Ph.D. dissertation, Department of Linguistics, University of Chicago.
- Schmerling, Susan F. 1976. *Aspects of English Sentence Stress*. Austin: University of Texas Press.

- Schultze-Berndt, Eva. 2000. *Simple and Complex Verbs in Jaminjung: A Study of Event Categorisation in an Australian Language*. Nijmegen: Max Planck Institute for Psycholinguistics.
- Schultze-Berndt, Eva, and Nikolaus P. Himmelmann. 2004. Depictive secondary predicates in crosslinguistic perspective. *Linguistic Typology* 8.59–131.
- Schultze-Berndt, Eva, and Candide Simard. 2012. Constraints on noun phrase discontinuity in an Australian language: the role of prosody and information structure. *Linguistics* 50.1015–58.
- Schumacher, Rolf. 1977. *Untersuchungen zum Absolutiv im modernen Hindi: ein Beitrag zur semantischen Syntax*. (Europäische Hochschulschriften, 27:1.) Frankfurt and Bern: Lang.
- Schütz, Albert. 1969a. *Nguna Texts*. (Oceanic Linguistics Special Publication, 4.) Honolulu: University of Hawaii Press.
- Schütz, Albert J. 1969b. *Nguna Grammar*. (Oceanic Linguistics Special Publication, 5.) Honolulu: University of Hawaii Press.
- Searle, John R. 1969. *Speech Acts: An Essay in the Philosophy of Language*. Cambridge: Cambridge University Press.
- Sebba, Mark. 1987. *The Syntax of Serial Verbs*. Amsterdam: John Benjamins.
- Seifart, Frank. 2005. The structure and use of shape-based noun classes in Miraña (north west Amazon). Ph.D. dissertation, Radboud Universiteit Nijmegen.
- Seiler, Hansjakob. 1983. *Possession as an Operational Dimension of Language*. Tübingen: Gunter Narr.
- Seiter, William J. 1979. Instrumental advancement in Niuean. *Linguistic Inquiry* 10.595–621.
- Selkirk, Elizabeth. 1977. Some remarks on noun phrase structure. *Formal Syntax*, ed. Peter W. Culicover and Adrian Akmajian, 218–36. New York: Academic Press.
- Sells, Peter. 1987. Aspects of logophoricity. *Linguistic Inquiry* 18.445–79.
- Senft, Gunter. 1996. *Classificatory Particles in Kilivila*. Oxford: Oxford University Press.
- Serzisko, Fritz. 1984. *Der Ausdruck der Possessivität im Somali*. Tübingen: Gunter Narr.
- Serzisko, Fritz. 1992. *Sprechhandlungen und Pausen*. (Linguistische Arbeiten, 282.) Tübingen: Niemeyer.
- Shenhar, Tlor. 2013. Verb-pronoun complex predication constructions: semantic patterns and historical origins. MS, University of New Mexico.
- Shibatani, Masayoshi. 1985. Passive and related constructions: a prototype analysis. *Language* 61.821–48.
- Shibatani, Masayoshi, and Prashant Pardeshi. 2002. The causative continuum. *The Grammar of Causation and Interpersonal Manipulation*, ed. Masayoshi Shibatani, 157–94. Amsterdam: John Benjamins.
- Sibomana, Leo. 1981/82. Tarok III: Das Verbalsystem und der Satz. *Afrika und Übersee* 64(2).237–47.
- Siewierska, Anna. 1984a. *The Passive: A Comparative Linguistic Analysis*. London: Croom Helm.
- Siewierska, Anna. 1984b. Phrasal discontinuity in Polish. *Australian Journal of Linguistics* 4.57–71.
- Siewierska, Anna. 2004. *Person*. Cambridge: Cambridge University Press.

- Siewierska, Anna. 2011. Overlap and continuity in reference impersonals: man-construction vs. third person plural-impersonal in the languages of Europe. *Impersonal Constructions: A Cross-Linguistic Perspective*, ed. Andrej Malchukov and Anna Siewierska, 57–89. Amsterdam: John Benjamins.
- Siewierska, Anna. 2013. Alignment of verbal person marking. *The World Atlas of Language Structures Online*, ed. Matthew S. Dryer and Martin Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology. Available at <http://wals.info/chapter/100>, accessed March 12, 2017.
- Siewierska, Anna, and Maria Papastathi. 2011. Towards a typology of third person plural impersonals. *Linguistics* 49.575–610.
- Simpson, Jane. 1991. *Warlpiri Morpho-Syntax: A Lexicalist Approach*. Dordrecht: Kluwer.
- Singer, Ruth. 2011. Typologising idiomticity: noun–verb idioms and their relations. *Linguistic Typology* 15.625–59.
- Sjoberg, Andrée F. 1963. *Uzbek Structural Grammar*. (Uralic and Altaic Series, 18.) Bloomington: Indiana University Press.
- Slobin, Dan I. 2004. The many ways to search for a frog: linguistic typology and the expression of motion events. *Relating Events in Narrative*, vol. II: *Typological and Contextual Perspectives*, ed. Sven Strömquist and Ludo Verhoeven, 219–57. Mahwah, NJ: Lawrence Erlbaum Associates.
- Smyth, Herbert W. 1920. *Greek Grammar*. Cambridge, Mass.: Harvard University Press.
- Smythe, W. E. 1949. Elementary grammar of the Gumbaingar language (North Coast, N.S.W.), Parts 4–5. *Oceania* 19.254–99.
- Sohn, Ho-min. 1975. *Woleaian Reference Grammar*. Honolulu: University Press of Hawaii.
- Staalsen, Philip. 1972. Clause relations in Iatmul. *Papers in New Guinea Linguistics*, 15, 45–69. (Pacific Linguistics, A31.) Canberra: Research School of Pacific Studies, The Australian National University.
- Stassen, Leon. 1985. *Comparison and Universal Grammar*. Oxford: Basil Blackwell.
- Stassen, Leon. 1997. *Intransitive Predication*. Oxford: Oxford University Press.
- Stassen, Leon. 2000. AND-languages and WITH-languages. *Linguistic Typology* 4.1–54.
- Stassen, Leon. 2009. *Predicative Possession*. Oxford: Oxford University Press.
- Steele, Susan. 1978. The category AUX as a language universal. *Universals of Human Language*, vol. III: *Word Structure*, ed. Joseph H. Greenberg, Charles A. Ferguson, and Edith A. Moravcsik, 7–46. Stanford: Stanford University Press.
- Stever, Sanford B. 1987. *The Serial Verb Formation in the Dravidian Languages*. Delhi: Motilal Banarsi Dass.
- Štekauer, Pavol, Salvador Valera, and Lívia Körtvélyessy. 2012. *Word-Formation in the World's Languages: A Typological Survey*. Cambridge: Cambridge University Press.
- Stirling, Leslie. 1993. *Switch-Reference and Discourse Representation*. Cambridge: Cambridge University Press.
- Stone, Gerald. 1993. Sorbian (Upper and Lower). *The Slavonic Languages*, ed. Bernard Comrie and Greville G. Corbett, 593–685. London: Routledge.
- Strawson, Peter F. 1964. Identifying reference and truth values. *Theoria* 30.96–118.
- Street, John C. 1963. *Khalkha Structure*. (Indiana University Publications, Uralic and Altaic Series, 24.) Bloomington: Indiana University Press.

- Stucky, Susan. 1979. Focus of contrast aspects in Makua: syntactic and semantic evidence. *Proceedings of the Fifth Annual Meeting of the Berkeley Linguistic Society*, ed. Christine Chiarello et al., 362–72. Berkeley: University of California Press.
- Sulkala, Helen, and Merja Karjalainen. 1992. *Finnish*. London: Routledge.
- Sweetser, Eve. 1990. *From Etymology to Pragmatics: Metaphorical and Cultural Aspects of Semantic Structure*. Cambridge: Cambridge University Press.
- Tagashira, Yoshiko. 1972. Relative clauses in Korean. *The Chicago Which Hunt: Papers from the Relative Clause Festival*, ed. Paul Peranteau, Judith N. Levi, and Gloria C. Phares, 215–29. Chicago: Chicago Linguistic Society.
- Takezawa, Koichi. 1993. Secondary predication and locative/goal phrases. *Japanese Syntax and Comparative Grammar*, ed. Nobuko Hasegawa, 45–77. Tokyo: Kuroso.
- Talmy, Leonard. 1972. Semantic structures in English and Atsugewi. Ph.D. dissertation, Department of Linguistics, University of California, Berkeley.
- Talmy, Leonard. 1974. Semantics and syntax of motion. *Syntax and Semantics* 4, ed. John Kimball, 181–238. New York: Academic Press.
- Talmy, Leonard. 1976. Semantic causative types. *The Grammar of Causative Constructions* (Syntax and Semantics, 6), ed. Masayoshi Shibatani, 43–116. New York: Academic Press.
- Talmy, Leonard. 1978a. Figure and ground in complex sentences. *Universals of Human Language*, vol. IV: *Syntax*, ed. Joseph H. Greenberg, Charles A. Ferguson, and Edith Moravcsik, 625–52. Stanford: Stanford University Press.
- Talmy, Leonard. 1978b. Relations between subordination and coordination. *Universals of Human Language*, vol. IV: *Syntax*, ed. Joseph H. Greenberg, Charles A. Ferguson, and Edith Moravcsik, 487–513. Stanford: Stanford University Press.
- Talmy, Leonard. 1985. Lexicalization patterns: semantic structure in lexical forms. *Language Typology and Syntactic Description*, vol. III: *Grammatical Categories and the Lexicon*, ed. Timothy Shopen, 57–149. Cambridge: Cambridge University Press.
- Talmy, Leonard. 1988/2000. Force dynamics in language and cognition. *Cognitive Science* 12.49–100. Revised and expanded version published in Leonard Talmy, *Toward a Cognitive Semantics*, vol. I: *Concept Structuring Systems*, 409–70. Cambridge, Mass.: MIT Press, 2000.
- Talmy, Leonard. 1991/2000. Path to realization – via aspect and result. In *Proceedings of the Seventeenth Annual Meeting of the Berkeley Linguistics Society*, ed. Laurel A. Sutton and Christopher Johnson with Ruth Shields, 480–519. Berkeley: Berkeley Linguistics Society. Revised and expanded version published as ‘A typology of event integration’ in Leonard Talmy, *Toward a Cognitive Semantics*, vol. II: *Typology and Process in Concept Structuring*, 213–88. Cambridge, Mass.: MIT Press, 2000.
- Tamura, Suzuko. 2000. *The Ainu Language*. Tokyo: Sanseido.
- Taoka, Chiaki. 2000. Aspect and argument structure in Japanese. Ph.D. dissertation, University of Manchester. Available at www.unm.edu/~wcroft/Papers/Taoka2000PhD.pdf.
- Tasmowski-de Ryck, Liliane, and Paul Verluyten. 1982. Linguistic control of pronouns. *Journal of Semantics* 1.323–46.
- Taylor, Charles. 1985. *Nkore-Kiga*. (Croom Helm Descriptive Grammars.) Dover, NH: Croom Helm.

- Taylor, John R. 1996. *Possessives in English: An Exploration in Cognitive Grammar*. Oxford: Oxford University Press.
- Ternes, Elmar. 1970. *Grammaire structurale du breton de L'île de Groix*. Heidelberg: Carl Winter.
- Terrill, Angela. 2004. Coordination in Lavukaleve. *Coordinating Constructions*, ed. Martin Haspelmath, 427–43. Amsterdam: John Benjamins.
- Thomas, David D. 1971. *Chrau Grammar*. (Oceanic Linguistics Special Publication, 7.) Honolulu: University of Hawaii Press.
- Thompson, Chad. 1994. Passive and inverse constructions. *Voice and Inversion*, ed. Talmy Givón, 47–63. Amsterdam: John Benjamins.
- Thompson, Chad. 1995. On the grammar of body parts in Koyukon Athapaskan. 1996. *The Grammar of Inalienability: A Typological Perspective on Body Part Terms and the Part–Whole Relation*, ed. Hilary Chappell and William McGregor, 651–76. Berlin: Mouton de Gruyter.
- Thompson, Laurence C. 1965. *A Vietnamese Reference Grammar*. Honolulu: University of Hawaii Press.
- Thompson, Sandra A., and Paul Hopper. 2001. Transitivity, clause structure, and argument structure. *Frequency and the Emergence of Linguistic Structure*, ed. Joan L. Bybee and Paul Hopper, 27–60. Amsterdam: John Benjamins.
- Thompson, Sandra A., and Robert E. Longacre. 1985. Adverbial clauses. *Language Typology and Syntactic Description*, vol. II: *Complex Constructions*, ed. Timothy Shopen, 171–234. Cambridge: Cambridge University Press.
- Thráinsson, Höskuldur. 1990. A semantic reflexive in Icelandic. *Modern Icelandic Syntax*, ed. Joan Maling and Annie Zaenen, 289–307. New York: Academic Press.
- Tiersma, Peter Meijes. 1999. *Frisian Reference Grammar*, 2nd edition. Ljouwert: Fryske Akademy.
- Tikkanen, Bertil. 1995. Burushaski converbs in their South and Central Asian areal context. *Converbs in Cross-Linguistic Perspective: Structure and Meaning of Adverbial Verb Forms – Adverbials, Participles, Gerunds*, ed. Ekkehard König and Martin Haspelmath, 487–528. Berlin: Mouton de Gruyter.
- Toivonen, Ida. 2007. Verbal agreement in Inari Saami. *Saami Linguistics*, ed. Ida Toivonen and Diane Nelson, 227–58. Amsterdam: John Benjamins.
- Tomlin, Russell. 1986. *Basic Word Order: Functional Principles*. London: Croom Helm.
- Traugott, Elizabeth Closs. 1985. Conditional markers. *Iconicity in Syntax*, ed. John Haiman, 289–307. Amsterdam: John Benjamins.
- Traugott, Elizabeth. 2008. The grammaticalization of NP of NP constructions. *Constructions and Language Change*, ed. Alexander Bergs and Gabriele Diewald, 21–43. Berlin: Mouton de Gruyter.
- Tsukiashi, Ayumi. 1997. A usage-based analysis of the Japanese passive construction. MA dissertation, University of Manchester.
- Tsunoda, Takasu. 1981. Split case-marking patterns in verb-types and tense/aspect/mood. *Linguistics* 19.389–438.
- Tsunoda, Takasu. 1985. Remarks on transitivity. *Journal of Linguistics* 21.385–96.
- Tucker, Archibald N. 1940. *The Eastern Sudanic Languages*. London: Oxford University Press.

- Tucker, Archibald N., and M. A. Bryan. 1966. *Linguistic Analyses: The Non-Bantu Languages of North-Eastern Africa*. (Handbook of African Languages.) Oxford: Oxford University Press.
- Ultan, Russell. 1972. Some features of basic comparative constructions. Working Papers in Language Universals 9.117–62. Stanford: Language Universals Project, Stanford University.
- Ultan, Russell. 1978. Some general characteristics of interrogative systems. *Universals of Human Language*, vol. IV: *Syntax*, ed. Joseph H. Greenberg, Charles A. Ferguson, and Edith A. Moravcsik, 211–48. Stanford: Stanford University Press.
- Vallejos, Rosa. 2016. *A Grammar of Kukama-Kukamiria: A Language from the Amazon*. Leiden: Brill.
- van den Berg, Helma. 1995. *A Grammar of Hunzib*. Munich: LINCOM Europa.
- van den Berg, Helma. 2004. Coordinating constructions in Daghestanian languages. *Coordinating Constructions*, ed. Martin Haspelmath, 197–226. Amsterdam: John Benjamins.
- van den Berg, René. 1989. *A Grammar of the Muna Language*. Dordrecht: Foris. (Reprinted as SIL e-Books 52, 2013. Dallas, Tex.: SIL International.)
- van der Auwera, Johan, Nina Dobrushina, and Valentin Goussov. 2004. A semantic map for imperatives–hortatives. *Contrastive Analysis in Language: Identifying Linguistic Units of Comparison*, ed. Dominique Willem, Bart Defrancq, Timothy Colleman, and Dirk Noël, 44–66. Hounds mills, Basingstoke: Palgrave Macmillan.
- van der Auwera, Johan, Nina Dobrushina, and Valentin Goussov. 2005a. Imperative–hortative systems. *World Atlas of Language Structures*, ed. Martin Haspelmath, Matthew S. Dryer, David Gil, and Bernard Comrie, 294–97. Oxford: Oxford University Press.
- van der Auwera, Johan, and Ludo Lejeune (with Valentin Goussov). 2005b. The prohibitive. *World Atlas of Language Structures*, ed. Martin Haspelmath, Matthew S. Dryer, David Gil, and Bernard Comrie, 290–93. Oxford: Oxford University Press.
- van der Auwera, Johan, and Andrej Malchukov. 2005. A semantic map for depictive adjectivals. *Secondary Predication and Adverbial Modification: The Typology of Depictives*, ed. Nikolaus Himmelmann and Evan Schultze-Berndt, 393–421. Oxford: Oxford University Press.
- Van Geenhoven, Veerle. 1998. *Semantic Incorporation and Indefinite Description: Semantic and Syntactic Aspects of Noun Incorporation in West Greenlandic*. Stanford: CSLI Publications.
- van Gijn, Rik. 2016. Switch reference: an overview. *Switch Reference 2.0*, ed. Rik van Gijn and Jeremy Hammond, 1–53. Amsterdam: John Benjamins.
- van Gijn, Rik, and Jeremy Hammond (eds.). 2016. *Switch Reference 2.0*. Amsterdam: John Benjamins.
- van Klinken, Catharina Lumire. 1999. *A Grammar of the Fehan Dialect of Tetun, an Austronesian Language of West Timor*. (Pacific Linguistics, C155.) Canberra: Research School of Pacific and Asian Studies, The Australian National University.
- van Oosten, Jeanne. 1986. Sitting, standing and lying in Dutch: a cognitive approach to the distribution of the verbs *zitten*, *staan* and *liggen*. *Dutch Linguistics at Berkeley*, ed. Jeanne van Oosten and Johan P. Snapper, 137–60. Berkeley: Dutch Studies Program, University of California, Berkeley.

- Van Otterloo, Roger. 2011. *The Kifultiru Language*, vol. II: *A Descriptive Grammar*. Dallas: SIL Publications.
- Verhoeven, Elisabeth. 2007. *Experiential Constructions in Yucatec Maya: A Typologically Based Analysis of a Functional Domain in a Mayan Language*. (Studies in Language Companion Series, 87.) Amsterdam: John Benjamins.
- Verkerk, Annemarie. 2009a. Secondary predication in a typological context: the encoding of resultatives, depictives and manner predications and their placement within a conceptual space. MA thesis, Radboud Universiteit Nijmegen.
- Verkerk, Annemarie. 2009b. A semantic map of secondary predication. *Linguistics in the Netherlands* 2009, 115–26. Amsterdam: John Benjamins.
- Veselinova, Ljuba. 2013. Negative existentials: a cross-linguistic study. *Rivista di Linguistica* 25.107–45.
- Veselinova, Ljuba. 2014. The negative existential cycle revisited. *Linguistics* 52.1327–89.
- Veselinova, Ljuba. 2016. The negative existential cycle viewed through the lens of comparative data. *Cyclical Change Continued*, ed. Elly van Gelderen, 139–87. Amsterdam: John Benjamins.
- Viberg, Åke. 1983. The verbs of perception: a typological study. *Linguistics* 21.123–62.
- Vigus, Meagan. 2017. Verb marking and argument structure alternations. Presented at the 11th Conference of the Association for Linguistic Typology, Melbourne, Australia.
- Vigus, Meagan. 2018. Antipassive constructions: correlations of form and function across languages. *Linguistic Typology* 22.339–84.
- Vogt, Hans. 1940. *The Kalispel Language*. Oslo: I Kommisjon Hos Jacob Dybwad.
- Voorhoeve, C. L. 1965. *The Flamingo Bay Dialect of the Asmat Language*. 's-Gravenhage: Martinus Nijhoff.
- Vroom, H. 1938. *Latijnse Spraakkunst*. Hilversum: Brands.
- Vuillermet, Marine. 2014. The multiple coreference systems in the Ese Ejja subordinate clauses. *Information Structure and Reference Tracking in Complex Sentences*, ed. Rik van Gijn, Jeremy Hammond, Dejan Matić, Saskia van Putten, and Ana Vilacy Galucio, 341–71. Amsterdam: John Benjamins.
- Wacke, K. 1930/31. Formenlehre der Ono-sprache. *Zeitschrift für Eingeborenen-Sprachen* 21.161–208.
- Washio, Ryuichi. 1997. Resultatives, compositionality and language variation. *Journal of East Asian Linguistics* 6.1–49.
- Watkins, Laurel J. 1984. *A Grammar of Kiowa*. Lincoln: University of Nebraska Press.
- Watters, David E. 2002. *A Grammar of Kham*. Cambridge: Cambridge University Press.
- Weber, David John. 1983. *Relativization and Nominalized Clauses in Huallaga (Huánuco) Quechua*. Berkeley and Los Angeles: University of California Press.
- Weber, David John. 1989. *A Grammar of Huallaga (Huánaco) Quechua*. (University of California Publications in Linguistics, 112.) Berkeley: University of California Press.
- Wehr, Barbara. 1984. *Diskursstrategien im Romanischen*. Tübingen: Gunter Narr.
- Welmers, William Everett. 1973. *African Language Structures*. Berkeley: University of California Press.
- Wetzer, Harrie. 1992. ‘Nouny’ and ‘verby’ adjectivals: a typology of predicative adjectival constructions. *Meaning and Grammar: Cross-Linguistic Perspectives*, ed. Michel Kefer and Johan van der Auwera, 223–62. Berlin: Mouton de Gruyter.

- Wienold, Götz. 1995. Lexical and conceptual structures in expressions for movement and space: with reference to Japanese, Korean, Thai, and Indonesian as compared to English and German. *Lexical Knowledge in the Organization of Language*, ed. Urs Egli, Peter E. Pause, Christoph Schwarze, Arnim von Stechow, and Götz Wienold, 301–40. Amsterdam: John Benjamins.
- Wierzbicka, Anna. 1980. Coordination: the semantics of syntactic constructions. *Lingua mentalis: The Semantics of Natural Language*, 223–85. New York: Academic Press.
- Wierzbicka, Anna. 1982. Why can you have a drink when you can't *have an eat? *Language* 58.753–99.
- Wierzbicka, Anna. 1986. What's in a noun? (or: how do nouns differ in meaning from adjectives?). *Studies in Language* 10.353–89.
- Williams, C. J. 1980. *A Grammar of Yuwaalaraay*. (Pacific Linguistics, B74.) Canberra: Research School of Pacific Studies, Australian National University.
- Wilson, Stephen. 1999. *Coverbs and Complex Predicates in Wagiman*. Stanford: Center for the Study of Language and Information.
- Wise, Mary Ruth, 1971. *Identification of Participants in Discourse: A Study of Aspects of Form and Meaning in Nomatsiguenga*. Norman, Okla.: Summer Institute of Linguistics.
- Wolfart, H. Christoph, and Janet F. Carroll 1981. *Meet Cree: A Guide to the Cree Language*, 2nd edition. Lincoln: University of Nebraska Press.
- Woodward, Lance B. 1973. Maring sentences. *Working Papers in Papua New Guinea Languages* 1, 1–26. Ukarumpa: Summer Institute of Linguistics.
- Wright, Joseph. 1912. *Comparative Grammar of the Greek Language*. London: Oxford University Press.
- Yousef, Saeed. 2018. *Persian: A Comprehensive Grammar*. London: Routledge.
- Yuasa, Etsuyo, and Jerrold M. Sadock. 2002. Pseudo-subordination: a mismatch between syntax and semantics. *Journal of Linguistics* 38.87–111.
- Zepeda, Ofelia. 1983. *A Papago Grammar*. Tucson: University of Arizona Press.
- Zheng, Wuxi. 2016. A grammar of Longxi Qiang. Ph.D. thesis, National University of Singapore.
- Zingler, Tim. 2020. Wordhood issues: typology and grammaticalization. Ph.D. dissertation, University of New Mexico.
- Zlatev, Jordan, and Peerapat Yangklang. 2004. A third way to travel: the place of Thai in motion-event typology. *Relating Events in Narrative*, vol. II: *Typological and Contextual Perspectives*, ed. Sven Strömqvist and Ludo Verhoeven, 159–90. Mahwah, NJ: Lawrence Erlbaum Associates.

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