

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 §1.3. In this section, we will briefly describe the semantic classes and propositional acts; in §2.2, we will discuss the constructions defined by the combinations of propositional act and semantic class.

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

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

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 (sem)** category, represented by *I* and *letter* in (1), include 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 §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 §4.1.2).

Actions (sem), 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 object identity, which is stative. Finally, actions are also **transitory (sem)**, that is, they typically can start and stop.

Properties (sem), 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 §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.

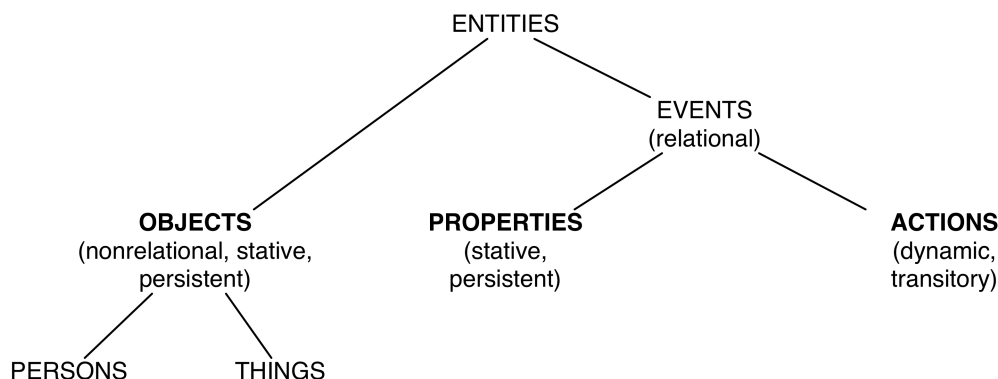


Figure 2.1. *Ontology of major semantic classes.*

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

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 like we use ‘event’ are ‘eventuality’, ‘situation’ and ‘state of affairs (SOA)’.

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 §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. Heim 1983; Givón 1983; DuBois 1987:817; Croft 1991:123; Stassen 1997:102; see §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 §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 §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 §2.2.1, and then the general constructions for the propositional acts, in the last row of Table 2.1, in §2.2.2. We then turn to the constructions on the diagonal from upper left to lower right, which we suggested in §1.3 are the basis for a crosslinguistically valid definition of noun, adjective

and verb, in §2.2.3. After further discussion of the structure of constructions in §2.2.4, we turn to the nonprototypical propositional act constructions in the remaining cells of Table 2.1 in §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 §1.1). For example, *the old doctor* is a 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, chapters 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 §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, chapter 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

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 §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 define 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 §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 cross-linguistic 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 §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 §2.1 on referents and arguments). The term **predicate (cxn)** refers to the element functioning as the predication (see §2.2.4).

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.

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

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

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 §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 crosslinguistic 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 denote the prototypical semantic class along the diagonal in Table 2.1. A noun (*cxn*), 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 (i.e., 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 (i.e., 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 (i.e., 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, 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, the 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 §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 provides 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 cross-linguistic 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 §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 §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) *Classical Nahuatl*
 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 §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 §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-tīcītl* ‘I am not a doctor’, *ah-ni-chōco* ‘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-tīcītl* in (2) a predicate nominal construction, as we have done in Table 2.1. More precisely, *doctor/tīcītl* 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 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 *tīcītl* “is a verb”, and *ah-ni- tīcītl* “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 word in each language (*doctor* and *tīcītl*) 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 construction presented in this book with many ideas in (at least) the Western grammatical tradition, and 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 predicating, in other words, the verb, clusters about concepts of activity.

However, there are cases in which a traditional term has certain connotations 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 §4.4), and ‘balanced’ vs. ‘deranked’ are used instead of ‘finite’ vs. ‘nonfinite’ (see §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 §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 §1.2, and the confusion they create.

2.2.4. More on the structure of propositional act constructions

In §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, not 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.

Construction	Head of construction (prototype)	Head of construction (general)
clause	verb	predicate
argument phrase, referring phrase	noun	referent expression (RE)
attributive phrase	adjective	modifier
— (see footnote 2)	—	admodifier

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

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 §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.

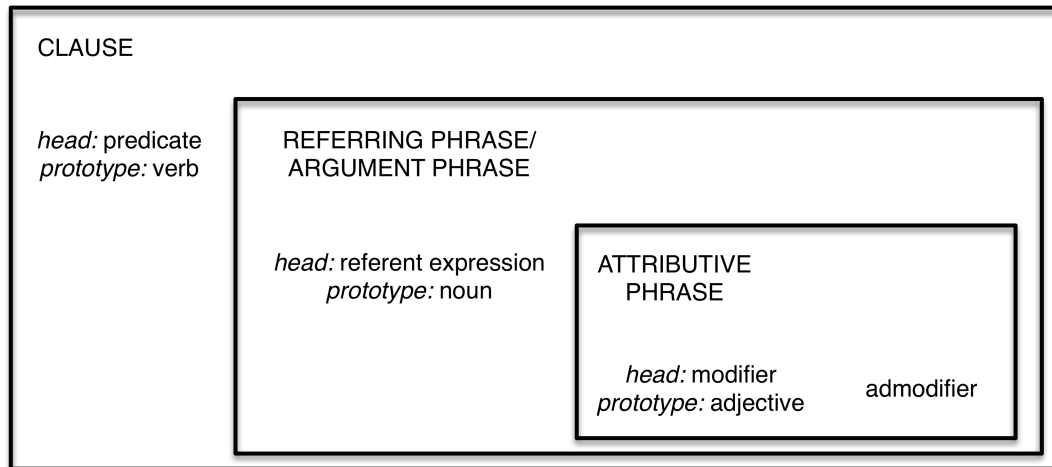


Figure 2.2. The skeletal structure of a clause.

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 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 (cxn)**. 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 §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 §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 §1.3 and Table 2.1 in §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 §2.2.3. In this section, we will briefly describe the nonprototypical propositional act constructions. Most of them are complex and interesting enough that they will have chapters describing them in more detail.

The **property referring phrase construction (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.

The **possessive modifier 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 construction (cxn)** and **predicate adjectival construction (cxn)** express predication of object concepts and property concepts respectively. English, likely 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 predications 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) *Reference to actions:*

- 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) *Action modification:*

- 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 cross-linguistic perspective, and even the facts of English, particularly for English Gerunds, indicates that there is no sharp distinction in morphosyntactic form (see §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 §2.3, we present three principles governing the relation between function and its expression in morphosyntactic form, which motivate the crosslinguistic variation. In §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 §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 §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 §1.3, Table 1.1, Table 2.1 and §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 predications, and conversely, predications 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, predications are predications 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:

•**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 §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. Table 2.1 is reproduced as Table 2.4, with the prototypical constructions along the diagonal highlighted.

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

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

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 predicating 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 one-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 (8)-(10a) from §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-tīcītl
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 cross-linguistic 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 cross-linguistic 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 (§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 2007). 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 §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.

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

Table 2.5. The semantic information packaging strategy for English predicate nominals: use the construction found in the prototypical information packaging of the semantic class (reference; the indefinite article).

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 §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 §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 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 *īcītl* 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 §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.

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

Table 2.6. The actual information packaging strategy for Nahuatl predicate nominals: use the construction found in the actual information packaging of the semantic class (predication—the negative and subject prefixes).

This is why *tīcītl* in *ah-ni-tīcītl* 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 §1.2.1 (Andrews 1975:13). However, *tīcītl* 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, *tīcītl* 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 (coding) 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 over 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 italices in the table).

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

Table 2.7. *The hybrid information packaging strategy for predicate nominals: use part of the construction found in the semantic information packaging of the semantic class (reference; the indefinite article), and part of the construction found in the actual information packaging of the semantic class (predication; the auxiliary).*

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

- (15) Xiāo Lǐ shì hùshì
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 Film 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 Koptjevskaja-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* '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 predications, 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).

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

Table 2.8. The hybrid information packaging strategy for action nominalizations: use part of the construction found in the prototypical information packaging of the semantic class (predication; the postverbal direct object and part of the construction found in the actual information packaging of the semantic class (reference; the possessive pronoun).

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 azzäfäfän
 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 §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, chapter 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 §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.

	Reference	Modification	Predication
Objects	<i>vehicle</i>	<i>vehicle’s, vehicul-ar, of/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>

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

Structural coding is fairly straightforward. A subtler contrast between constructions has to do with the possible ways that the word can inflect, 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, chapter 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 §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; see 2.2.4). 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 like ‘noun’, ‘verb’ and ‘adjective’ described in §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 introduced in this chapter:

2.1. Propositional acts: semantic classes and information packaging

object concept (*sem*), nonrelational (*sem*), relational (*sem*), property concept (*sem*), action concept (*sem*), dynamic (*sem*), stative (*sem*), transitory (*sem*), state (*sem*), event (*sem*), entity (*sem*), ontology (*sem*), file metaphor, argument (*inf*),

2.2. The major propositional act constructions, and heads and dependents

2.2.1. Anatomy of a construction: wholes and parts, and heads and dependents

head (*cxn*), dependent (*cxn*)

2.2.2. Types of constructions: phrases and clauses

referring phrase (*cxn*), admodifier (*cxn*), degree (*sem*), attributive phrase (*cxn*), topic-comment (*inf*), predicate (*cxn*), argument phrase (*cxn*), clause (*cxn*), complex predicate (*cxn*)

2.2.3. Noun, verb and adjective as comparative concepts, and 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*), deadjectival referring phrase (*cxn*), nominal modifier (*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 form-function mapping

2.4. Recruitment/coexpression 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