**Third Factors in Language Variation and Change**

Elly van Gelderen, early version of the 2022 CUP publication

**Preface**

Generative Grammar has undergone a paradigm-shift from its early emphasis on Universal Grammar, e.g. Chomsky (1965), to a focus on factors not specific to the Faculty of Language, e.g. Chomsky (2007; 2015). The latter factors are known as third factor principles and “have the flavor of the constraints that enter into all facets of growth and evolution.... Among these are principles of efficient computation” (Chomsky 2007: 3). Third factor principles include Minimal Search, Determinacy, and Economy and can be seen at work in specific syntactic structures and restrictions on them. In this book, I argue that they can also be detected in how language changes: because labeling {XP, YP} through Minimal Search is impossible, {X, YP} emerges instead, and the need for determinate derivations eliminates superfluous movement. In addition to cases where third factors are responsible for different choices by the language learner, i.e. for language change, there are also cases where third factor principles leave options for cross-linguistic variation: CP-TP sequences are problematic for determinacy and some languages have restricted C to-T-inheritance, or lack a T(P), or delete the C(P).

Language change involves a cyclical dynamic between economy and elaboration or, as von der Gabelentz (1901: 256) put it, language history moves between comfort and clarity. Innate, third factor principles bias the acquisition of a specific grammar in economical ways but external factors, such as pragmatic strengthening, can complicate the grammar of a language. In this book, I mainly examine the comfort side of the linguistic cycle by considering the role of third factor principles in language change, in particular determinacy and labeling. The book offers a theoretical and empirical update to earlier work (van Gelderen 2004; 2011), where I consider structural Economy Principles, such as the Head Preference Principle, Late Merge, and Featural Economy as influencing change. Although third factor in nature, Structural and Featural Economy still depend on linguistic information and, if less emphasis is placed on these, they should be reformulated as non-linguistic, i.e. genuine third factor principles. Although my previous work deals with linguistic cycles and some of the examples inevitably overlap, I have nevertheless tried to provide fresh examples of various cycles. The main emphasis is on the changes due to economy, but renewal of the `eroded’ elements will be discussed where relevant. This renewal reintroduces uneconomical structures and keeps cyclical change going.

Phrase structure rules of the 1970s to 1990s automatically label a phrase through the projection of a head and labeling is part of the operation merge. Since Chomsky (2013; 2015), labeling is argued not to be connected to merge but required when a syntactic derivation is transferred to the interfaces. Labeling requirements prevent phrases from remaining sisters to other phrases unless they share features. These requirements account for the EPP effect without having to postulate an EPP feature and stop *wh*-movement out of a criterial position. In structures with a head and a phrase, Minimal Search unproblematically determines the labeling and linguistic change is indeed in the direction of a head, as is shown in chapter 2, and that feature-sharing is not an optimal resolution of the labeling paradox.

Determinacy rules out having more than one choice in the derivation (Chomsky, Ott, & Gallego 2019: 246) and is part of a broader principle, i.e. Restrict Resources (Chomsky 2019). If a phrase moves from one position to another without the phase being transferred, i.e. eliminated from the workspace, merge will face the dilemma of an indeterminate input and won’t be able to decide which of the two copies will move to a higher position. Determinacy is responsible for the Subject Island Condition and the ban on Topicalization of the subject. It prohibits certain structures, e.g. *that-*trace, and accounts for different options languages have `chosen’ around the CP-TP cluster. For instance, it forces certain relative clauses to project just a TP, as discussed in chapter 3. Diachronically, as shown in chapter 4, it is responsible for the reanalysis of a topic to a subject, of a pronoun as a copula, and of a lower verb as a higher auxiliary.

If feature-sharing is problematic, why do TP-expletives appear, e.g. in Modern English? There are two reasons, one is to avoid indeterminate structures (as in Stepanov 2007), and the other to `expel’ the expletive from the unlabelable specifier of the vP. Chapter 5 examines this tension between labeling and determinacy demands. Due to determinacy, if there is a TP, Verb-second (V2), i.e. V to C, is not possible because the movement has to go via T; TP expletives will be possible but they have to rely on <phi, phi> for labeling and only appear in certain existential constructions. Conversely, if there is no TP, V2 is possible but TP expletives aren’t. Older stages of English lack a TP and V2 and movement of the subject from the specifier of the vP to the specifier of the CP are possible. In this stage, the grammatical subject position and the expletive are optional. Later stages of English introduce a TP, which enables expletives in the TP but bars V2. The loss of V2 and introduction of expletives have not previously been linked and this analysis in chapter 5 offers a new perspective both on the data in English and in V2 languages and on the tension between the two principles.

Language change also casts some light on another issue in efficient computation, namely the incorporation of adjuncts suggests that the mechanisms that have been used to account for the position of adjuncts are less than optimal. Chomsky (2000; 2001; 2004) distinguishes between arguments (subjects and objects) and adverbials in terms of ordered pair-merge and unordered set-merge, respectively. He also argues that adjuncts are invisible to normal operations. Pair-merge is invoked for adverbials because they are less integrated into a clause, evidenced by the fact that they are islands for extraction. Because pair-merge is to be avoided, adjuncts are reanalyzed either as part of a functional category or as an argument, as shown in chapter 6. I advance the view that pair-merge is only relevant to a subset of adjuncts, namely VP and NP adjuncts. Adjuncts merged in the specifiers of the CP and TP layers are not pair-merged and undergo different changes.

The main aim of the book is to see what language variation and change contribute to current Minimalist thinking and vice versa. However, in the process, I also offer an empirical contribution in covering the lack of an Old English *that-*trace effect (chapter 3) and Quantifier Float (chapter 4) more than in earlier literature and in providing a novel account of the CP and vP expletive (chapter 5).

This book assumes a basic familiarity with Minimalist syntax, e.g. the CP/TP/vP spine and some knowledge of feature checking. Early formulations of this work have appeared as van Gelderen (2018ab; 2019) and I thank audiences at DGfS 2015, ICHL 2015, DIGS 2016, in Oslo in 2015, and the Geneva research seminar in 2020. I am very grateful to Johanna Wood for urging more clarity throughout the book and for commenting on flaws in the argumentation and to William Kruger for sharpening many claims, suggesting relevant literature to look at, and talking through analyses. Thanks, as always to the ASU Syntax Reading Group for wonderful suggestions and constructive criticism. The 2019/2020 group consisted of Mastourah Alazmi, Mansour Altamimi, Sakshi Jain, Mary (“Katie”) Kennedy, Servo Patrick Kocu, William Kruger, Narin Loa, Sayantan Mukherjee, Fabián Ni, Hae Ryun Park, Gina Scarpete Walters, Angela Schrader, Jacob Willson, and Johanna Wood.

**Table of Contents**

Preface

**Chapter 1**

**The Shift towards a Minimal UG**  9-38 = 30

1 Introduction

2 From Universal Grammar (UG) to Third Factor

2.1 Less UG

2.2 The derivational model

2.3 Third Factors

3 From Projection to Labeling

3.1 UG principles: Projection

3.2 Third Factor approaches

4 From Islands to Determinacy

4.1 UG approaches

4.2 Third Factor approaches

5 Variation and change

6 Sources and glosses

7 Conclusion, outline, and major findings

**Chapter 2** 39-75 =37

**Labeling in language change**

1 Introduction

2 The Subject Cycle

2.1 Pronouns to agreement

2.2 Labeling

3 The Object Cycle(s)

3.1 Pronouns to agreement

3.2 Agreement on T

4 Ergative subject and object cycles

5 Demonstrative Pronouns

5.1 From Demonstrative to article

5.2 From Demonstrative to complementizer

6 Q-feature sharing

7 Negation

8 Conclusion

**Chapter 3** 76-105 = 30

**Determinacy in language variation**

1 Introduction

2 Variation in the MP

3 The CP-TP boundary: Feature Inheritance

4 CP-deletion

4.1 *That-*trace

4.2 Subject-less relative clauses

4.3 C-less complement clauses

5 Languages without TP

5.1 *That-*trace without TP

5.2 Old English *that-*trace

*5.3* Obligatory *that* and no subject-less relatives

6 C-agreement

7 Conclusion

**Chapter 4** 106-146 =41

**Determinacy in language change**

1 Introduction

2 From Topic to Subject

2.1 Subjects and topics

2.2 Diachrony

2.3 The reanalysis from topic to subject

3 Changes involving copulas

3.1 From subject to copula

3.2 From topic to subject

4 Head movement

4.1 Where is head-movement?

4.2 English auxiliaries

4.3 Indeterminacy and a resolution

4.4 A Diachronic Perspective

5 Quantifier Float

5.1 Modern English Quantifier Float

5.2 A perspective from older English

6 Conclusion

**Chapter 5**  147-186 = 40

**Labeling and Determinacy: Verb-second and Expletives**

1 Introduction

2 Verb-second, expletives, and third factors

2.1 V2 and determinacy

2.2 Expletives and determinacy

3 V2 in English

3.1 Old English word order

3.2 The reasons for the loss of V2

3.3 Changes in the clausal structure

4 Expletives

4.1 The first English expletives

4.2 V2 and expletives

5 vP and CP expletives

5.1 The two kinds of expletives

5.2 CP and vP expletives in English

5.3 Expletives and Third Factors

6 Conclusion

Appendix

**Chapter 6** 187 - 231 = 44

**Adjunct Incorporation and avoiding Pair Merge**

1 Introduction

2 Issues surrounding adjuncts

3 Adjuncts as part of the DP

4 Towards ASP(P)

5 PP Adjuncts to C(P)

5.1 Changing *after*

5.2 Changing *for* and variants

6 Clause Integration

6.1 *For* and *since*

6.2 Insubordination

7 Adjunct to predicate and complement

7.1 Changes in Argument Structure

7.2 Adjuncts to Predicates

7.3 Adjuncts to Objects

8 Conclusion

**Chapter 7** 232

**Conclusion**

**References** 233-254

**Abbreviations**

ABS absolutive case

ACC accusative case

AIP Adjunct Incorporation Principle

ANT anterior

ART article

ASP aspect

AUX auxiliary

C complementizer

CdES Corpus d’entretiens spontanés

CI Conceptual-Intentional

CLF classifier

CNPC Complex Noun Phrase Constraint

COCA Corpus of Contemporary American English (http://corpus.byu.edu/coca/)

COHA Corpus of Historical American English (<http://corpus.byu.edu/coha/>)

COP copula

CSC Coordinate Structure Constraint

CVC Cape Verdean Creole

DEF definite

DOE Dictionary of Old English

EC Extension Condition

ECP Empty Category Principle

EM External Merge

EPP Extended Projection Principle

ERG ergative case

F feminine noun class

FUT future

HC Haitian Creole

i- interpretable feature

IC Inclusiveness Condition

IL Individual level

IM Internal Merge

IND indicative

IRR irrealis

LA labeling algorithm

LOC locative

M masculine noun class

MED Middle English Dictionary

NEG negative

NTC No Tampering Condition

OED Oxford English Dictionary

OM Object Marking

OV Object Verb

P plural

PASS passive

PIC Phase Impenetrability Principle

PoP Problems of Projection

PR present

Pred Predicate

PROG progressive

Prox proximate

PRT particle

PST past

Q question-feature

RP Root Phrase

S singular

SAI Subject Auxiliary Inversion

SL Stage Level

SM Sensory-Motor Interface

SMT Strong Minimalist Thesis

SV Subject Verb

T Tense

t trace

u- uninterpretable feature

v little v, used for unaccusatives and passives

v\* little star v, used for unergatives and transitives

V big V

V2 (3 etc) Verb-second (third etc)

Q Interrogative features

1 first person

2 second person

3 third person

α, β, γ still unlabeled phrases

**List of Tables**

Table 1.1: Two forces of change

Table 2.1: The present tense of the verb *chanter* `to sing’

Table 2.2: Some pre- and post-verbal objects in the *Orléans corpus*

Table 2.3: Portmanteau morphemes with first and second person subjects and other objects, from Bahtchevanova and van Gelderen (2016: 127).

Table 2.4: Agreement markers in Jacaltec (from Robertson 1980: 13; 15); the variants are preconsonantal/prevocalic respectively; Craig (1977) has *cu/x* for *ko/x* and *ach* for *ač*.

Table 2.5: Independent Pronouns in Jacaltec (Craig 1977: 101-107)

Table 2.6: Forms of pronouns and indexers in Central Kurdish (Kareem 2016: 95)

Table 3.1: A typology of choices for the C-T complex

Table 4.1: Old and Middle English subject quantifiers (Yanagi 2008: 117; 2012: 144-6)

Table 5.1: The loss of V2 in Chaucer’s *Astrolabe* (S and V are bolded)

Table 5.2: Word order in Layamon’s Caligula (Subjects and finite verbs in bold)

Table 5.3: Options for C and T

Table 5.4: The CP expletive *þa/ða* in (the beginning of) the Peterborough Chronicle

Table 6.1. Numbers and percentages of demonstrative objects (Dem) with *after* and fronting.

Table 6.2. Renalyses involving *after.*

Table 6.3. Numbers and percentages of demonstrative objects (Dem) with *for* and fronting.

Table 6.4: Adjunct to object reanalysis (from Rohdenburg 2018b and Callies 2018)

Table 7.1: The relevance of Third Factor and other principles in language variation and change

**List of Figures**

Figure 1.1: The Minimalist model of language generation

Figure 2.1: Reanalysis of the subject resulting in labeling through Minimal Search

Figure 2.2: Reanalysis of the object as v\* resulting in simpler labeling

Figure 2.3: Reanalysis of the object resulting in simpler labeling

Figure 2.4: Reanalysis of the demonstrative as article: from feature-sharing to Minimal Search

Figure 2.5: Reanalysis of the demonstrative as complementizer: from feature-sharing to Minimal Search

Figure 2.6: The Negative Cycle, search over sharing

Figure 4.1: From topic to subject in French

Figure 4.2: From topic to subject in Bantu

Figure 4.3: From topic to subject in terms of labeling

Figure 4.4: Reanalysis of a DP demonstrative to copula

**Chapter 1**

**The Shift towards a Minimal UG**

**1 Introduction**

The generative model focuses on the Faculty of Language as represented in the mind/brain. Early on in this framework (Chomsky 1957; 1965; 1975), the answer as to how children acquire language so effortlessly is seen as rooted in Universal Grammar (UG). Language acquisition, in this framework, is not imitation but an interaction between UG and exposure to a particular language. UG is “the system of principles, conditions, and rules that are elements or properties of all human languages not merely by accident but by necessity – of course, I mean biological, not logical, necessity” (Chomsky 1975: 29). However, although UG received a lot of attention, “principles of neural organization … deeply grounded in physical law” and the general “capacity to acquire knowledge” are acknowledged, even in the early period (Chomsky 1965: 59). Recently, these have been emphasized more, and have come to be known as third factor principles.

The premise of this book, and other work in diachronic generative syntax (e.g. van Gelderen 2019), is that the workings of third factor principles should be noticeable in language change as well. Since third factors bias the acquisition, a language learner may simplify the input in accordance with third factors resulting in more economic derivations. Languages also innovate in pragmatically motivated ways. Thus, language change involves a balancing act between economy and extravagance, the latter not constrained by third factors.

This introductory chapter will provide some background on the shift in emphasis towards third factors and some specifics on a few selected third factors, including those that receive the most attention in this book, determinacy and labeling. The remainder of the book looks at changes that can be argued to be prompted by third factors. The outline is as follows. In section 2, I first outline the general shift that has taken place in generative grammar from language-specific principles to factors not restricted to the language faculty. In sections 3 and 4, I offer some background on two of the third factor principles, labeling and determinacy, respectively. Section 5 briefly discusses types of change and section 6 provides a justification of the data used. Section 7 presents a conclusion, an outline, and the major findings of the book.

**2 From Universal Grammar (UG) to Third Factor**

This section sketches some of the thinking behind the Minimalist Program, putting less emphasis on Universal Grammar (UG) and more on other factors, in particular third factors. The section also provides a discussion of a typical derivation and the interaction of the various principles, some of them third factor ones, those being the focus of this book.

*2.1 Less UG*

UG of the 1950s to 1970s includes a lot of language-specific instructions and rules. It initially includes rules for e.g. antecedent-reflexive relations, for passives, and for *wh*-movement. When the model shifts to the Principles and Parameters’ one, the parameters help to account for cross-linguistic differences while still keeping language acquisition central. In that model, children acquiring a language choose a setting (compatible with the data) for language-specific phenomena, such as *wh*-movement and null-subjects. UG remains rich in the Government and Binding framework (Chomsky 1981: 3).

However, if the Faculty of Language developed in humans only 100,000 to 200,000 years ago – as is speculated – , it makes sense to attribute less to language specific principles. “UG must meet a criterion of evolvability” (Chomsky, Gallego, & Ott 2019: 230). If there were specific principles, they wouldn’t have had enough time to evolve and, if there had been time, the changes would possibly have made languages very different from each other. That’s why UG is currently assumed to contain just a simple operation merge that combines two elements into an unordered set, as in (1).

(1) **Merge**

Select two lexical items α and β and form the set {α, β} in a workspace. (Chomsky, Gallego, & Ott 2019)

Chomsky, Gallego, & Ott (2019) and Chomsky (2020: 34) refer to merge in the workspace as (capital) MERGE, to distinguish it from earlier instantiations although, as e.g. Krivochen (2020) has emphasized, there is no clear characterization of `workspace’. For simplicity, I continue to use (non-capital) merge and use workspace in the sense of a phasal domain.

More important than principles specific to the language faculty, as in (1), are "general properties of organic systems" (Chomsky 2004: 105). In fact, three factors are considered crucial in the development of language and they are listed below.

**Three Factors**

“1. Genetic endowment, apparently nearly uniform for the species, which interprets part of the environment as linguistic experience, a nontrivial task that the infant carries out reflexively, and which determines the general course of the development of the language faculty. Among the genetic elements, some may impose computational limitations that disappear in a regular way through genetically timed maturation …;

2. Experience, which leads to variation, within a fairly narrow range, as in the case of other subsystems of the human capacity and the organism generally.

3. Principles not specific to the faculty of language”. “(a) principles of data analysis that might be used in language acquisition and other domains; (b) principles of structural architecture and developmental constraints that enter into canalization, organic form, and action over a wide range, including principles of efficient computation, which would be expected to be of particular significance for computational systems such as language”. (Chomsky 2005: 6)

The first factor principle, the “genetic endowment” comprises a greatly reduced UG which Chomsky (2005: 11-12) argues includes just merge, i.e. (1). Take two syntactic objects and combine them to make another object. Since merge can continue indefinitely, it also derives the recursive nature of language. Most linguists (e.g. Boeckx 2011) would add two other characteristics to UG, i.e. agree and phasal transfer (more about those later).

The second factor is the learner’s need to be exposed to one or more languages (spoken or signed) to build the lexicon and to become familiar with interface constraints (again more on these later). Lexical differences are responsible for all cross-linguistic variation and parameters are now only relevant to that domain: speakers have to learn which features a lexical item has and which grammatical categories are included. There are some principles that help speakers acquire and use lexical and grammatical items and some of these can be formulated as in (2).

(2) **Feature Economy**

(a) Utilize (innate) semantic features as the interpretable features connected to grammatical categories, if there is evidence for these (van Gelderen 2011: 17).

(b) If a specific feature appears more than once, one of these is interpretable and the others are uninterpretable. (Muysken 2008; van Gelderen 2013: 33)

(c) Select feature bundles from the lexicon as economically as possible.

These are reminiscent of Longobardi’s (2005) feature parameters, which also help the learner bundle the category and the features. However, the principles in (2) are formulated in terms of economy. Principle (2a) enables the acquisition of grammatical categories: a child needs to have lexical input for grammatical categories to appear. Chomsky (1995: 230; 381) suggests that "formal features have semantic correlates and reflect semantic properties." Because a language learner uses innate concepts to assign semantic person and number features to, for instance, a noun, the learner will be able to hypothesize uninterpretable phi-features on another F (and will be able to bundle them there). Initially, a child uses lexical categories (as well as demonstrative pronouns) with interpretable features (as in Radford 2000) which are later used as uninterpretable features. The innate concepts (see also Pinker 1984: 244-245) involve, for instance, time, negation, and mass and are used linguistically as tense, negation, and number, respectively. Languages select certain categories to bear these, e.g. C or T for tense and D for definiteness. Principle (2b) enables the understanding of which features agree with each other and is relevant to C/T and v\*/V, the phase heads, as well as possible other functional heads (as argued in chapter 4). Principle (2c) makes it possible for features to be bundled in economical ways.

For syntactic change, and in particular grammaticalization, all the principles in (2) are relevant and work in tandem. (2a) is significant because a child will first acquire the semantic features of a lexical item but will, when there (no longer) is evidence for interpretable features, use the semantic features as interpretable. When lexical elements are renewed pragmatically, (2b) becomes relevant because there can only be one feature. As for (2c), a verb like *go* is listed with [motion] and [future] in the lexicon and a selection would be possible for either the main or the auxiliary verbal use. If there is evidence in the data that *go* is used with another verb, the choice of features could just be [future]. The book is mainly about third factors and Feature Economy doesn’t count as one. I do discuss it where relevant, e.g. in chapter 4, section 4.3.

The principles in (2) reference linguistic concepts and are therefore not third factors although third factor principles, such as Biberauer’s (2017) Maximize Minimal Means, shape them. Principle (3) is inspired by Abler (1989) and ultimately von Humboldt’s (1836) insights.

(3) **Maximize Minimal Means**

a. Make infinite use of finite means

b. Create what is not present in any of the associated constituents (Humboldt 1836: 70, 67, from Biberauer 2017)

Biberauer outlines another set of clues that fit the second factor: for learners to notice silence, collococations, and recursion.

Third factor principles are not specific to language and include Minimal Search, Determinacy, and Structural Economy and take over some of what used to be attributed to first factor, i.e. UG, effects. In the next subsections, I briefly sketch the derivational model and give some examples of third factors, and will then devote the next two sections to the two third factors that will feature most prominently in the book.

*2.2 The derivational model*

The Minimalist Program proposes syntactic models and derivations that are very minimal and the same for every language. Interfacing with the syntactic derivation are the Conceptual-Intentional (CI) and Sensory-Motor (SM) systems. The former is responsible for providing an interpretation )e.g. through labeling) and includes non-linguistic knowledge, whereas the latter is responsible for externalizing the derivation i.e. providing a spoken or signed or written representation.

The minimalist model for deriving a sentence in the late 1990s involves making a selection from the lexicon, as in (4), and this is called a numeration.

(4) {they, read, will, the, books}

The selection procedure in (4) is to minimize the computational burden of keeping an entire lexicon active but, recently, a selection, lexical array, or numeration is no longer assumed (Chomsky, Gallego, & Ott 2019: 236-7). This means the entire lexicon is the input and the third factor principle Restrict Resources (more on this below) will restrict the options enough for the numeration not to be needed.

Using (1), the items from (4) or from the open lexicon are merged together, as in (5), from bottom to top.

(5) a. {the, books}

b. {read, {the, books}}

c. {they, {read, {the, books}}}

d. {will, {they, {read, {the, books}}}}

e. {they, {will, {<they>, {read, {the, books}}}}}

In steps (5ab), the object and the verb are combined, i.e. the v\*P is constructed (ignoring the VP for brevity). The other steps involve the subject of the sentence being merged with the v\*P in (5c) before the auxiliary *will* is in (5d). Sometimes the merge is `internal’, with input from inside the derivation, e.g. *they* in (5e), and I sometimes call that process movement, i.e. the subject moving to a higher position. When merge uses its own input, the term Internal Merge (IM) is used; otherwise External Merge (EM), as in (5abc).

In (5e), I have represented the lower copy with angled brackets. This is to indicate that, at the level of externalization, it is not pronounced. In past work, linguists have also represented it with strike through, as in (6a), or with traces, as in (6b).

(6) a. {they, {will, {~~they~~, {read, {the, books}}}}}

b. They will t read the books.

In addition to indicating copies, angled brackets are also used for a special kind of merge, namely the pair-merge of adjuncts, as in (7a). As Chomsky (2004: 117-118) defines pair-merge, “there is also an asymmetric operation of adjunction, which takes two objects β and α and forms the ordered pair, α adjoined to β.” In a tree, pair-merge looks like (7b).

(7) a. Pair-Merge (α, β) = <α, β>

b. β

ei

α β

Some authors use slightly different angled brackets, i.e. 〈〉 (Symbol font) for pair-merge, but I will not because the distinction between merge and copies will be clear without a special marker. Pair-merge ignores the adjoined element and is seen by many as problematic (e.g. Oseki 2015). In chapter 6, I use pair-merge for VP-adjuncts and discuss it a little more.

The curly brackets in (5) are used to indicate unordered sets, formed through set-merge, that need to be ordered when they are externalized at the SM interface. As we saw, set-merge may be EM or IM and, as we’ll still see, it is said to involve agree (cf. Kidwai & Mathew 2005).

Another way of representing the derivation in (5) is through a tree, as in (8). This structure uses an application of X’-structure that was current up to the mid 1990s. Although set notation, as in (5), is replacing tree structures in generative work, I follow others in using “trees, bracketing, and set notation interchangeably throughout” (Ott 2012: 9). The choice between trees and set notation will be based on clarity of exposition needs.

(8) TP

ei

They T’

ei

T v\*P

will ei

<they> v\*’

ei

v\* VP

read ei

V DP

<read> ei

D NP

the books

The v\*P/VP layer is the theta-domain and the TP is the Tense Phrase, where information on finiteness and agreement is housed. In this tree, I have shown a split VP, with the Agent (the external argument) in the specifier of v\*P and the Theme as the complement of the V. There is also a CP, not shown in (8), that indicates mood and tense and is situated above the TP.

The current Problems of Projection (PoP) approach within Minimalism (Chomsky 2013, 2015) insists that the use of the branches in (8) is deceiving because it suggests nodes where the brances come together that have labels. The PoP approach emphasizes that merge doesn’t label. Syntax only combines objects and yields unordered sets {X, Y}, as in (3), without a label (Chomsky 2013: 42) and the labeling is done by a Labeling Algorithm when the syntax hands over its combined sets to the interfaces.

This brings us to the interfaces. After the selection of items from the lexicon and their merge into sets, the result is handed over (transferred) to the interfaces, as shown in Figure 1.1. The output from merge interfaces with the Sensory-Motor system and includes information on how to externalize the information (e.g. linearization). There are (at least) two possibilities to externalize the hierarchical structures. Kayne (1994) argues that what is higher in the tree (or least embedded in the merged structure) will also be spoken, signed, or written first. This is known as the Linear Correspondence Axiom. An alternative is to assume parameters in the Sensory-Motor system that linearize head first or head last, as elaborated on in Koeneman & Zeijlstra (2017: 224-7). The output from merge provides hierarchical structures to the Conceptual-Intentional system which the latter uses to compute meaning, events, and quantification. Many proposals exist for making the interface properties and the actual CI and SM systems more precise (e.g. Reinhart 2006 for the CI system).

|  |
| --- |
| Selection of lexical items  +  Merge  Transfer/  Interfaces: Conceptual- Sensory- Labeling  Intentional (CI) Motor (SM) |

Figure 1.1: The Minimalist model of language generation

*2.3 Third factors as limits on free merge*

Having provided a brief sketch of a derivation, I now turn to some examples of third factors. Derivations are built from bottom to top, as in (3). With merge applying freely, they have to apply in stages, known as phases. A phase restricts the workspace so that the computational load is lessened. There are two phases in the sentential spine, namely CP and v\*P. The v\* is the head that introduces the external argument and there is a debate if structures without external argument, i.e. passives and unaccusatives, also constitute phases (see Chomsky 2001, 2008 who argues against that). I’ll assume only v\* counts, in addition to C.

Once the v\* phase head is merged in (3c) and the v\*P completed, the complement of v\* is sent off to the interface (and the same is true once the CP is reached). Once a phase is tranferred, it is no longer accessible to internal merge, according to a Third Factor Principle, the Phase Impenetrability Principle, as formulated in (9a) with an example in (9b).

(9) **Phase Impenetrability Principle (PIC)**

a. “The domain of H [v\* or C] is not accessible to operations, but only the edge of HP [the head and specifiers].” (Chomsky 2004: 108)

b. v\*P

ei

DP v\*

ei

v\* VP not accessible

The reason for this formulation is to keep the notion of v\*P and CP as phases but to allow their heads and specifiers to be accessible as escape hatches: the edge of the phase remains accessible at the next higher phase. Chomsky (2017; 2019) talks about restricting access to the input, Resource Restriction (see (13) below), and the PIC is one of these restricting devices. Recently, the PIC has been modified to only include internal merge and not agreement (Chomsky, Gallego, & Ott 2019: 241) but this remains a matter of discussion.

A practical example of the PIC for the *wh*-movement of an object is given in (10), where I ignore the TP for reasons of simplicity. In (10), the *wh*-object moves to the specifier of CP to express that the sentence is a question. Since v\* is a phase head which transfers its complement to the interfaces, *what* must first move to the edge of the v\*P phase, as in (10b), in order to be accessible for further movement to the CP. If it didn’t move, it would be transferred together with the VP and be inaccessible under the PIC.

(10) a. What did you eat?

b. CP[What did v\*P[<what> v\*P[you eat VP[<eat> <what>]]]]

v\* = phase head IM of *what* to edge of phase

Transfer of VP upon completion of v\*P

Thus, the PIC restates what locality principles do in earlier frameworks (e.g. subjacency), as we’ll see, namely that movement must be local.

The lexical items in (5), (8), and (10), come with features. For instance, nouns have interpretable person and number features (phi-features) and v\*, T, and C have uninterpretable ones. The uninterpretable features acts as probes that need to find goals in their c-command domains to value the features (but there are many versions of how to achieve valuation). In (11), the phase head v\* has uninterpretable phi-features, marked in the tree, which it checks with its object in-situ. This checking is done through Minimal Search in (12).

(11) a. v\*P b. v\*P

ei ei

v\* VP > v\* VP

[u-phi] ei ~~[u=3S]~~ ei

V (or R) DP V (or R) DP

what what

[i-3S] [i-3S]

(12) **Minimal Search**

A head looks for something in a set/workspace, where `something’ can be a lower head, phrase. or features.

*Wh*-elements are also endowed with interpretable Q-features that are probed by a C with uninterpretable ones; I haven’t shown these in (11) but we’ll encounter some in chapters 2 to 4.

Typically, only phase heads will have uninterpretable phi-features in structures like (9), so only v\* and C. T inherits the phi-features from C but, for now, I continue to ignore T. Minimal Search is not “formally defined in the works of Chomsky” (Blümel 2017: 15) but is probably the most important of the third factors, at least in this book. Minimal Search is not only relevant to feature checking in (9) but Labeling (see section 3) and c-command (Chomsky 2005: 14) also use it and it is not restricted to just phase heads.

Three other Third Factor Principles are the Inclusiveness Condition (IC), the Extension Condition (EC), and the No Tampering Condition (NTC). All three are somewhat related and can be subsumed under the Principle of Resource Restriction, a formulation of which is given in (13).

(13) **Principle of Resource Restriction**

“the operations should never extend the workspace” Chomsky (2019: 275)

The IC is given in (14) and it disallows traces and indices to indicate binding relations because these would be new objects not present in the original lexical array. The IC is also responsible for phrasal labels not being included through projection.

(14) **Inclusiveness Condition (IC)**

“[N]o new objects are added in the course of computation.” (Chomsky 1995: 228)

The IC will be violated if expletives are allowed to merge late as a measure of last resort. In chapter 5, I argue that that’s not the case and that expletives are part of the original selection from the lexicon.

Not assuming a lexical numeration, as in (4), and leaving the lexicon open, as in Chomsky, Gallego, & Ott (2019), means the IC has to be reformulated and that is behind the Stability Principle in (15). Both (14) and (15) restrict the use of indices and traces but (15) formulates that without a numeration.

(15) **Stability Condition**

“the properties of a syntactic object can’t change in the course of the derivation” (Chomsky 2019: 275).

Two related principles are the EC and NTC, as in (16) and (17). The EC states that trees are built from the bottom up and that merge applies to the top of the tree or to the output of previous merges. The NTC requires that the merge of “X and Y leaves the two SOs [Syntactic Objects] unchanged” (Chomsky 2008: 138) although that has to exclude internal merge. The NTC seems to include the EC.

(16) **Extension Condition (EC)**

“Merge always applies in the simplest possible form: at the root” (Chomsky 1995: 254).

(17) **The No Tampering Condition (NTC)**

Merge cannot make changes to the objects it affects.

Note that the EC is violated if heads adjoin to other heads in the syntax, as in (18), a point I briefly come back to in section 3.1 and in more depth in chapter 4 (section 4).

(18) TP

qp

T MP

ei ei

M T M VP

*may* <may>

Section 2 has provided some general background to the three factors, has demonstrated how a sentence may be derived using minimalist theory, and has given some examples of third factors. At the moment, the main ones are Minimal Search and Resource Restriction although, with the proper definition, they can be collapsed. Sections 3 and 4 below look at two more third factor principles, labeling and determinacy, in more detail, because they will be the main focus in subsequent chapters.

**3 From Projection to Labeling**

Early Phrase Structure Grammar (e.g. Chomsky 1965) and X’-bar theory (e.g. Jackendoff 1977) take for granted that a phrase is headed and expands to a maximal projection with a specifier, head, and complement. This X’-schema is seen by many as perhaps one of the greatest insights into syntactic structure. The spirit of the current Minimalist Program (Chomsky 1995 through the present), however, is to attribute as little as possible to the computation, restricting it to simple merge with a labeling algorithm needed for interpretation at the interfaces. In this section, as before, I first review a pre-1995 account of labeling and then a third factor account through labeling and Minimal Search.

*3.1 UG Principles: Projection*

In early Generative Grammar, language-specific phrase structure rules, such as (19), are responsible for generating sentence structures. (19a) generates the basic sentence and (19b) the Verb Phrase. Chomsky (1970) and, especially, Jackendoff (1977: 17) reformulate these rules as a category-independent and language-independent schema, as given in (20), where X represents the lexical categories N, V, A, and P. The label of the XP crucially depends on that of its head.

(19) a. S 🡪 NP VP

b. VP 🡪 V NP

(20) a. XP 🡪 YP X’

b. X’ 🡪 X ZP

In the mid-1980s, the X’-schema of (20) is extended to grammatical categories, such as T, C, and D, and the VP is split. The result is the familiar structure in (21), again with the head determining the label of the higher phrase.

(21) CP

ei

Specifier C’

*what* ei

C TP

*may* ei

Specifier T’

*John* ei

T v\*P

<may> 4

*John eat* <what>

Cartographic approaches (Rizzi 1997; Cinque 1999) add more structure to (21) in the late 1990s and capitalize on the presence of both specifier and head positions to account for mood and aspect being expressed by either an adverb in the specifier position or an auxiliary in the head position, as we’ll see in chapter 4. The timing for the movement of the auxiliary (e.g. *may* in (21)) has been debated. In Chomsky (1995), it is suggested that it could happen in the PF. That would solve the EC violation mentioned above. In chapter 4, I will argue it occurs in the syntax and provide a solution for the EC violation.

Chomsky (1995: 228), however, suggests a structure, as in (22), to show that merge doesn’t introduce labeling, like DP and NP, which can’t happen because of the Inclusiveness Condition.

(22) the

ei

the book (Chomsky 1995: 246)

So, a UG approach to projection assumes that all lexical and grammatical categories project into phrases, as in (20). Chomsky (1995) see this as problematic and, as we’ll see next, he later assumes that there is a Labeling Algorithm outside the syntax, using the third factor principle Minimal Search.

*3.2 Third factor approaches*

As mentioned in the previous sections, taking the Minimalist Program and the move towards third factor explanations seriously means attributing less and less to UG, in particular to rules such as X-bar in (20), and restricting the generative part of a derivation to a computational operation called merge without any labeling. The Problems of Projection (PoP, as in Chomsky 2013) approach within Minimalism emphasizes (a) that phrases aren’t labelled when the derivation takes place and (b) that labeling problems arise when the merged objects are too symmetrical.

External Merge (EM) takes two objects and yields an unordered set {X, Y} without a label (Chomsky 2013: 42); Internal Merge (IM) takes an already formed syntactic object and takes part of that and merges it with the original syntactic object. Labeling the set is not part of merge and is left to a requirement of the interface, a Labeling Algorithm.

Not much is said about where and why labeling is required. Chomsky (2015: 2) assumes that “for interpretation, syntactic objects must be labeled”. Thus, it seems necessary for the CI Interface to know which element is a DP or v\*P, i.e. an argument or predicate, respectively. Likewise, Ott (2012: 60) argues that labeling is “required for thematic interpretation” and that “a label must be detectable for any argument or adjunct position.” He argues that “for some such symmetric syntactic objects there is no clear evidence that they require a label” (2012: 159) and includes finite TP and root CP (and adjunction to it) in the group that does not require a label.

In addition to being needed for the CI interface, labeling may also be necessary for the rules of externalization, i.e. for the SM interface. In fact, Takita, Goto, & Shibata (2016) and Takita (2019) propose alternatives for where labeling is relevant and the latter argues that labeling is required for linearization at the SM Interface, not for interpretation at the CI Interface.

So, Chomsky claims that syntax combines only objects and yields unordered sets {X, Y} without a label (Chomsky 2013: 42). The labeling is done when the syntax hands over its combined sets to the interfaces. This Labeling Algorithm, as in (23), is needed by the interfaces and employs a third factor principle, namely Minimal Search.

(23) **The Labeling Algorithm** (LA)

The Labeling Algorithm is “a special case of minimal search” seeking “heads H within its search domain” (Chomsky 2015: 6).

There are three cases of SOs that can be combined, a head and a phrase, two heads, and two phrases. Labeling problems (also know as paradoxes) arise if there is too much symmetry between the merged elements. The easiest scenario for the LA is an asymmetric set, as when a head and a phrase merge, the first case. In that case, the LA determines that the head is the label. This will, for instance, occur when T merges with v\*P resulting in a TP label.

The second case, when two heads merge, involves two kinds of cases, (a) a root and the other a functional element determining its category and (b) head-movement. For (a), Chomsky (2013: 47) writes that two heads can be labeled if one of the heads is a root and the other a functional element determining its category. If roots don’t count as labels, no labeling problem arises. Head-movement in (b) was already questioned in Chomsky (1995) as being part of the syntax. Chomsky (2015: 15) writes that a strong argument can be made that head-movement is not part of the (narrow) syntax. That would solve the problem, mentioned above, that head-movement violates the EC and that the moved heads need labels. Chomsky (2015: 12) formulates head-movement to T as “T affixed to V. More generally, the conventional theory of head-raising seems to have the story backwards: the host should be affixed to the raised element” so these are not cases of {X, Y} because “the affix is invisible to the labeling algorithm”. See Carstens, Hornstein, & Seely (2013) as well.

My view about heads, head-movement, and head-labels will be slightly different. Heads are extracted from the lexicon with features for tense, agreement, and mood, and that makes them suitable candidates for being what is generally seen as T and M categories. So, they are never weak and can always label the projection they head; when that projection merges with another phrase, there are labeling issues which can be resolved through feature-sharing. More on this point will follow in chapter 4. This view on heads being able to label is similar to Shim (2018) but different from e.g. Mizuguchi (2017; 2019) who argues that only heads without unvalued features can label.

Most relevant to the changes described in this book is the third case, where two phrases merge and the LA cannot find a head that will serve as a label, as in (24).

(24) ?

ei

DP (=XP) v\*P (=YP)

4 ei

D (=X) v\* (=Y) ...

Chomsky (2013: 43) provides two resolutions to the labeling of two phrases: “There are, then, two ways in which [syntactic object] SO can be labeled: (A) modify SO so that there is only one visible head, or (B) X and Y are identical in a relevant respect, providing the same label, which can be taken as the label of the SO. These are the two cases that are prominently found”.

Option (A) applies in (37): the DP must move after which the v\*P can be labelled because movement makes the XP, the lower copy, invisible. Attractive in this model is that movement is “driven by labeling failures” (Chomsky 2015: 7). For instance, if two phrases are merged together, their heads are both as accessible and could both label the result. This is a paradox that is resolved when one of the two phrases moves and provides an explanation for the movement of the subject. Instead of positing EPP-features, that trigger movement, labeling requirements in (37) force DP-movement.

Other examples where the {XP, YP} set can be modified through movement of one of the maximal projections is the movement of a phrase out of a copula clause. Movement of one of the maximal projections in (25), e.g. XP, would result in a structure that can be labeled. According to Chomsky (2013: 44), “[t]he intuitive idea is that the lower XP copy [in (38)] is invisible to LA, since it is part of a discontinuous element, so therefore β will receive the label of YP”.

(25) copula {β XP, YP} (Chomsky (2013: 44)

Although β receives a label in (25), as does v\*P in (24), both result in other cases of {XP, YP}. The respective results, given in (26) and (27), are unlabeled α phrases. In (26), the subject internally merges to the TP resulting in another {XP, YP} and, in (27), it merges to the PredP, also resulting in {XP, XP}.

(26) α[Tom T [ <Tom> v\* read a book]] (adapted from Chomsky 2015: 10)

(27) α[Tom Pred[ {β <Tom>, a student}

In (26), option (B) applies: “the most prominent feature of the {XP, YP} set “is shared”. Since the heads of the DP *Tom* and the TP share phi-features, the set is successfully labeled <phi, phi> as shown in (28a). In (27), the result is an {XP, YP} where features are not shared and thus more movement has to take place, i.e. to the specifier of the TP, as in (28b). This particular movement is too local as we’ll see in chapter and is therefore avoided.

(28) a. <phi, phi> b. <phi, phi>

ei ei

DP TP DP TP

Tom ei Tom ei

[i-3S] T v\*P [i-3S] T PredP

[~~u-phi: 3S~~] … [~~u-phi: 3S~~] ei

DP Pred’

<Tom> ei

Pred DP (= {<DP>, DP}

Not much is said on the nature of <phi, phi> by Chomsky. I assume it to be at least person features but it might be number as well since subjects that move to the specifier of TP agree more consistently in number with their verb than subjects that don’t (van Gelderen 1997: 9-10). This has been known since Greenberg (1966: 112) as Universal 33 ("When number agreement between the noun and verb is suspended and the rule is based on order, the case is always one in which the verb precedes and the verb is in the singular”). Another view is that person is more typical of T. That would explain the presence of expletives in the specifier of TP, which typically agree only in person. Baker’s (2008) Structural Condition on Person Agreement, or SCOPA, privileges the verbal head in T because it can have person as well as number and gender and it can have a specifier and agree with it in person; other categories, e.g. A, only agree in number and gender. I briefly return to this question in the sections on subject and object cycles in chapter 2.

In addition to being applied to subjects in what used to be refered to as the specifier of the TP, as in (28), the featural resolution in (B) can also be exemplified by means of *wh*-movement. The intermediate CP in (29a) will be labelled using “the interrogative feature Q, a feature of C and the head of α“ (Chomsky 2013: 45). The CP α is therefore labeled <Q, Q>. Sharing the Q-features between the PP and C in (29a) has the result that the PP does not move further, as the ungrammatical (29b) shows.

(29) a. They wondered [α in which Texas city [ C [JFK was assassinated]]]

b. \*In which Texas city did they wonder JFK was assassinated.

The fact that the *wh*-element cannot move further from (29a) to (29b) is called the `halting problem’ or `criterial freezing’ in Rizzi (2006; 2014), the basic intuition being that the *wh*-element included in the PP *in which Texas city* shares contradicting features: *yes/no* for the embedded C and *wh* for the main clause. Once it has shared Q features in the embedded CP, it is frozen.

Much criticism of the PoP approach has been regarding the feature-sharing resolution. Shim (2018) and Murphy & Shim (2018) argue that a computational burden is added if the labeling algorithm searches for matching features rather than just for a head or features. Various alternatives have been proposed, e.g. Shim (2018) claims that all XP copies are invisible and all functional categories strong so they label, as in earlier versions of phrase structure grammar. Mizuguchi (2017; 2019) argues that {XP, YP} labels can be ambiguous with either X or Y as label and that only heads without unvalued features can label. In chapter 2, I will show that <phi, phi> feature sharing is diachronically unstable but that <Q, Q> is not. So, <phi, phi> feature-sharing is less optimal than Minimal Search, as in {X, YP), which is very stable and which some structures converge to.

Apart from feature-sharing, two other areas that have been criticized in the labeling model are the invisible lower copies and the weak T and R heads. For instance, in (24), the lower copy in the specifier of the v\*P has to be invisible for the labeling to be unambiguous. But how can copies in the syntax be invisible? And, as for assuming weak T and R heads, is that *ad hoc* and needed? As has been noted since Taraldsen (1980), there is a correlation between strong agreement and the possibility to have null subjects so overt verb-movement to T (for picking up agreement) could trigger strong T. This correlation is not absolute and would therefore make it hard to acquire. There are in fact alternatives to weak T and R, some mentioned above and some argued for in Chomsky (2019). I will come back to these where relevant.

In summary, labeling of a head and a phrase presents no problems since the head labels the phrase through Minimal Search but labeling of two heads and of two phrases results in a labeling paradox. The former is resolved by having certain heads not label and the latter can be resolved either by the removal of one phrase or by feature-sharing. In chapter 2, I will show how labeling paradoxes motivate some diachronic reanalyses and that this shows that Minimal Search is the prefered option.

**4 From Islands to Determinacy**

Movement of constituents from one to another position or dependencies between two constituents have been at the heart of (transformational) generative enterprise. Early on, transformations are formulated in very language specific ways to make way for more general constraints on movement. In this section, I first describe what a UG-based, i.e. pre-1995, approach to movement would be and then how movement can be restrained in a third factor way.

*4.1 UG approaches*

Since Ross (1967), island constraints have limited phrasal movement and have given insight in the local nature of such movement. These constraints are formulated as language-specific constraints that use terms such as NPs (“a noun phrase”) and head nouns (“a lexical head noun”), e.g. in (30).

(30) **The Complex Noun Phrase Constraint** (CNPC)

No element contained in a sentence dominated by a noun phrase with a lexical head noun may be moved out of that noun phrase by a transformation. (Ross 1967: 127)

(30) rules out a sentence like (31a), derived from (31b) and with the structure in (31c), because *who* is moved out of the NP headed by the noun *rumor*. I have shown this illicit movement with a crossed through arrow.

(31) a. \*Who did I hear the rumor that he met? CNPC violation

b. I heard the rumor that he met who?

c. Who did I hear NP[the N[rumor] [that he met who]]?

Subsequent to Ross, Chomsky (1973; 1977) formulates more general constraints that capture restrictions on other kinds of movement. These are less language specific, because they use cyclic nodes that can vary, as in (32).

(32) **The Subjacency Condition (SC)**

A cyclic rule cannot move a phrase from position Y to position X (or conversely) in … X … [α… [β… Y … ] … ] … X …, where α and β are cyclic nodes. Cyclic nodes are S and NP. (Chomsky 1977: 73)

This constraint, known as Subjacency, also accounts for the ungrammaticality the CNPC in (15a) because *who* crosses two cyclic nodes. This is shown in (33) where α is NP and β is S and *who* is moving from Y to X, shown with the arrow.

(33) Who did I hear NP= α [the rumor S= β [that he met <who>]]? CNPC violation

X Y

Subjacency accounts for other island phenomena, e.g. the ban on *wh-*extraction from relative clauses, from sentential subjects, and from coordinate structures, as in (34) to (36), respectively. Here, I have left the arrows out.

(34) a. He saw the man who ate what?

b. \*What did he see the man who ate? RC Extraction violation

c. What did he see NP= α [the man S= β [who ate <what>]]?

X Y

(35) a. The man from where ate cookies?

b. \*From where did the man eat cookies? Subject Extraction violation

c. From where did S= α [ NP= β [the man <from where>] eat cookies]?

X Y

(36) a. John and who ate cookies?

b. \*Who did John and eat cookies? Coordinate Structure Constraint

c. Who did S= α [ NP= β [John and <who>] eat cookies]?

X Y

Some kind of locality also accounts for the lack of NP-movement out of tensed sentences, as in (37), and for non-construal across a subject, as in (38), the Tensed Sentence Condition and Specified Subject Condition, respectively.

(37) a. It seems they are happy.

b. \*They seem are happy. Tensed Sentence Condition (TSC)

c. They seem S= tensed [<they> are happy]

X Y

(38) a. \*They saw John’s pictures of each other. Specified Subject Condition (SSC)

b. They saw **John**’s pictures of each other.

X Specified Subject Y

Not all languages show all these island effects, and so the Subjacency Condition must be parametrized for what the cyclic or bounding nodes are. The TSC and SSC lead to a different understanding of Case and Binding Theory (e.g. in Chomsky 1981). However, even though (32) is more general than (30) and accounts for other island constraints as well, both (30) and (32) refer to linguistic entities, namely the cyclic nodes S and NP (later TP and DP).

After the 1970s, movement comes to be restrained either through locality restrictions, e.g. Huang’s (1982) Condition on Extraction Domains and Rizzi’s (2001) Relativized Minimality, or by the need to license the empty categories left behind from movement through the Empty Category Principle (Chomsky 1981: 274-5; 1986). Locality is another way to ensure adherence to the Principle of Resource Restriction mentioned above in (13): if internal merge can choose from far and near, that will result in a very indeterminate computation and will not be allowed.

I will now go into more detail about one particular constraint, anti-locality as formulated in (39), because it foreshadows determinacy, one of the third factors that is the focus of this study. (39a) states it in general terms and (39b) makes it more specific.

(39) **Anti-Locality**

a. Movement must not be too local. (Grohmann 2003: 26)

b. Movement of a phrase from the specifier of XP must cross a maximal projection other than XP. (cf. Erlewine 2016: 431 and Deal 2019: 408)

Grohmann (2003: 74) recognizes three domains within which movement occurs only once, in accordance with (39a). These are a theta domain, an agreement domain, and a discourse domain and, within these domains, dependencies that involve the complement and specifier, or the specifier and adjunct, or the complement and adjunct cannot be formed. The formulation in (39b) is more specific towards the specifier position.

Using the anti-locality in (39a), the lack of object to subject movement in (40) is accounted. In (40), the connection between the two copies of *John* involves a complement and specifier of the same (theta) domain.

(40) a. \*John likes.

b. v\*P[ John VP[ likes <John>]]. (Grohmann 2003: 12)

Anti-locality has similar effects as determinacy: both dictate that the input in a certain domain has to be unique.

Grohmann (2011) argues that subject topicalization in (41) and complementizer-less subject-less relative clauses in (42) involve adjunction to the TP (TP rather than CP for reasons of economy) and, as shown in (41b) and (42b), this would involve too local a movement inside the TP domain.

(41) a. \*John, left

b. TP[John TP[<John> left]]

(42) a. \*The man [likes Mary] lives next door.

b. The man TP[OPi TP[ti likes Mary]] lives next door.

These movements from the specifier of TP to a higher phrase violate (39b) and, as Erlewine (2016; 2020) and Deal (2019) argue, a number of other phenomena, such as anti-agreement effects and bans on subject resumption. I will come back to the subject-less relative clauses of (42) in chapter 3 because these are not universally disallowed and can be accounted for using determinacy combined with some cross-linguistic differences in the CP-TP combination. Variation in *that*-trace and *that*-less complement can be ascribed to the same differences.

In this section, I have given examples of conditions on extraction that are UG-based. Subjacency is based on the NP and S, the TSC on tense, and the SSC on certain subjects and these are all language-based not third factor based. Anti-locality is another UG-based approach because it depends on the three specific linguistic domains; determinacy operates on phasal workspaces, as I will now show, and is third factor.

*4.2 Third factor approaches*

In the spirit of attributing as much as possible to non-linguistic or third factors, Chomsky, Ott, Gallego (2019: 246) argue that determinacy is such a principle that is needed to account for the locality of movement shown in the CNPC of (15). In fact, Boeckx (2012: 4) points out that Chomsky (1964) already writes that “transformations must be unambiguous”. In this section, because it is the most complete account, I provide Goto & Ishii’s (2019) formulation of determinacy and some examples of input that must be unambiguous.

Within a WorkSpace [read phase], there can be only one object X, “avoiding determinate rule application.” Putting this positively gets us (43) and this rule, combined with a derivation by phase model, also accounts for islands.

(43) **The Principle of Determinacy**

If Structural Description (SD) for a rule holds for some [Workspace], then Structural Change (SC) must be unique. (Goto & Ishii 2019: 91)

If CP, v\*P, and DP are phases and the complement of the phase head is sent to Transfer, certain workspaces will contain more than one instance of an item. For instance, a subject in the specifier of the v\*P that moves to the specifier of the TP will have two copies in the complement of C and therefore cannot move to the specifier of the CP. That movement makes the derivation indeterminate. Indeed, English (44) shows a subject island effect where extraction of a *wh*-element from the specifier of the TP into the CP results in an ungrammatical sentence (Goto & Ishii 2019: 94).

(44) a. A picture of Mary pleased you?

b. \*Who did a picture of please you?

c. [CP who [C-did [TP [a picture of <who>] [T [v\*P [<pictures of who>] [v\* [ please you]]]]]]].

Workspace: not allowed by determinacy Transfer 1

If the subject stays in the specifier of the v\*P, there is no violation, as in (45), because the specifier of TP is filled with an expletive.

(45) a. There is a picture of who on the wall?

b. Who is there a picture of on the wall?

c. [CP who [C is [TP there [T [v\*P [a picture of <who>] [v\* …

Note that accounting for the grammaticality of (45) would be difficult under Subjacency and related constraints because only one TP is crossed.

The subject cannot itself be moved either, as is obvious from the impossiblity to topicalize in English (46a). Determincacy rules out having the choice of two copies in the workspace, as shown in (46b). Determinacy also provides an explanation for an analysis where the *wh*-element stays in the specifier of TP in (47ab). If it moved to the specifier of CP, as shown in (47c), the structure would be indeterminate.

(46) a. \*John, likes berries. (Topic intonation on *John*)

b. CP[John TP[<John> vP[<John> likes berries]]].

(47) a. Who likes berries?

b. TP[who [T vP[<who> likes berries]]].

c. CP[who [C TP[<who> [T vP[<who> likes berries]]]]].

Empirical evidence for (47b) over (47c) is the lack of Subject Auxiliary Inversion. If *who* doesn’t move to the specifier of CP, the C head would not be present to house the auxiliary. Both (46) and (47) follow from determinacy: merge in the CP domain would have a choice of two copies, in the specifier of the TP and the specifier of the vP, and therefore neither moves to CP.

As argued in detail by Goto & Ishii (2019), in addition to banning extraction from subject position and movement of the subject to a topic position, the requirement for determinate input also accounts for the *that-*trace effect (to be shown in chapter 3) and the impossibility of further-raising, as in (48a), with a derivation, as in (48b).

(48) a. \*John seems that reads a book.

b. John T <John> seems that <John> T <John> reads a book.

workspace

Further-raising, earlier refered to as the Tensed S Condition (TSC) because a DP cannot move out of a tensed clause, is accounted for by determinacy, as is seen from the multiple copies of *John* in the workspace in (32b).

Section 4 has shown how locality constraints that are earlier formulated in language specific ways can be rephrased in terms of more abstract principles, namely through determinacy. In chapters 3 and 4, I will say more about how some variation and diachronic reanalyses can be explained by appealing to determinacy. Having provided a background to determinacy and other third factors in sections 2 to 4, I now turn to how these relate to language variation and change, the topic of this book.

**5 Variation and Change**

In this book and in earlier work, my interest lies in systematic patterns of language change because these give insight into the cognitive processes at play when humans acquire and use language. As such, I will discuss grammaticalization and its counterpart renewal, which together can, of course, be seen as a linguistic cycle. Jespersen (1921: chapter 14, §6) describes the tension between economy and innovation as a `tug-of-war' and von der Gabelentz (1901: 256), as mentioned in the Preface, sees language history as moving between comfort and clarity. Within the generative framework, explanations for grammaticalization and the linguistic cycle usually involve economy and, in this book, I also mostly focus on economy and explain it through third factors. Table 1.1 provides a preview of what will be discussed in this book using these two processes as a guide. In parentheses, I have also added other cases of complementary renewal discussed elsewhere.

|  |
| --- |
| **Economy**   **Renewal/innovation**  pronoun to agreement (ch 2) new topic pronouns as subjects; ch 4  demonstrative to article (ch 2) new locative adverbs to emphasize deixis (ch 6)  demonstrative to complementizer (ch 2) same (ch 6)  negative adverb to negative (ch 2) new negative; ch 2  topic to subject (ch 4) new topics (ch 4)  pronoun to copula (ch 4) new pronoun subjects (ch 4)  auxiliary grammaticalization (ch 4) grammaticalization of new auxiliaries (ch 4)  adverbial to topic/DP (ch 6) new adverbial (not discussed) |

Table 1.1: Two forces of change

Grammaticalization is a process whereby lexical items lose phonological weight and semantic specificity and gain grammatical functions. The best-known examples of lexical elements changing to grammatical ones are verbs reanalyzed as auxiliaries, demonstratives as articles, and prepositions as complementizers. Grammaticalization is a descriptive term and I often use *reanalysis* to emphasize the role of the child acquiring the language and making the change (van Gelderen 2011). Technically, it is not **re**analysis since a child hears language and analyzes the linguistic input in the most economical way. This may result in a grammar different from that of an earlier generation, which leads linguists to refer to the phenomenon as reanalysis. Grammaticalization is thus seen as following from the innate properties of the language faculty and the task of the linguist is to unearth the principles. Examining unidirectional language change provides a unique window on the principles of the language faculty.

What sets grammaticalization in motion is hotly debated. Meillet (1912: 139) writes that what provokes the start of the (negative) cycle is the need to speak forcefully (“le besoin de parler avec force”). Haspelmath (2018: 11-4) claims extravagance is key: in order to make a point, a speaker uses a stronger form, e.g. of a negative, and the regular form erodes. Others have argued that economy is the instigator of change (Jespersen 1917; Roberts & Roussou 2003; van Gelderen 2004; 2011; and Schnell 2018). My own view is currently that both phonological reduction and pragmatic strengthening can start a change. In this book, in chapters 2 and 4, I mostly provide mechanisms for the grammaticalization side; the sources of extravagance cannot be predicted and extravagance is fine as long as it renews the features that are lost. Renewal is mostly explored in chapter 6.

When a preposition is reanalyzed as a complementizer, the older use of preposition may persist or a new one may arise, through grammaticalization (e.g. of a noun to a preposition) or through borrowing. So grammaticalization necessitates renewal and the entire process is sometimes referred to as a *linguistic cycle*, whose different layers may be visible in a language. As Mithun (2000: 232) says, “morpheme order often does reflect the sequence of grammaticalization of affixes: those affixes closest to the root are indeed the oldest, and those on the periphery of words can be seen to be more recent additions”.

In earlier work, e.g. van Gelderen (2004) and (2011), I argue that Economy Principles are present in the initial cognitive system or Universal Grammar of the child and that they account for parts of linguistic cycles. Economy Principles, such as the Head Preference Principle, Late Merge, and Featural Economy channel change. Structural and Featural Economy depend on linguistic information and, if less emphasis is placed on these, they should be reformulated as non-linguistic, i.e. third factor, principles. It will therefore be the purpose of the book to see if third factor principles can account for systematic change.

`Variation’ precedes `change’ and is therefore first in the title of this book, although the main emphasis is on the latter. The Minimalist Program makes it possible to think about cross-linguistic variation in terms of parameters that affect lexical items or optimal computations that allow various orderings and I discuss these approaches in chapter 3. The variation I am concerned with in that chapter and in chapter 5 concerns the TP-CP boundary. Languages have an option to reduce that boundary in two ways maintaining equally economic derivations.

**6 The approach, sources, and glosses**

This book is about language change and variation as determined by third factors. As mentioned, I have looked earlier at languages change as systematic due to innate principles. Although I return to some of the same changes investigated in this earlier work, I have tried to give some new examples.

Chapters 2 and 4 provide data from a wide variety of languages and their data come from published grammars, dictionaries, and corpora, for which careful work I am grateful to the authors and compilers. Chapters 3, 5, and 6, due to the nature of phenomena discussed, limit themselves mostly to Germanic, and English in particular, and Romance, mainly French.

The corpora used here are the Corpus of Late Modern English texts (CLMET), the Corpus of Contemporary American English (COCA), the British National Corpus (BNC), the Corpus of Historical American English (COHA), the Helsinki Corpus of older English texts or HC (see Kytö 1993 for a description of this corpus), the French Corpus d'entretiens spontanés or CdES ([www.uwe.ac.uk/hlss/llas/iclru/corpus.pdf](http://www.uwe.ac.uk/hlss/llas/iclru/corpus.pdf)), and the *Orléans Corpus*, part of the *ELICOP Corpus.* I have also made use of individual electronic texts, made available by the Oxford Text Archive (OTA) and the Dictionary of Old English project (DOE) at the University of Toronto or Project Gutenberg ([www.gutenberg.org](http://www.gutenberg.org)). With many of these texts, I have used the concordance program MonoConc (<https://www.monoconc.com/>). For languages such as Afrikaans, Dutch, and French, Advanced Google searches have proved helpful. The choice of which to use depends on the size of the query.

Mostly, I provide bibliographical references as given in the electronic resources, such as the DOE corpus or Oxford English Dictionary (OED). If the reference can be found easily, e.g. via the OED, DOE, COHA, or COCA, it will not be listed in the bibliography. I did not want to clutter up the bibliography with works I use only once or twice as example sentences. References to Beowulf are from Fulk, Bjork, and Niles (2008), to the Old English Gospels from Skeat (1881-7), to the Anglo-Saxon Chronicles (Peterborough and Parker) from Thorpe (1861), to Layamon from Brook & Leslie (1963), to Chaucer from Benson (1987), and to Shakespeare from the the OTA electronic edition of the First Folio. I also simplify glosses where appropriate but have kept the glosses and punctuation as much as possible as they were in the original source. Data from corpora and google-searches often incorporate unusual spellings or punctuation. I have left these as they were in the original.

**7 Conclusion, outline, and findings**

In this chapter, I have provided some background on the shift in emphasis from Universal Grammar (UG) to third factors and have given a description of selected third factors, e.g. PIC, IC, EC, NTC. The main emphasis has been on the Labeling Algorithm and the Principle of Determinacy. Generative models focus on the Faculty of Language as represented in the mind/brain. UG is the “system of principles, conditions, and rules” that all languages share through biological necessity. However, although UG received a lot of attention, recently principles “grounded in physical law” and the general “capacity to acquire knowledge” have been emphasized more. This chapter has also introduced two main reasons of language change, those caused by Economy and those by Innovation.

The outline of the book is as follows. Chapter 2 turns to some linguistic changes that can be accounted for by solving labeling paradoxes. In Chomsky (2013, 2015), merging a head to a phrase no longer automatically results in the projection of that head into a label and labeling paradoxes arise when two items merge that are (too) symmetric. These paradoxes can be resolved in several ways, namely by having one of the XPs move or by feature-sharing. The resolution discussed in this chapter involves the change from phrase to head, a possibility not discussed by Chomsky. The changes discussed involve pronouns reanalyzing as functional categories, i.e. as T or v, and demonstratives reanalyzing as articles and complementizers. In the changes, a third factor resolution to the labeling problem can be observed: a change from feature-sharing and agree to Minimal Search. The changes also show other factors involved, e.g. the difference between <Q,Q> and <phi,phi> sharing. The *wh*-elements *whether* and *how* are specifiers and show no reanalysis to head, which indicates their feature-sharing is stable.

In chapter 3, I consider how the Principle of Determinacy disallows certain constructions and what options are available to `fix’ these ungrammatical structures. Chomsky, Gallego, & Ott (2019) rule out having more than one choice in the workspace/phase, i.e. the workspace must be determinate. If a phrase moves from one position to another in the same phase, i.e. without being transferred/eliminated from the workspace, merge will face the dilemma of which of the two copies will move to a higher position. determinacy is a third factor formulation of anti-locality. The principle accounts for the Subject Island Condition and the ban on topicalization of the subject. The chapter focuses on how the CP-TP complex makes it hard for syntactic objects to move from the specifier of the v\*P to the specifier of TP and then higher, to positions where they check the Q-features. Such a movement results in a *that*-trace violation. Deleting the C solves this problem and also explains subject-less relative clauses and complementizer-less object clauses in English. Other languages don’t posit a TP and solve the anti-locality problem that way. These languages lack *that-*trace effects but don’t delete the complementizer.

In chapter 4, I provide examples of reanalyses, rather than different choices, that are prompted by the Principle of Determinacy. The first change involves the reanalysis of a loosely adjoined phrase as a subject argument because a topicalized subject does not result in an optimal computation. The principle also accounts for changes involving copulas, both the change from demonstrative to copula and from topic to subject. Auxiliaries and quantifiers in English provide a fertile ground to investigate determinacy because these move from lower to higher heads and specifiers, respectively. It is shown that auxiliary movement indeed violates determinacy and that options exist to circumvent it, e.g. skipping T and reanalyzing as a higher functional head. Floating quantifiers do not violate determinacy because they first move as QPs and subsequent moves are of DPs.

Chapter 5 examines the tension between determinacy and labeling. Due to determinacy, if there is a TP, Verb-second (V2), i.e. V to C, is not possible but TP expletives are. Conversely, if there is no TP, V2 is possible but TP expletives aren’t. I will argue that older stages of English lack a TP and that this enables both V2 and movement of the subject from the specifier of the v\*P to the specifier of the CP. It also makes the grammatical subject position and the expletive optional. Later stages of English introduce a TP, which enables expletives in the TP but bars V2. The loss of V2 and introduction of expletives has not been linked before and this offers a new perspective both on the data in English and in V2 languages and on the tension between the two third factor principles.

Chapter 6 discusses another issue in efficient computations that language change casts some light on, namely through changes affecting adjuncts. Chomsky (2000: 133; 2001; 2004: 118) distinguishes between arguments (subjects and objects) and adverbials in terms of ordered pair-merge and unordered set-merge, respectively. I examine changes of VP and NP adjuncts to specifiers positions of functional categories and of adjuncts to arguments. These show that pair-merge is avoided. Adjuncts that are in specifier positions of functional categories in their turn reanalyze as heads, in accordance with the labeling pressures discussed in chapter 2. I also address the question if subordinate and insubordinate adjunct clauses change in unidirectional ways and conclude that they don’t.

**The major conclusions** to be reached in the bookwill be as follows.

(a) Language change shows that language learners reanalyze phrases as heads. Such reanalysis is expected under a third factor approach if labeling through Minimal Search, a third factor, is prefered over other forms of labeling.

(b) Features play an essential role in syntax. This work shows that the uninterpretable features of the phase head minimally involve person because pronouns are reanalyzed as T once they’ve lost all features except person. It also reveals that <phi, phi> feature sharing is diachronically unstable but that <Q, Q> may not be. Linguistic change is sensitive to different person features: first person is the first to start the subject cycle while third person starts the object cycle.

(c) T need not be weak or strong, as in Chomsky (2015). It can label the phrase it heads but needs feature-sharing to label the phrase that is the result when the DP subject merges.

(d) Determinacy violations arise in the clausal area where the CP and TP meet. These violations can be resolved by either having TP but no CP (Doherty 2000; Chomsky 2015) or the reverse (Platzack 1987, Haider 1991, van Gelderen 1993, Legate 2014, and Erlewine 2014). The TP/T can be skipped in German, Dutch, and earlier English. This open resolution to determinacy is similar to that discussed by Obata, Epstein, and Baptista (2015) and Müller (2009) regarding the optionality of how merge and agree are ordered.

(e) Feature Inheritance is either from C to T (in languages with obligatory T, such as modern English) or from C to v/v\* (in languages with optional T, such as Dutch or Old English).

(f) Determinacy favors the change from more movement to less movement and therefore from a topic to a subject and from a verb to an auxiliary.

(g) Pair-merge is avoided in favor of incorporation as a specifier of a functional category.

(h) While the book focuses on third factors, second factors, as in (2), are derivable from third factors. Both factors help the learner resolve ambiguity through reanalysis.

**Chapter 2**

**Labeling in Language Change**

**1 Introduction**

As we’ve seen in chapter 1, merging a head to a phrase no longer automatically results in the projection of that head into a label. Labeling is a requirement of the interfaces and not part of merge. Labeling paradoxes arise when two items merge that are (too) symmetric and these paradoxes can be resolved in several ways, by having one of the XPs move, or by feature-sharing, or by ignoring one label (the root) (cf. Chomsky 2013; 2015).

In this chapter, I examine some linguistic changes that can be accounted for by solving labeling paradoxes. The resolution involves one not discussed by Chomsky: the change from phrase to head where labeling is done through Minimal Search. Van Gelderen (2004: 18) justifies an Economy Principle, the Head Preference Principle, to account for the change from phrase to head but this principle uses linguistic concepts (specifier and head) and I am therefore updating these concepts using the third factor Minimal Search. Diachronic phrase to head reanalyses have been identified by Jäger (2005; 2010), Weiß (2007; 2019), Willis (2007), Bayer & Brandner (2008), and Bácskai-Atkári & Dekány (2014).

As explained in chapter 1, a linguistic cycle consists of grammaticalization followed by renewal or emphatic doubling followed by grammaticalization. There is a debate as to whether grammaticalization or strengthening starts first and I think both scenarios are possible: with subject cycles, grammaticalization may be first (see e.g. Schnell 2018) and, with negative cycles, pragmatic strengthening may be (Kiparsky 2011). In the current chapter, we will see cases of the pronoun reanalyzing as agreement and, in chapter 4, we will see an example of renewal of the subject by a topic. Other cycles are also discussed, i.e. the demonstrative, *wh*-, and negative cycles, in this chapter and instances of renewal are provided in chapter 6.

The outline of the current chapter is as follows. Sections 2 and 3 examine one side of the subject and object cycles from a third factor perspective, namely the grammaticalization of independent pronouns as agreement on the verb. Section 4 looks at possible agreement cycles in ergative languages. Section 5 turns to demonstrative pronouns that reanalyze as articles and complementizers and section 6 investigates *wh*-elements that remain stable although they are phrases in specifier position. Section 7 discusses the well-known Negative Cycle and section 8 is a conclusion.

**2 The Subject Cycle**

In this section, I first sketch what happens in a subject cycle, give examples of typical cycles, and provide an explanation from a labeling perspective for the first part of the cycle.

*2.1 Pronouns to agreement*

The typical stages of the subject cycle are given in (1) where English words are used for convenience.

(1) a. They (often) eat tomatoes.

b. They’eat tomatoes.

c. (They) th’eat tomatoes.

d. They (often) eat tomatoes.

In (1a), the pronoun is fully independent and need not be adjacent to the finite verb whereas, in (1b), it is cliticized to the verb and its status is ambiguous. If the clitic is interpreted as agreement marker, this stage will be one of null subject (or pro-drop). In (1c), the earlier independent pronoun is renewed by a new one that is ambiguous between being in topic or in subject position (as will be shown in chapter 4). If *they* is in topic position (with a default nominative case), the clitic could still count as the subject; if *they* is the subject, the clitic is now an agreement marker on the verb. Stage (1d) is the same as (1a) with a renewed subject pronoun. Topics are definite whereas quantifiers and indefinites cannot be topics and must be subjects. If a quantifier appears in (1c), it is a subject because they cannot be topics. Languages can thus be in different stages of the cycle; they can have just subject pronouns, just agreement, or both.

Distinguishing agreement (having uninterpretable features) from pronouns (with interpretable features) is notoriously difficult. My distinction is based on Bresnan & Mchombo (1987), Siewierska (2004), Siewierska & Bakker (2005), and Fuß (2005). That approach sees the obligatory nature of the agreement marker as crucial.

If languages acquire agreement markers from erstwhile pronouns, they are expected to resemble these and that is indeed the case in many languages. One also expects cross-linguistic surveys of languages to show perhaps a 30% distribution of each stage in (1). Typological work provides percentages of agreement and pronouns in the world’s languages but, since it is hard to decide in (1b) and (1c) if the agreement occurs, it could be as much as twice times 30%, i.e. 60%, and this is what the figures appears to show. Bybee (1985) estimates that 56% of languages exhibit verbal agreement with the subject; Siewierska’s (2008) data put that at 72% and Dryer’s (2013) data at 61%. Subject pronouns appear in 30% of Dryer’s (2013) languages (some optionally and some obligatorily). Here too, it is notoriously hard, however, to determine this, especially if the pronominal argument languages are taken into account where the verbal affixes count as pronouns (see Jelinek 1984). The typological data fit the scenario in (1) because the agreement between 56% and 72% illustrates stages (1bc), two-thirds of the cycle.

We see many languages that still show very similar forms for pronouns and agreement. The Basque verbal prefixes *n-, g-, z-* resemble the onsets of the pronouns *ni* ‘I’, *gu* ‘we’, and *zu* ‘you’ (Tauli 1958: 99). Proto Indo European verbal endings *-mi, si, -ti* are considered to arise from first, second, and third person pronouns (e.g. Bopp 1816). Ross (2004) chronicles the sources of agreement markers in Oceanic and Hale (1973: 340) shows that in Pama-Nyungan inflectional markers are derived from independent pronouns: “the source of pronominal clitics in Walbiri is in fact independent pronouns”. Likewise, Mithun (1991) claims that Iroquoian agreement markers derive from Proto-Iroquoian pronouns and Haugen (2008) argues that Nahuatl agreement markers derive from earlier pronouns. Fuß (2005) and van Gelderen (2011) cite many additional examples.

French is a language for which evidence of all the stages in (1) can be found. Old French has optional pronouns that need not be adjacent to the verb, as (2) shows for the second person singular *tu* ‘you’.

(2) *Si con*  ***tu****meismes  le preuves* Old French

If when you self it prove

`If you prove it yourself.’ (<http://romandelarose.org>, Selden Supra 57, 40v)

Foulet (1961: 330) confirms that all personal pronouns can be separated from the verb in Old French. By the time of Modern (colloquial) French, *je* and *tu* obligatorily precede the finite verb, as the ungrammaticality of (3) shows[[1]](#footnote-1). See Kayne (1975: 82-5) for additional arguments.

(3) \****Je/tu*** *probablement ai/as lu ça*  Colloquial French

1S/2S probably have read that

`I’ve probably read that.’

In addition, as will be shown in chapter 4, a frequent renewal in the form of *moi* (and *toi*) appears, as in (4).

(4) *euh* ***moi je***  *trouve ce qui en souffre le plus* …Colloquial French

Eh me 1S find that who of.it suffers the most

`I think that the one that suffers the most is ...’ (*Orléans Corpus*).

The case of *moi* is oblique, which is the default for a topic; in some languages, the case of the topic would be nominative, i.e. the same as that of the subject.

Table 2.1 shows the formal and the colloquial verb endings. The endings of most of the formal verbs are only visible in the writing and not audible. This means a loss of the uninterpretable features on T and a replacement of them with interpretable pronoun features.

|  |
| --- |
| Formal French Colloquial French  S 1 je chante [ʃɑ̃t] je chant [ʃɑ̃t]  2 tu chantes [ʃɑ̃t] tu chant [ʃɑ̃t]  3 il/elle chante [ʃɑ̃t] il/elle chant [ʃɑ̃t]  P 1 nous chantons [ʃɑ̃tõ] on chant [ʃɑ̃t]  2 vous chantez [ʃɑ̃te] vous chantez [ʃɑ̃te]  3 ils/elles chantent [ʃɑ̃t] ils/elles chant [ʃɑ̃t] |

Table 2.1: The present tense of the verb *chanter* `to sing’

Other phenomena connected to the cliticization/affixation of the subject pronoun to the finite verb are a loss of subject-auxiliary inversion in questions and changes in preverbal negative markers and object clitics. Subject-auxiliary inversion occurs in formal French, as seen in (5a), but, as mentioned in e.g. Lambrecht (1981), Auger (1996), Adli (2015), and Reinhardt (2019), it is lost in more colloquial versions shown in (5bc). Inversion, as in (5a), “is extremely rare in spoken French and is expected to disappear ultimately” (de Wind 1995:24).

(5) a. *Où* ***es-tu*** Formal French

where be-2S

‘Where are you?’

b. ***t’-es*** *où* Colloquial French

2S-be where

‘Where are you?’

c. *où* ***t’es*** Colloquial French

where 2S.be

‘Where are you?’

The reason is of course that the subject agreement marker is a prefix so no longer compatible with (5a).

The first pronouns to grammaticalize into agreement markers are typically the first and second person singular ones. For instance, since Lambrecht (1981), it has been argued that French weak pronouns such as *je* ‘I’ and *tu* ‘you.SG’ are agreement markers on the verb and frequently doubled, as in (4). What has also been known for a long time is that third person subject pronouns are slower to gain agreement status. To be an agreement marker, they would have to appear obligatorily and that is not the case in most varieties of French. Most indefinite subjects are not doubled except in a few varieties, as in (6) from Spoken Swiss French.

(6) *c'est que* ***chacun il*** *a sa manière de ...*  Swiss Spoken French

it.is that everyone 3S has his way of

‘Everyone has his own way of ...' (Fonseca-Greber 2000: 338).

The reason the third person is ‘slow’ is that there are more features to be shared, e.g. gender. Gender and possibly number are deleted when the pronoun becomes the agreement marker, as in (7a), where *i* is marked for only third person (singular or plural) although *les tomates* are feminine plural, as shown in the formal French in (7b).

(7) a. ***Les tomates, i*** *sont encore vertes* Spoken French

the tomatoes 3 are still green.FP

‘The tomatoes, they are still green.’ (Lambrecht 1981 : 40)

b. ***Les tomates, elles*** *sont encore vertes* Formal French

the tomatoes 3FP are still green.FP

‘The tomatoes, they are still green.’

Another reason that first and second person may be first to grammaticalize is that they are more accessible, according to the animacy hierarchy (Silverstein 1976), more definite, and therefore more likely to be topical and to be deleted. As is known from e.g. Modern English (8), subjects are often dropped in first person and that would make it easier to interpret a first person pronoun as subject agreement.

(8) Will leave soon. First person drop.

Thus, typical subject cycles start with the subject pronoun being reanalyzed as verbal agreement. Once that happens, the topic may reanalyze into a subject, as we’ll see in chapter 4. In this section, we’ve examined the first part of the cycle, i.e. the combination of the features on T with those on the pronoun, initially as interpretable but then as uninterpretable when the topic becomes a regular subject. I’ll now turn to what may be behind this reanalysis.

*2.2 Labeling*

As mentioned in chapter 1, a DP in the specifier of what used to be called the TP (in pre-labeling algorithm days) must share phi-features with T in order to be labeled as <phi, phi>. As has been pointed out (e.g. Shim 2018 and Murphy & Shim 2018), the labeling in (9a) of an asymmetric structure is not as simple as labeling through a head in (9bc). (9a) is the situation before the reanalysis of a pronoun as an agreement marker and (9bc) after.

(9) a. <phi, phi> b. TP c. TP

ei ei ei

*les tomates* TP T v\*P T v\*P

[i-3, PL, F, definite] ei *i* [u-phi] ei

T v\*P [i-3] *les tomates* …

[~~u-phi:~~ 3, P] 4 [i-3, PL, F, definite]

<*les tomates>* …

As (9a) shows, a full phrase in subject position and T share person and number features and the DP cannot be confused by the language learner for an agreement morpheme because it has a lot more additional features. Pronouns are ambiguous and, once they have lost definite and gender features, such as the third person *i* in (9b), they can be reanalyzed as T, either as a T with interpretable features, as in (9b), or with uninterpretable ones in (9c). Once the phi-features are uninterpretable, a new subject is necessary, as in (9c), either a full DP or a null subject.

Thus, a very straightforward escape from the labeling paradox is to have a subject that has the status of a head. Chomsky (2013: 46) says that (pronoun) subjects cannot be heads because they would label the TP incorrectly, as D-headed, not T-headed. I will argue that the features of T in (9bc) are agreement features and not D or T. This explains why pronouns change from phonologically fully independent phrases to agreement markers, as has happened in a number of languages, perhaps the most well-known case being French. A fully phrasal pronoun (that can be coordinated and modified by an adverb or adjective) cannot be seen as having the same agreement features as T and can only be labelled as <phi,phi>, as in (9a). A head (that has to be adjacent to a verb) can be seen by the child acquiring French (or English) as similar in phi-features to T. When the features of a pronoun overlap with those of the agreeing T, they may disappear and a structure as in (10) may be the result. This structure can, of course, receive a label.

(10) PhiP

ei

Phi v\*P

This account is very similar to accounts such as Roberts (2010) and van Gelderen (2011) who suggest the change from pronoun to agreement marker is due to an ambiguity in the data as to whether the pronoun actually values the features of T or is itself in need of valuation. Ambiguity shows the interdependence of second and third factor principles: the ambiguity in the data (second factor) leads to a more efficient, third factor analysis. Let’s look at the details of the labeling.

In Chomsky (2016), the T merges with the v\*P and the subject moves internally (to the specifier of the TP) after which C is merged. There are, of course, no labels, such as CP or TP, or branches, just features, but I have added the labels and branches for convenience. C has uninterpretable agreement features (u-phi) which it values with the subject before transferring the features to T. Once this happens, the {DP, TP} sequence can be labelled as <phi, phi> after it arrives at the interface. In the scenario I argue for, given in Figure 2.1, the DP with its interpretable phi-features is reanalyzed as head and valuation and labeling occur without a need to transfer features.

|  |
| --- |
| a. CP b. CP  ei ei  C TP = <phi,phi> > C TP  u-phi ei u-phi ei  DP T’ T vP  i-phi ei i-phi  T vP  valuation of u-F on C just valuation  and transfer to T >  labeling due to feature transfer labeling is Minimal Search |

Figure 2.1: Reanalysis of the subject resulting in labeling through Minimal Search

After the pronoun is reanalyzed as agreement, there is optional renewal in many languages, as (4) and (6) show, which will be discussed in chapter 4.

As mentioned in chapter 1, a point that remains unexplored is the difference between SV and VS structures in terms of richness of verbal agreement. This is formulated by Greenberg as one of his universals and quoted in (11).

(11) “When number agreement between the noun and the verb is suspended and the rule is based on order, the case is always one in which the verb precedes and the verb is in the singular”. (Greenberg 1966, Universal 33)

Subjects that remain in the specifier of the v\*P (in VS constructions) use fewer features for labeling their projections, e.g. person and gender in Arabic but not number. The uninterpretable features in T agree with these rather than with the full set of phi-features on the DP (in SV constructions), as shown in (12ab), respectively.

(12) VS SV

a. TP b. CP

ei ei

T v\*P/VP = <phi, phi> C TP = <phi, phi>

[u-phi] ei [u-phi] ei

DP v\*P/VP DP TP

ei [i-phi] ei

v\*/V … T

A full account would be to say that there are two sets of phi-features, one on T that is inherited from C and one that stays on C. More on this possibility in section 6 of the next chapter.

In conclusion to section 2, I have argued that subject pronouns reanalyze as agreement features, i.e. as phi-features on T, to simplify the labeling. Once the DP is a head, labeling proceeds through Minimal Search, a third factor principle.

**3 The object cycle(s)**

I’ll now turn to the object cycle, identified by Givón (1976: 157), in which a pronominal object is reanalyzed as verbal agreement. This cycle is more complex in a number of ways. First, as Haig (2018ab) shows, this cycle is often disrupted before the pronoun becomes agreement. Second, since object agreement may appear on T and on v, there are two different possibilities for objects to reanalyze.

In 3.1, I show, with examples from Romance, Athabaskan, Bantu, and a few other languages, that objects pronouns can be reanalyzed as agreement markers. Objects lag behind subjects when we can see both cycles in action and that is presumably related to the nature of the phi-features on T and v\*. In 3.2, I discuss French where, in section 2, we have seen a subject reanalyzing as agreement and where the preverbal object pronoun also shows signs of becoming agreement. This agreement marker is a portmanteau morpheme (of subject and object marking) in T. Both the change in sections 3.1 and 3.2 are accounted for in terms of labeling pressures.

*3.1 Pronouns to agreement*

A typical object cycle is given in (13), again a fictitious case for ease of exposition. Let's say that a language has a fully independent object pronoun, as in stage (13a). Since this pronoun can be coordinated and modified and need not be close to a verb, it is a full phrase. A possible next stage is for speakers to optionally analyze this object pronoun as a head, as in (13b). This head cannot be coordinated or modified and is phonologically dependent on the verb. The next stage might be for the object to be reanalyzed as an agreement marker. Once it has uninterpretable features, it could be renewed through an emphatic or some other form, as in (13c). The last stage, as in (13d), is similar to the first with the emphatic counting as the regular argument.

(13) a. I saw yesterday them (and you).

b. I saw 'm (\*them).

c. I saw'm THEM.

d. I saw them.

As in the case of the subject cycle, if languages reanalyze pronouns as agreement markers, cross-linguistic surveys of languages are expected to reflect this. Siewierska’s (2013) data suggest that verbal object marking occurs in 57% of the languages surveyed, i.e. stage (b), but not much is known about the obligatory appearance of object pronouns. Many languages show evidence of an object cycle or a partial one, e.g. French, Spanish, Athabaskan, Persian, Arabic, Kosraen, Swahili, and Rwanda.

Maddox (2019: 71-2; 83-86) and Fischer et al (2019), each in slightly different ways, have argued for an object cycle in the history of Spanish. According to Maddox, in Latin and Old Spanish, the object pronoun is separate from the verb, as in (14), and it can precede or follow the verb in (15), just like a full DP.

(14) *si* ***lo*** *non fiziere, non erede.*  Old Spanish

if it not 3S.do not inherits

‘If he does not do it, he does not inherit.’ (*Fuero de Cuenca*, para. 100; 1284-1295, from Maddox 2019: 71)

(15) a. *El rrey recibio-****lo*** *muy bien.*  Old Spanish

the king received-him very well

‘The king received him very well.’

b. *Ellos* ***lo*** *entendieron.*

they it understood

‘They understood it.’ (from Rivero 1986, as cited in Maddox)

Old Spanish differs from Latin in not modifying or coordinating the pronoun, indicating a reanalysis to a D head (Maddox 2019: 89). If there is an auxiliary, the pronoun attaches to the participle, as in (16), indicating a reanalysis to v.

(16) *ha* ***lo***  *perdido todo que no huele nada…* Old Spanish

has it lost all REL NEG smell nothing

`He has lost everything who doesn’t smell anything.’ (Anonymous, Traducción del Libro de las pronósticas de Gordonio; 1495, Maddox p.c.)

In Modern Spanish, Maddox demonstrates that object pronouns are immediately adjacent to the verb and are analyzed as v-heads. In Standard Spanish, the object pronoun is in complementary distribution with a full DP, as in (17).

(17) a. *Vimos la casa de Maria*  Standard Spanish

saw.1P the house of Maria

b. \***La** vimos la casa de Maria

it saw.1P the house of Maria

‘We saw Maria's house.’ (van Gelderen 2011: 102)

A definite and animate pronoun is less expected to be an object and it is therefore marked specially with Differential Object Marking (DOM), as in Spanish (18), unlike the DP in (17a). The additional final object is an important step towards the change of the preverbal pronoun to agreement marker.

(18) ***lo***  *vimos* ***a él***  Standard Spanish

him 1P.saw OM him

‘We saw him.’ (from Jaeggli 1982)

Already in Old Spanish, pronouns are optionally doubled, as (19) shows. For Fischer et al, the doubling takes over the pragmatic marking of accessible, topical material that V to C movement marked (topical elements were to the left of the verb).

(19) *yo* ***les*** *fiz saber* ***a ellos*** Old Spanish

I them made know to them

`I let them know.’ (from Fischer et al 2019: 56)

As is well-known, in many varieties, the change has gone further: in Porteño or River Plate Spanish spoken in Argentina, Uruguay, and Paraguay (Suñer 1988), Andean Spanish, and Amazon Spanish, doubling occurs with a (specific) nominal, as in (20), that may or may not be preceded by the case marker *a*.

(20) *Pedro* ***lo***  *vió* ***a Juan***  River Plate Spanish

Pedro him 3S.saw OM Juan

‘Pedro saw Juan.’ (Suñer 1988)

In other varieties, the object marker is not present and there is no definiteness or animacy restriction on the direct object. Hill (1987) shows that speakers of Malinche Spanish (spoken in the area of Puebla and Tlaxcala in Mexico) have clitics and nominals without a case marker, as in (21), and Zdrojewski & Sánchez (2014: 165) show the same for Andean Spanish in (22).

(21) ***lo*** *trae* ***un chiquihuite***  Malinche Spanish

it 3S.brings a basket

‘He brings a basket.’ (Hill 1987: 74)

(22) *Eso también* ***lo*** *mata* ***las plantas*** Andean Spanish

that too it kills the.FP plants.FP

`That too kills the plants.’ (Zdrojewski & Sánchez 2014: 165)

Note that the object pronoun has lost number and gender in (22), a reliable sign of grammaticalization to object marker.

If the pronoun has indeed become agreement, it should be able to double with a quantifier. In Standard Spanish, this is not the case, as (23) shows; in Southern Latin American and Basque Spanish, as Franco (1993) argues, doubling is possible with a genderless marker *le*, as in (24).

(23) \***A quién lo** viste Standard Spanish

to who him saw.2S

‘Who did you see?'

(24) ***A quién le*** *viste*  Argentinian Spanish

to who him saw.2S

‘Who did you see?' (Franco 1993: 141)

In (21), (22), and (24), the erstwhile object pronoun functions as an agreement marker on the verb. If the verb first merges in v\* and then moves to T, the object agreement marker could be argued to be in v\*. However, in Modern varieties of Spanish, the object marker precedes the auxiliary, as in (25), and the auxiliary doesn’t start out in v\* but outside of the v\*P.

(25) ***Lo*** *he discutido* Standard Spanish

it have argued

`I’ve argued it.’

Therefore, one could argue that Spanish has two sets of features in T, for subject and for object agreement, something I will also argue for French in section 3.2.

In the Athabaskan family, there is a change from northern languages to southern ones in incorporating the object as agreement. A representative of a northern language is Kaska and of a southern one Navajo (see more van Gelderen 2011: 113-5). In Kaska, the incorporated pronoun is in complementary distribution with another noun, as (26) shows, whereas it isn’t in Navajo (27), indicating it is agreement.

(26) a. ***me****ganehtan* Kaska

me-ga-ne-0-h-tan

3S-at-ASP-3S-CLF-look

`He looks at her’.

b. ***ayudeni*** *ganehtan*

ayudeni ga-ne-0-h-tan

girl at-ASP-3S-CLF-look

He looks at the girl(s). (Jelinek 2001)

(27) a. ***'atoo'******yí****nídlaa'ísh* Navajo

'atoo' yí-ní-dlaa'-ísh

soup 3S-2S-eat-Q

`Did you eat the soup?'

b. ***yí****nídlaa'ísh*

yí-ní-dlaa'-ísh

3S-2S-eat-Q,

`Did you eat it?' (Jelinek 2001: 23)

Other languages are in various intermediate stages, e.g. Persian (28) has what looks like an affix but this affix is still incompatible with a full object so not yet an agreement marker. Haig (2018ab) argues that, in its long history, Persian pronouns haven’t advanced much towards agreement markers and that “unlike subjects, they fail to achieve full person agreement status, and instead plateau at the stage of Differential Object marking” (2018a: 785).

(28) *pursed-am-****ash*** Persian

asked-1S-3S

`I asked him’

Varieties of Arabic restrict doubling, as in (29), to certain persons while Kosrean (30) shows a doubling that makes the verbal marker into agreement.

(29) *ʃuft-****ik******Ɂinti*** (some) Arabic

saw.1S-2S you

`I saw you.’

(30) *Nga kihte-****l sah*** Kosraen

I feed-3S him

`I am feeding him’ (Lee 1975: 61)

To give a short interim summary, varieties of Spanish, Athabaskan, Persian, Arabic, and Kosraen all show some evidence of the object pronoun becoming an agreement marker. The presence is not typically obligatory, however. I’ll now turn to Bantu where it can also be seen that the object marker lags behind the subject one.

Givón (1976: 157) provides an example from Swahili, a Bantu language. There are clear object pronouns, e.g. (31), in complementary distribution with DPs in (32). With topics, these markers are obligatory, as (33) shows.

(31) *ni-li-vunja kikopo*  Swahili

1S-PST-break cup

`I broke a cup.’

(32) *ni-li-****ki****-vunja* Swahili

1S-PST-3S-break `I broke it.’

(33) *kikopo, ni-li-****ki****-vunja* Swahili

cup 1S-PST-3S-break

`The cup, I broke it.’ (Givón 1976: 157)

In Swahili, doubling is the way to make inanimate objects definite, as in (34) and (35), showing the object cycle typically starts with definite, animate objects.

(34) *ni-li-soma kitabu* Swahili

1S-PST-read book

`I read a book.’

(35) *ni-li-****ki****-soma kitabu* Swahili

1S-PST-3S-read book

`I read the book.’ (Givón 1976: 159)

In another Bantu language, Rwanda, the object marker is no longer in complementary distribution with the DP and appears even when the object is in its canonical position, as in (36). It has become a definite object marker.

(36) *ya-****mu****-bony umunhu* Rwanda

3S-3S-saw man

`He saw the man.’ (Givón 1976: 159)

So, in summary, there is evidence that the object cycle lags behind the subject one. Apart from Spanish, Arabic, and Persian, Bresnan & Mchombo (1987: 745) show that the subject marker on the Chichewa verb is agreement but the object marker is still a clitic. The work by Givón on other Bantu languages also shows a slow development.

How can one account for this change from object pronoun to agreement? Chomsky (2016) assumes a Root Phrase, which is comparable to a VP in earlier work, whose verbal head R merges with an object, as in (a) of Figure 2.2. Unlike the subject, which must move to the specifier of the TP in many languages, an object need not move to the specifier of the RP because either R can label the RP or v\* can transfer phi-features to R in which case the label is <phi,phi>. As Chomsky (2016: 4) says, “the question turns on whether R is analogous to `weak’ T … If it is, then object-raising is obligatory.” With an RP label, there is no incentive to reanalyze but, with the feature-sharing approach, the object pronoun could be ambiguous which might result in a reanalysis of the DP object as agreement, as in (b) of Figure 2.2. This figure represents Old Spanish in stage (a) and the modern non-standard varieties of Spanish in (b) but other languages fit as well.

|  |
| --- |
| a. v\*P > b. v\*P  ei ei  v\* RP/<phi,phi> v\* RP  [u-phi] ei [u-phi] ei  R *lo* R  [i-phi] [i-phi]  *le/lo*  Minimal Search or transfer and sharing Minimal Search |

Figure 2.2: Reanalysis of the object as v\* resulting in simpler labeling

The reanalysis from (a) to (b) is expected with the <phi,phi> label because Minimal Search without feature sharing is simpler; it is not expected with the RP labeling. Therefore, it is less common than the one that occurs with subject pronouns.

*3.2 Object pronouns to agreement on T*

Standard French has a rich set of preverbal clitics, as in (37), but as we’ve seen in the previous section, the subject pronoun *je* is becoming the agreement marker on the verb so the intervening material is `in the way’. In this case, the negative *ne* and object pronoun *l(e)* intervene in Standard (formal) French.

(37) ***Je ne l’-ai*** *pas vu* Standard French

1S not 3S.ACC-have not seen

‘I haven’t seen it.’

However, the preverbal negative *ne* has disappeared in all but the most formal French before finite verbs and there are currently three changes affecting the object clitic: (a) its loss, and thereby a loss of transitivity, (b) a change in position, from preverbal to postverbal object, and (c) a change in status, from pronoun to agreement marker.

Object loss is of course the least complex way to remove the object pronoun in () but since it loses a lot of the underlying argument structure it probably cannot occur full scale to resolve the intervention issue that block the subject agreement marker from being adjacent to the verb and reanalyzing as a T. Object loss has been documented by Lambrecht & Lemoine (1996), Larjavaara (2000), and Noailly (1997) for adult French but I won’t go into it further since it involves a change in the argument structure and is not precipitated by third factors.

The reanalysis from preverbal to postverbal object is a change in the position of the pronoun, as from (38a) to (38b). It removes the object pronoun from a position that makes it hard to reanalyze the subject pronoun as agreement on T.

(38) a. *J****’y*** *travaille*

1S.there work

‘I work there.’

b. *Je travaille* ***là***

1S work there

‘I work there.’

Bahtchevanova and van Gelderen (2016), using the *Orléans corpus,* find that there are 45 instances of *y* preceding the verb, as in (39), but the postverbal instances of *là, là-dedans, là-dessus, là-bas*, and *à ça*, as in (40), which can be replaced by *y*, are much more frequent, a total of 70.

(39) a. ***j' y  ai*** *laissé pour ainsi dire ma santé*

IS.there have left for so say my health

‘I have left my health there so to speak.’

b. *les cours on* ***y****va on y va pas*

  the classes 1P there go 1P there go NEG

‘We go to classes, we don’t go to classes

c. *ça choque pas on* ***y****est habitué maintenant*

this shocks NEG 1P to.it is accustomed now

‘This doesn’t shock (us), we are used to it now.’

d.  ***j' y*** *suis un peu habituée du fait que MICHEL*

1S.to.it am a little accustomed to.the fact that MICHEL

*euh il cause anglais très bien*

eh 3S speaks English very well

‘I am somewhat used to the fact that Michel speaks English very well.’

(40) a. *qui veulent que leurs enfants aillent jouer* ***là-dedans***

who want that their children go play over-there

‘who want for their children to go play over there.’

b. *il y a presque personne qui va* ***là-dedans***

` 3s there is almost nobody who goes there

`Hardly anybody goes there.’

c. *ils se basent* ***là-dessus***

they REFL base there

`They are based on that.’

Bahtchevanova and van Gelderen (2016) also look at *le, l’,* and *la* objects before finite verbs in the *Orléans Corpus*, as in (41), of which there are 196 occurrences. In comparison, there are 106 cases with a postverbal object *ça*, as in (42), that could be *le, l’,* or *la*, i.e. 35% of the combined numbers. The data appear in Table 2.2.

(41) *la langue de Bretagne je ne* ***l’****a comprends pas*

the language of Brittany 1S NEG it.have understood NEG

`I don’t understand the language of Brittany.’

(42) *le gouvernement aura compris* ***ça***

the government should.have understood that

‘The government should have understood it.’

|  |  |
| --- | --- |
| preverbal | postverbal |
| locative y 45  argument le, l’, la 196  **Total 241** | locative là, etc 70  argument ça 106  **Total 176** |

Table 2.2: Some pre- and post-verbal objects in the *Orléans corpus*

This development, when seen in terms of the cycle in (13), seems to be a fast version of the object cycle, skipping the stage where the object clitic is an agreement marker, so from stage (13b) to (13d).

The third change is related to the status of the pronoun. There are specific changes in the phonology of preverbal markers, as outlined in e.g. Morin (1979). There is variation in how two preverbal syllables with a schwa vowel are pronounced in spoken French: either, as in (43a), the second schwa deletes or, as in (43b), the first schwa deletes. Table 2.3 provides some of these combinations.

(43) a. [ʒәlvwa]

b. [ʒlәvwa]

je le vois

1S him see

‘I see him.’

|  |
| --- |
| **1S subject je 2S subject tu**  and 1S object je me [ʒəm] or [ʒmə] tu me [tym]  and 2S je te [ʃtə] tu te [tyt]  and 3SM je le [ʒəl] or [ʒlə] tu le [tyl]  and 3SF je la [ʒəla] or [ʒla] tu la [tyla]  and 1P je nous [ʒnu] tu nous [tynu]  and 2P je vous [ʒvu] tu vous [tyvu]  and 3P je les [ʒəle] or [ʒle] tu les [tyle]  and 3SM.DAT je lui [ʒəlɥi]], [ʒlɥi], [ʒɥi], or [ʒi] tu lui [tylɥi]  and 3P.Dat je leur [ʒlœʁ] tu leur [tylœʁ]  and en j’en [ʒɑ̃] tu en [tɑ̃]  and y j’y [ʒi] tu y [tɥi] or[ti] |

Table 2.3: Portmanteau morphemes with first and second person subjects and other objects, from Bahtchevanova and van Gelderen (2016: 127).

If both subject and object pronouns are reanalyzed as agreement markers, [ʒlә] and [ʒәl] in (41) can be analyzed as portmanteau morphemes spelling out the features of the subject and object in T. The evidence for such a reanalysis would be if *le, y*, and *en* become obligatory with the verbs that select PPs. Instances such as (44) and (45), from the *Orléans corpus*, where the clitic and the PP are both present, have indeed become frequent in Colloquial French but haven’t reached the stage where they are obligatorily used.

(44) a. *J’****y***  *vais* ***à la piscine***

1S.there go to the pool

`I am going to the pool.’

b. *J’****en*** *parle* ***de ce film***

1S.about.it speak about that film

‘I am talking about the film.’

(45) a. *mais en FRANCE ils* ***en***  *mangent* ***du pain***

but in France 3P it eat PRT bread

‘But in France, they eat bread.’

b. *j'* ***en*** *parle* ***de ça***  *en même temps*

1S.about.it talk about that at same time

‘I talk about it at the same time.’

c. *comme des fois on* ***en*** *discute* ***de ça***

like the times 1P about.it discusses about that

‘Like when we discussed it.’

So, French object pronouns are undergoing three changes, loss, change in position, and combination with the subject. Loss is not relevant to the cycle or due to third factors; change in position skips a stage; and change in the shape is making French more synthetic.

How far is the last change? Kayne (1975: 82) notes that object markers are clitics and not pronouns in that they cannot be contrastively stressed. They need not appear when nominal objects are present so are not yet agreement markers and seem between stage (13a) and (13b). There are of course frequent doublings, as in (4) above and in (46), but these are not as frequent as subject doublings and have a different prosody from the subject doublings (see Culbertson & Legendre 2008).

(46) ***Celui-là,***  *je* ***l'****ai pas vu.*

That.there 1S 3S.have NEG seen

`I haven’t seen that one.’

If the changes to the preverbal objects that I have discussed continue, however, many preverbal object pronouns can be expected to reanalyze as agreement markers, i.e. from stage (13b) to (13c). So, the reaction of object pronouns to changes in subjects may accelerate the object cycle.

I now turn to the reanalysis of the object pronoun in e.g. (43). Assume that the structure of the full pronoun stage is as in (a) of Figure 2.3. The phi-features in v\* are valued with those of the object and then inherited by R. However, French pronouns need to move to a position before the finite verb (see e.g. Sportiche 1996 for such movement) and that means that the learner sees them in a position together with the subject agreement, as in (43), and a structure as in (b) is triggered in their internal grammars.

|  |
| --- |
| a. v\* b. TP  ei ei  v\* RP T v\*P  [u-phi] ei [u-phi] ei  R DP *je* DP v\*  *vois le* proei  [i-3MS] [i-1S] v\* RP  [u-phi] ei  *-le* R DP  *vois* pro  [i-3MS]  Inheritance and sharing Minimal Search |

Figure 2.3: Reanalysis of the object resulting in simpler labeling

This means both subject and object are now agreement, represented by [u-phi] on T and on v\*. Modern French still has null objects, as shown in (b) because object doubling hasn’t started to occur with indefinite objects yet. Thus, (47) is not attested in corpora or accepted by native speakers.

(47) \*Je le vois un chien Colloquial French

1S 3MS see a dog

`I see a dog.’

In connection with the subject cycle, I mentioned Greenberg’s Universal 33. This universal holds for objects as well (as noted by Kayne 1989: 94). In English, there is no movement of the object to an OV position but in some languages, e.g. French object clitics and Scandinavian passives (see van Gelderen 1997: 37-42), this movement results in full gender and number agreement on the verb, as (48) and (49) show in comparison with (50), where masculine singular is the default.

(48) *Il les a* ***repeintes*** Standard French

3SM 3MP has repainted.FP

`He has repainted them'.

(49) *Je ne sais pas combien de tables Paul a* ***repeintes***

I NEG know not how\_many of tables.F Paul has repainted.FP

`I don't know how many tables Paul has repainted'.

(50) *Il a* ***repeint***  *les chaises*

3SM has repainted.MS the chairs

`He has repainted the chairs'.

An approach to Greenberg’s Universal using insights from labeling restrictions might have to say that DP movement, as in (51), results in a <phi, phi> label and stronger agreement than regular probing by v\*. This remains for further study.

(51) <phi, phi>

ei

DP v\*P

[i-phi] ei

v\* … <DP>

In this section, I have discussed the case of object pronouns being reanalyzed as agreement markers. As in the case of the subject cycle, these can be seen as a preference for Minimal Search over feature-sharing. There is evidence that this cycle is not as persistent as the subject cycle and this may be due to differences between T in the case of subjects and R in the case of objects. If the label of the verb and object can be RP or <phi, phi>, only the latter is to be avoided.

**4 Ergative absolutive cycles**

When a language has both subject and object pronouns, the subject pronouns grammaticalize first. For instance, as we’ve seen in French, the object lags behind and, in Arabic and Persian, the object marking is in intermediate stages and may never reach the agreement stage. However, all these languages are nominative/accusative. Therefore, in this section, I look at what happens when a language has an ergative/absolutive alignment system, as in Jacaltec Mayan, or when it has a split nominative/accusative ergative/absolutive system, as in Kurdish. In both cases, it is the ergative that reanalyzes as agreement before the absolutive. This is to be expected because the ergative is agreed with first before the absolutive.

In Jacaltec Mayan, an agglutinative VSO language, spoken in Guatemala and Chiapas, Mexico, the agreement markers and independent pronouns appear as given in Tables 2.4 and 2.5. Both sets of markers in Table 2.4 are clearly related to the independent forms in Table 2.5, suggesting a change from pronoun to agreement.

|  |
| --- |
| **ERGATIVE: S PL ABSOLUTIVE: S PL**  1 hin/w ko/x in oŋ  2 ha/haw he/hey ač eš  3 s/y s/y ... eb' ∅ ∅ ... eb' |

Table 2.4: Agreement markers in Jacaltec (from Robertson 1980: 13; 15); the variants are preconsonantal/prevocalic respectively; Craig (1977) has *cu/x* for *ko/x* and *ach* for *ač*.

|  |
| --- |
| **S PL**  1 ha(yi)n ha(yo)n  2 hach hex  3 naj/ix heb/hej |

Table 2.5: Independent Pronouns in Jacaltec (Craig 1977: 101-107)

Robertson (1980) discusses the changes in the Mayan language family. The ergative agreement marker is always a prefix, but the absolutive is variant across the family which suggests that it has changed most recently. That is confirmed by the fact that the ergative prefix is closer to the verb stem than the absolutive marker, when the latter is a prefix.

There is some evidence that a new cycle is starting. For instance, third person ergative pronouns are obligatory in (52a); leaving out the third person subject, as in (52b), results in ungrammaticality.

(52) a. *x****-0-s****-watx'e naj te' iiah* Jacaltec

ASP-ABS3-ERG3-make he the house

'He made the house.’

b. \**x-****0-s****-watx'e e' iiah*

ASP-ABS3-ERG3-make the house

'He made the house.’ (Craig 1977: 108)

First and second person agreement is incompatible with an overt pronoun, e.g. in (53). This is true for both ergative and absolutive pronouns. That means that the agreement is more clitic-like.

(53) a. *ch-in-axni (\*hayin)* Jacaltec

ASP-ABS1S-bathe I

'I bathe.’

b. *x-0-w-i1 (\*hayin) ha-man*

ASP-ABS3-ERGl-see I your-father

'I saw your father.’ (Craig 1977: 102)

The verb in Jacaltec starts with an aspectual prefix that is followed by the absolutive and, in the case of a transitive, by an ergative and then the verb. Thus, the agreement is ‘split' between the aspectual `auxiliary’ and the verb, as in (54), probably a remnant of an earlier bi-clausal structure.

(54) a. *ch-ach toyi*  Jacaltec

ASP-ABS2 go

‘You go.’

b. *ch-ach w-ila*

ASP-ABS2 ERG1-see

‘I see you.’ (Craig 1977: 90)

Müller (2009) proposes an analysis of ergative languages where agree and merge apply in an order opposite that of nominative languages. Like Obata, Epstein, and Baptista (2015) that we saw in chapter 2, Müller argues that, for a convergent operation, the respective order of merge and agree doesn’t matter. In ergative languages, as shown in (55a) for Jacaltec, the order is merge and then agree: the V moves to v after which the Agent merges in the specifier of the vP with agreement between them resulting in ergative marking on the v\*. The Theme is left to agree with the ASP head through minimal search. In an intransitive, as in (54a), the v has no features, so ASP agrees with the sole argument, as shown in (55b).

(55) a. ASPP b. ASPP

ei ei

ASP vP ASP vP

*ch-* ei *ch-* ei

[u-phi] *w-* v\*’ [u-phi] *ach-* v’

[i-1S] ei [i-2S] ei

v\* VP v VP

(2) [u-phi] ei V

V -*ach toyi*

(1) *ila* [i-2S]

`I see you’ `You go’

Taking the person split into account in (52) vs (53), the first and second person features on the affix in (55) would have to be considered as interpretable, and I have marked those as such, but the third person ones in (52a) would be uninterpretable.

The reason for the diachronic development from pronoun to agreement is labeling. Feature sharing between the subject in the specifier of the v\*P and the v\* is less economical than using Minimal Search to identify the head. This change is represented in (56).

(56) a. phi, phi b. v\*P

ei > ei

*w-* v\* v\* VP

[i-1S] ei *w-* …

v\* VP [i-1S]

[u-phi] ei

V -*ach*

*ila* [i-2S]

In Jacaltec, the ergative pronoun grammaticalizes first. The reason, using a system as in Müller (2009) is that it agrees first, as shown in (55a). I have nothing to say on why it is third person that grammaticalizes first: Mayan has no gender so the feature content of the pronouns is not noticeably different, unlike e.g. French.

Kurdish languages constitute a branch of the Indo-Iranian family. Like other languages in this family, they are now split ergative (Haig 2015) as compared to an older stage of Persian which is accusative. Kareem (2016) and Akkuş, Salih, & Embick (2019), among others, provide data on subject and object marking for the Central Kurdish varieties. Free pronouns, clitics, and agreement markers are related in all Indo-European languages and Kurdish is no exception, as Table 2.6 shows. For instance, the first and second person singular free pronoun’s onsets appear as the clitic and agreement markers although phonological change has made a few non-transparent.

|  |
| --- |
| **pronoun clitic agreement (Present) agreement (Past)**  1s min =(i)m -(i)m -(i)m  2s to =(i)t -î(t)/zero/-e ît  3s ew =î ê(t)/-a(t)/zero zero  1p ême =man -în -în  2p êwe =tan -(i)n -(i)n  3p ewan =yan -(i)n -(i)n |

Table 2.6: Forms of pronouns and indexers in Central Kurdish (Kareem 2016: 95)

Akkuş, Salih, & Embick argue that the Agent/Subject marking represents agreement in the present and a clitic in the past whereas the Patient/Object marker is a clitic in the present and agreement in the past. From a diachronic point of view, that means that subject (nominative) pronouns grammaticalize before object (accusative) pronouns in the present, i.e. in the nominative/accusative system, and this is what we have seen with other languages with such systems. In the past, it is the ergative that is grammaticalized first. The following data illustrate this.

The present tense has nominative/accusative alignment, the subject is indexed on the verb, and a subject pronoun optionally appears, as in (57). Unlike the subject, the object cannot be doubled, as (58) shows. The latter is expected if the clitic object is an argument of the verb.

(57) ***(to)*** *de=man bîn-****ît*** Standard Sorani Kurdish

2S IND=1P see.PR-2S

`You see us.'

(58) *\*to* ***ême*** *de=****man*** *bîn-ît* Standard Sorani Kurdish

2S 1P IND=1P see.PR-2S

`You see us.' (both from Akkuş, Salih, & Embick 2019, with their clitic/agreement markers)

In the past, the alignment is ergative/absolutive. In (59), the verb is marked for the patient/object but it cannot be doubled by the pronoun *ême*, and that makes the object marking on the verb a clitic argument not an agreement marker.

(59) \****ême****=t de-bîn-****în*** Standard Sorani Kurdish

1P=2S PROG-see.PST-1P

`You were seeing us.' (again both from Akkuş, Salih, & Embick 2019, with their clitic/agreement markers)

In (60), the patient/object is again marked on the verb and, here, the agent/subject marker *–t* that attaches to the aspect marker can be doubled by the free pronoun *to*, making the attached second person into an ambiguous agreement marker.

(60) ***(to)*** *de=****t***  *bîn-în* Standard Sorani Kurdish

2S PROG[[2]](#footnote-2)=2S see.PST-1P

`You were seeing us.'

So, in ergative languages, the pattern seems to be one where the ergative pronoun grammaticalizes before the absolutive one. This reanalysis could be due to labeling pressures, as shown in (56).

**5 Demonstrative pronouns**

Demonstrative pronouns grammaticalize and reduce their semantic features in a number of ways. They can lose deictic marking to become articles (section 5.1) or lose interpretable phi-features to become complementizers with uninterpretable phi-features (section 5.2) or lose phi-features altogether when they reanalyze as copulas, as will be shown in section 3 of chapter 4. Here I focus on the mechanisms that start the demonstrative cycles but won’t provide a lot of examples (see van Gelderen 2011; 2015b). In chapter 6 (section 3), I examine how the renewal side of this cycle works.

*5.1 From demonstrative to article*

Greenberg (1978) is perhaps the first to identify the set of changes between a demonstrative and article. The reanalysis has occurred in Romance (Harris 1977, 1978), Mayan, Salish, Egyptian, and Uto-Aztecan, e.g. (61) from Tohono O’odham. The clitic noun marker *g* in O’odham goes back to an older demonstrative (Shaul 1986: 51) that stills occurs in Tohono O’odham as demonstrative and third person pronoun in (62).

(61) *'Ab 'o hihim* ***g*** *cewagi*  Tohono O'odham

there AUX walk.P ART clouds

`Here come the clouds.' (Zepeda *D'ac 'O'odham* 1982)

(62) *Cipkan ‘o* ***hegai*** *‘uwĭ*

work.PRT BE that woman

`That woman is/was working.’ (Zepeda 1983: 8)

The same has happened in English, as is well-known. In the Peterborough Chronicle, written during the 11th and 12th centuries in eastern England, the switch is very obvious. In (63), from 1130, demonstratives are used regularly (e.g. *se* is masculine singular nominative) and no articles are but, in (64), from 1137, articles suddenly appear. This change is due to a different scribe, who has internalized a new system.

(63) ***Đes*** *feorðe dæges þæræfter wæs* ***se*** *king Heanri on Roueceastre. &* ***se*** *burch forbernde ælmæst. &* ***se*** *ærcebiscop Willelm halgede Sancti Andreas mynstre &* ***ða*** *forsprecon biscop mid him. &* ***se*** *kyng Heanri ferde ouer sæ into Normandi on heruest.*

`On that fourth day thereafter, (that) King Henry was in Rochester, when that town was almost consumed by fire; and (that) Archbishop William consecrated St. Andrew’s monastery, and those aforesaid bishops with him. And (that) King Henry went over sea into Normandy in autumn.’

(*Peterborough Chronicle*, 1130, Thorpe edition)

(64) *ðis gære for* ***þe*** *king Stephne ofer sæ to Normandi & ther wes underfangen forþi ðæt hi uuenden ðæt he sculde ben alsuic alse* ***the*** *eom wes.*

`This year, (the) King Stephen crossed the sea to go to Normandy and was received there because they thought he was like the uncle (i.e. his uncle).’

(*Peterborough Chronicle*, 1137, Thorpe edition)

A possible reanalysis of a demonstrative to an article is given in Figure 2.4, where the demonstrative is a specifier (as in Brugè 1996, 2002; Giusti 1997, 2002) and the article a head. The pre-analysis label is arrived at through the sharing of the phi-features either with the NP (concord), as in (ai), or through sharing with a D head that has checked its uninterpretable features with the NP, as in (aii). The label in (b) comes about through Minimal Search, a third factor.

|  |
| --- |
| a(i). <phi, phi> > b. DP  ei ei  DP NP D NP  *that/se* *book* *the/þe book*  [i-3S] [i-3S] [u-phi] [i-3S]  a(ii). <phi, phi>  ei  DP DP  *that/se* ei  D NP  [u-phi: 3S] *book*  [i-3S]    Labeling {DP, NP} due > Minimal Search  to feature sharing |

Figure 2.4: Reanalysis of the demonstrative as article: from feature-sharing to Minimal Search

A reanalysis from demonstrative to article is frequent (Greenberg 1978; Diessel 1999: 128) and that shows that Minimal Search is prefered over Feature Sharing.

A note about the two possible (a) structures may be helpful. If there is no DP in Old English (see e.g. the discussion in Wood 2007), the only possibly structure is the first one (a(i)), with the demonstrative adjoined to the NP. In this case, it is not clear that there is actually feature-sharing for labeling and the reasons for avoiding this structure would be as in chapter 6. If there is a D phase head, as in (a(ii)), the labeling is clearly <phi, phi>.

Demonstratives also develop into complementizers, as is well known, and I argue that’s for the same labeling reasons.

*5.2 From demonstrative to complementizer*

Reanalysis from D to C occurs in a number of genetically and areally unrelated languages, e.g. Hixkaryana (Derbyshire 1985), Sango (Byrne 1988), Ngumpin-Yapa (McConvell 2006), Welsh (Willis 2007), and Germanic.

In Germanic, as has been argued in Lockwood (1968: 222) for Faroese *tadh* and Hopper & Traugott (2003: 191-2) for English *þat*, the (neuter) demonstrative develops into a complementizer. Hopper & Traugott argue the complementizer develops from a construction such as (65), where the first *þæt* is a demonstrative and the second *þæt* a resumptive demonstrative.

(65) *… gehierdon* ***þæt*** *… þegnas …* ***þæt*** *se cyning ofslægen was*

… heard that thanes that the king slain was

`The thanes heard that the king had been killed.’ (Parker Chronicle 755.23, Hopper & Traugott 2003: 191)

The resumptive demonstrative is the weak link in Hopper & Traugott’s account. The alternative suggested by Axel-Tober (2017), regarding the same change from demonstrative to complementizer in the history of German, is that it arises through a correlative construction, like the one in (66).

(66) *Er tháhta odowila* ***tház*** *|* ***thaz*** *er ther dúriwart wás*

he thought maybe that that he the doorkeeper was

`He thought that maybe he was the doorkeeper.’ (Axel 2009: 29)

Weiβ (2019) offers yet another scenario of rebracketing but I will leave aside the precise mechanics and focus on what is different between demonstratives and complementizers from a labeling perspective.

If, as in e.g. Chomsky (2008), C has uninterpretable phi-features that are valued either directly or via T, C is like T and can share features with what occupies the specifier of the phrase. This is characterized as (a) in Figure 2.5. Here, the demonstrative, as a phrase, needs to label via feature sharing with the complementizer. The reanalysis as a C head in (b) involves just uses Minimal Search.

|  |
| --- |
| a. <phi, phi> > b. CP  ei ei  DP CP C TP  *þat* ei *þat*  ...  [i-3S] C TP [u-phi]  [i-loc] [u-phi]  Labeling {DP, CP} is due > Minimal Search  to feature sharing |

Figure 2.5: Reanalysis of the demonstrative as complementizer: from feature-sharing to Minimal Search

So, this change is again one that favors the third factor principle Minimal Search over feature-sharing.

In short, in this section, we have seen two instances where a demonstrative is reanalyzed in such a way as to enable labeling through Minimal Search. In both cases, the change is from a phrasal category to a head and this means a loss of semantic features (deictic ones) and a change towards uninterpretable phi-features, typical of a head.

**6 Q-feature sharing**

In the previous sections, we have seen how phi-feature sharing is unstable. In this section, I discuss two instances where a phrase continues as the specifier of the CP and does not reanalyze as the head of C. These are interesting in that their label is feature-based but very stable. Q-features are therefore very different from phi-features. The reason for this is CI-relevance.

As discussed in chapter 1, in the PoP framework, *wh*-elements in the specifier of the CP share features with the C, as in (67), and escape the Labeling Paradox that way.

(67) <Q, Q>

ei

whether CP

[Q] ei

C ..

[Q]

To be more precise, the verb *wonder* in (68)requires a CP that has a Q-feature, which requirement I have marked by an uninterpretable feature on the verb in (69).

(68) I wonder whether he’ll do it.

(69) I wonder α[whether [ C [ he’ll do it]]].

[u-Q] [i-Q] [~~u-Q: Q~~]

*Whether* has interpretable Q features which value the C. The label of α in (69) is then <Q, Q>, as in (70), similar to the label of <phi, phi>.

(70) <Q, Q>

ei

whether CP

[i-Q] ei

C <phi, phi>

[u-Q: Q] ei

DP TP

[i-phi] ei

T …

[u-phi]

This <Q, Q> label seems to be stable, unlike the <phi, phi> features discussed earlier, because *whether* is not being reanalyzed as a head. (71) shows that *whether* is a specifier because extraction from the complement of *wonder* is not possible across this element (and the CP acts like a wh-island).

(71) a. \*Who do I wonder whether he saw?

b. \*CP[ Who do TP[ I wonder CP [whether he saw <who>]]].

This is also shown in (72) where *if* occupies the head C.

(72) the Congressmen who come in in January and asking **whether if** one kind of affects the other. (COCA Spoken 2010)

The origin of *whether*, according to the OED, is from an Indo European form of `who' with a comparative suffix, i.e. from a phrasal source. This original pronominal function can still be seen in (73a-c) from Old English, where *whether* may be fronted in a question or not. In (73a), the entire phrase *hwæðer þara twegra* is fronted to the specifier of the CP layer, in (73b) nothing is, and in (73c) only *hwæðer* is.

(73) a. ***Hwæðer***  *þara twegra dyde þæs fæder willan*

which that two did that father will

`Who of the two did as the father wanted?’ (*West Saxon Gospel* Corpus, Matthew 21.31)

b. *ond siþðan witig god on swa* ***hwæþere*** *hond*

and then wise lord to so whichever hand

*... mærðo deme swa him gemet þince.*

... glory grant so him right think

`And may the wise lord grant glory to whichever side he thinks right.' (*Beowulf* 686)

c. ***hwæðer*** *sel mæge æfter wælræse wunde*

who better may after bloody.storm wounds

*gedygan* ***uncer twega***

survive us.two two

`Who of us two is better at surviving wound after the deadly battle?’ (*Beowulf* 2530-2)

This shows *whether* to be clearly in a specifier stage in Old English (73a) and continuing in Modern English (68).

The complementizer *how* also checks the Q-features*,* as shown in (74). Here too, *how* remains in specifier position judging from sentences with the impossibility of extraction in (75) and the presence of another C head, as in (76).

(74) The men will wonder **how** there'll ever be enough lobsters around this island for seven more men to ... (COCA 2000 Fiction)

(75) a. \*What will the men wonder **how** there’ll ever be enough?

b. What will the men wonder **how** there’ll ever be enough <what>?

(76) by looking on, and watching **how that** these things might be done as well as others.

(COHA 1849)

This use of *how* as specifier goes back a long way as well, as (77) and (78) indicate.

(77) *We gehirdon ...* ***hu*** *ge ofslogon ... Seon and Og.*

‘We heard ... how you slew ... Sihon and Og.’

(OED, c1000, Ælfric Joshua ii. 10)

(78) *Hym thoughte* ***how þt*** *the wynged god Mercurye Biforn hym stood.*

him thought how that the winged God Mercury before him stood

‘It seemed to him that the winged god Mercury stood before him.’

(OED, c1385 Chaucer *Knight's Tale* 527)

*Whether* and *how* have been complementizers since the Old English period (van Gelderen 2009, 2015a) and have not changed to heads. A reviewer suggests that embedded contexts, such as (68) and (74), are more resistant to change. This can’t be the reason because both *whether* and *how* have been and are currently used (respectively) as *yes/no* markers in root clauses, as in (79) and (80). Here too they continue to be specifiers as evidenced by the V-to-C movement.

(79) ***Hwæðer*** *wæs iohannes fulluht þe of heofonum þe of mannum*

Whether was John's baptism that of heavens or of man

`Was the baptism of John done by heaven or by man.' (*West Saxon Gospel*, Corpus, *Matthew* 21.25)

(80) **How** would you mind clearing a blocking path for Brandon Jacobs, eh?

(https://twitter.com/jimshearer/status/178244064238514177)

In short, neither in the root or embedded clause do the specifiers of the CP show evidence of consistently changing to C. The reason that the labeling of <Q, Q> is stable, I argue, has to do with the relevance to the semantic interface (as the same reviewer points out). In contrast, the <phi, phi> features discussed in previous sections are not as relevant to the CI interface as the <Q, Q> features.

**7 Negation**

In this section, I briefly examine changes involving negation and will argue that, as before, these can be accounted for by labeling needs. Chomsky (2013; 2015) considers only the labeling of CP, TP, v\*P, and R(oot)P. Examining phrase to head reanalysis in NegPs provides insight into how other phrases are labeled.

Jespersen (1917) was among the first to discuss changes in negatives as a cycle, with examples from many languages and a discussion about weakening and strengthening tendencies. This section only provides a minimalist account for the weakening, although it shows how strengthening is important as well.

There is a wealth of data on negative cycles in a myriad of languages, e.g. van der Auwera & Vossen (2016), Vossen & van der Auwera (2014), Mithun (2016), Larrivée & Ingham (2011) and Willis, Lucas, and Breitbarth (2013: 7, 21, 169), to mention but a few. The latter provide recent case studies on the well-known cyclical change in negative marking. A typical chain of changes is given in (81), from the history of English.

(81) earlyOE > OE/ME > earlyModE > ColloqEnglish

*no/ne* *(ne) ... not* -*n’t* -*n’t ... nothing*

Examples of the stages of the Negative Cycle are given in (82) for English. They are the following: (82a) shows the use of a negative by itself; (82b) of the determiner *nan* and the regular negative *ne*; (82c) shows a *ne* contracted with the verb into *nes* and a negative adverbial *nawhit*, a contracted form of the negative indefinite *na wiht* `no creature’; (82d) shows the adverbial *not* by itself; and (82e) shows the cliticization of *not* onto the verb; and (82f) the reinforcement in colloquial English.

(82) a. *Men* ***ne*** *cunnon secgan to soðe ... hwa*

Man not could tell to truth ... who

`No man can tell for certain ... who'. (*Beowulf* 50-2)

b. ***ne*** *fand þær* ***nan þing*** *buton ealde weallas & wilde wuda*

not found there no thing except old walls and wild woods

‘He found there nothing but old walls and wild woods’.

(*Peterborough Chronicle*, addition to year 963, Thorpe 220)

c. ***Nes***  *þis meiden* ***nawhit*** *heruore imenget in hire mod inwið.*

not.was this maiden not herefore troubled in her mind within

‘This maiden was not troubled in her mind because of this.’

(*Katerine*, d’Ardenne 28, 21-22)

d. *Yit it semeth that He wolde* ***not*** *leve thee thus lightly*

‘Yet it seems that he wanted not leave you thus lightly.’

(*Cloud of Unknowing*, 241-42)

e. *And to þis I* ***cannot*** *answere þee bot þus: ‘I wote neuer.’*

‘And to this I can’t answer you except thusly: I knew never.’

(*Cloud of Unknowing*, 450-51, [www.lib.rochester.edu/camelot/teams/cloud.htm](http://www.lib.rochester.edu/camelot/teams/cloud.htm))

f. They get down on a thing when they do**n't** know **nothing** about it. (Mark Twain, Huck Finn, chapter 1)

The motivation for this cycle is most often seen as pragmatically driven. Thus, Kiparsky & Condoravdi (2006), in examining Jespersen’s Cycle in Greek, find no evidence for phonetic weakening and suggest pragmatic and semantic reasons. A simple negative cannot be emphatic; in order for a negative to be emphatic, it needs to be reinforced, e.g. by a minimizer. Adapting ideas from Dahl (2001), they argue that, when emphatic negatives are overused, their semantic impact weakens and they become the regular negative and a new emphatic will appear. L’Arrivée (2010), examining the history of French negation, argues that a specific pragmatic function, namely accessibility of a proposition to the hearer, plays a role.

It is quite possible that pragmatic strengthening occurs first but that doesn’t explain why the grammaticalization is set in motion. I will argue that the syntactic labeling mechanism favors the negative as head, e.g. just the *ne* or –*n’t*, but that the need to make the negative meaning obvious necessitates renewal in the form of an additional negative indefinite, which in turn is made into a head. This accounts for the cycle. The negative *ne* in (82ab) is a head because it precedes the verb and the additional negative DP in (82b) is an argument that is in negative concord. In (82c), the determiner and noun are written as one word and are no longer used as argument but as an adverb. This adverbial form is still phrasal and will ultimately result in the form *not*, as in (82d). In the stage of (82e), the negative is a head because it is joined by another head and therefore similar to (82a). This is followed next by a phrasal negative renewal, as in (82f), similar to (82b).

A scenario for the change from (82bc) to (82de), using third factor principles, is given in Figure 2.6.

|  |
| --- |
| a. NegP = <neg, neg> b. NegP  ei ei  DP NegP Neg YP  nawhit ei nought/not/-n’t  Neg YP  Labeling via feature sharing labeling is Minimal Search |

Figure 2.6: The Negative Cycle, search over sharing

The change from (a) to (b) is due to the labeling mechanisms: *nawhit* in (a) is an XP and Neg’ (or NegP) a YP so, unless they share features, the NegP cannot be labeled. If labeling is behind this change, the features in (a) are more opaque, just like in the case of <phi, phi> and a system relying on Minimal Search is therefore assumed by the language learner.

In Figure 2.6, (b) is the stage of (82a); the stage in (82bc) comes about through pragmatic strengthening, not something narrow syntax is responsible for. I’ll assume negative features connected to head and phrasal negation (but for our purposes here will remain agnostic about interpretabilty/valuation). These negative features allow for labelling in the stage in (82bc). However, this stage doesn’t appear stable as (82de) arise, evidence for a phrase to head reanalysis, as in Figure 2.6. Stage (82f) involves further pragmatic strengthening, allowed under feature-sharing.

**8 Conclusion**

Minimalism, Chomsky (2013, 2015) included, constitutes a paradigm-shift in attributing as little as possible to Universal Grammar and as much to language independent, Third Factors, including Minimal Search. Merge is forced by interface conditions that require labeling. In this chapter, I have argued that this Third Factor Labeling Algorithm motivates the reanalyses involved in the instances of the linguistic cycle discussed here, namely when subject and object pronouns reanalyze from phrase to agreement heads. In the change from specifier to head, a change from feature-sharing and agree to Minimal Search can be observed, a third factor principle. The changes involving demonstratives to articles and complementizers also involve phrase to head reanalysis, as do negatives.

The cases of specifier to head change range from frequent to not frequent or not occuring. Whereas personal and demonstrative pronouns and negatives reanalyze frequently, *wh*-elements examined in this chapter do not. The *wh*-elements *whether* and *how* are specifiers in the CP and show no reanalysis to head. This shows that <Q, Q> feature-sharing is stable which may be due to the relevance of these features to the CI Interface.

**Chapter 3**

**Determinacy in Language Variation**

**1 Introduction**

This chapter is about the variation third factor principles allow. As discussed in chapter 1, the Principle of Determinacy rules out having more than one choice in the phase. If a phrase moves from one position to another in the same phase, i.e. without being transferred/eliminated from the workspace, merge will face the dilemma of which of the two copies will move to a higher position. In this chapter, I focus on the cross-linguistic and cross-varietal differences that avoidance of indeterminacy brings about. Because determinacy can be resolved in a number of equally optimal ways, there is variation in how languages resolve possible violations. This open resolution to determinacy is similar to that discussed by Obata, Epstein, and Baptista (2015) regarding the optionality of how merge and agree are optionally ordered and that is discussed here as well.

The variation discussed concerns how to resolve the CP-TP `bottle-neck’. In this bottle-neck area, the phi-features of C are argued to be inherited by T and a number of issues can arise, e.g. indeterminacy may occur because there are too many positions in close proximity to each other through which *wh*-elements must move. In Modern English, a strategy is followed where the complementizer *that* and the CP can delete; in Old English and Dutch, the TP is not present so indeterminacy is avoided that way. So, in this chapter, the focus is on variation and, in the following chapter, I turn my attention to actual changes that occur to avoid determinacy violations.

The outline is as follows. In section 2, I provide some background on the CP-TP complex and on Feature Inheritance. Section 3 provides examples of how variation is dealt with through feature parameters in the functional lexicon and on how computations are able to obey third factor principles in more than one way which then results in cross-linguistic variation, especially in the CP-TP area. Section 4 examines *that*-trace violations in English and accounts for how their indeterminate structure can be circumvented through deletion of the complementizer, and hence the CP. This section also discusses subject-less relative clauses, which violate anti-locality but which, like *that*-trace structures, I will argue, have the option to have a null C which can then transfer phase-hood to T. Complementizer-less complements provide additional evidence for this choice. In section 5, I argue that languages without TP do not demonstrate *that*-trace violations. This is as expected because there is no position in the TP after C. Up to now, the data for Old English *that*-trace data that have appeared in the literature (e.g. Pesetsky 1982; Jackson 2006) have relied on a few instances in Allen (1977; 1980) and I add a substantial set of new data. I also discuss obligatory complementizers in complement clauses in the TP-less languages. Section 6 discusses C(omplementizer)-agreement in TP-less languages, i.e. languages without Feature Inheritance. Section 7 is a conclusion.

**2 The CP-TP boundary: Feature Inheritance**

All the examples in this chapter involve variation in the CP-TP area. I will therefore first provide the current view on the relation between C and T, namely that T inherits tense and agreement features from the phase head C. The Feature Inheritance proposal captures this dependence of mood in the C and finiteness in the T. For instance, indicative mood is marked through *that* in the CP layer (or in the ForceP) and requires a finite verb in its clause. This is achieved by means of tense and phi-features on T. Similarly, if the mood is irrealis, the C is *for* and the T in the accompanying clause will be non-finite. The CP and TP thus work together but, as I will show, throughout the history of generative grammar, only one or the other has played a role: sometimes TP (as with Subjacency in English) and sometimes CP (as with phases). This dependence is also shown when the C head is deleted, the phase is cancelled, and phasehood is transferred to T (see Epstein, Kitahara, and Seely 2016).

As we saw in the chapter 1, in the 1970s and 1980s, the clause boundary (the cyclic node S in (32) of chapter 1) was relevant for subjacency and for identifying islands. Once the clause is seen as a combination of a TP and a CP, it is the TP that counts as the bounding node (in English) which can only be crossed once. In (1), the first movement crosses one TP and the second another TP.

(1) Who did TP[ Mary <did> think CP[ <who> that TP[ Peter met <who>]]].

2 1

Crossing two TPs, as in (2) where the intermediate specifier of the CP is filled, results in ungrammaticality.

(2) \*Who did TP[ Mary <did> wonder CP[ when C TP[ Peter met <who>]]].

If both CP and TP counted as bounding nodes, the second movement in (1) would not have a grammatical result. This means that, even though there are two phrases, only one counts for locality. At the time, it was also argued that bounding nodes were parametrized, either TP, as in English, or CP, as in Italian (see e.g. Rizzi 1980), again suggesting that the CP and TP have a differing degree of importance, but that it is either CP or TP that counts, and not both in the same language.

As an alternative to subjacency, Chomsky (1986) formulates the concept of barriers that block government and hence disallow movement across because the empty position would not be properly governed. A barrier depends on the notion of Blocking Category (BC), as in (3), where L-marking means a theta and agreement relation with a sister, e.g. a verb L-marks its theta-marked object.

(3) γ is a BC for β iff γ is not L(exically)-marked and γ dominates β.

A barrier is defined in (4) if either there is a BC category in between it and β or it is itself a BC. As with the bounding nodes of subjacency, movement can’t cross more than one barrier.

(4) γ is a barrier for β iff (a) or (b):

a. γ immediately dominates δ, δ a BC for β = barrier by inheritance

b. γ is a BC for β, γ is not IP [i.e. TP] (Chomsky 1986: 14) = inherent barrier

What is important for this chapter is that by (4b), the TP cannot by itself be a BC but has to inherit barrierhood from the CP through (4a). The complexity of the definition in (4) is due to the CP/TP area. I’ll give one example of how this model works.

In (5) and (6), the same sentences as (1) and (2), respectively, the account is the same as under Subjacency: the TPs are barriers under inheritance but only one is crossed at one time in (5); in (6), the *wh*-element has to cross two barrier TPs.

(5) Who did TP[ Mary <did> think CP[ <who> that TP[ Peter met <who>]]].

(6) \*Who did TP[ Mary <did> wonder CP[ when C TP[ Peter met <who>]]].

The advantage of barriers over subjacency lies in the use of L-marking: it is now possible to make subject and adjunct CPs into barriers where that was harder in the subjacency model because any CP/TP counted. Interesting for what I argue in this chapter is that the barriers framework makes it clear that the TP is dependent on the CP for barrierhood.

In the Minimalist Program, starting around Chomsky (2000, 2001), phases replace bounding nodes and barriers. Phases restrict the “computation of expressions […] to a single cyclic/compositional process” (Chomsky 2008: 142). Once a phase is complete, it is transferred to the interfaces and no longer remains accessible to the computation. There are two clausal domains that Chomsky recognizes as phases, the CP and v\*P. The TP is not a phase although it “is the locus of the φ-features”. The T “manifests the basic tense features if and only if it is selected by C” and it therefore “makes sense to assume that Agree- and Tense-features are inherited from C, the phase head” (2008: 143-4).

In a subordinate clause with both a CP and TP, as in (7), the complementizer has tense, checks agreement with the subject, and assigns nominative case to this subject. In English, that holds whether an overt complementizer *that* is present or not. T inherits tense and agreement features, as seen in (7b).

(7) a. I know (that) she left.

b. I know CP [C TP [she T vP [<she> left]]]

[~~u-phi~~: 3S]/[i-tense/Case] [i-3S]/[u-Case]

However, when there is no C in the clause (i.e. when it is obligatorily absent) to transfer its features to T, there is no tense or nominative case on T, as shown in (8). Instead, in this ECM construction, the subject *her* is assigned accusative case by the higher verb and the lower verb lacks tense.

(8) a. I know her to be a nice person.

b. I know TP [her T to vP [<her> be a nice person]].

[irrealis]

The T in (8) is said to be `defective’ (Chomsky 2001) and the irrealis mood is an expression of that defectiveness.

If C has all the features to start with, why is T needed? Richards (2007: 565) suggests that C “would actually be *unable* to do all of the work … without the mediation of proxy nonphase heads”. If feature valuation is part of transfer, C can’t hold on to its [u-phi] features because these couldn’t be valued once TP is transferred and, hence, “u-phi must spread from edge to non-edge” (2007: 569). In sections 4 and 5, I argue that it is in fact possible to do without one of the two functional heads and will show there how that would work.

There are some questions with Feature Inheritance, as Chomsky (2008: 144) notes. “The mechanism is a narrow violation of [the No Tampering Condition]. The usual question therefore arises: does it violate [the Strong Minimalist Thesis]? If it does, then the device belongs to UG (perhaps parametrized), lacking a principled explanation”. I argue that Feature Inheritance is indeed parametrized: present in English, but not in languages without T(P). Chomsky elaborates a little later in the same paper on the universality of Feature Inheritance: “[a]nother question is whether inheritance is obligatory or optional. For C-T, that raises familiar questions about universality of EPP and about mechanisms of agreement” (Chomsky 2008: 149).

In short, the CP-TP complex functions as a boundary for locality and as a holder of agreement and nominative case features. In English, the features from C are generally transferred to T but it also has the option of doing without C. Other languages opt for different solutions, as I now show.

**3 Language variation in the Minimalist Program**

In addition to variation in feature Inheritance, there are other Minimalist lines of reasoning to cross-linguistic variation around the CP-TP boundary. I sketch two possibilities in this section. Both approaches rely on the features of C and T. The first solution involves a different featural make-up of functional heads. Building on the insights that certain types of pro-drop match rich agreement on the verb, Chomsky (e.g. 2015) has pursued such an approach to pro-drop and the EPP. He claims T can be weak or strong and this results in English-type languages or Italian-type ones, respectively. Obata, Epstein & Baptista (2015) pursue another kind of approach to the C-T boundary in two varieties of a creole and argue that the timing of operations affects the valuation of the C-features. Since all orderings are as efficient, the syntax Is neutral about the order of operations. Variation in timing is very much in keeping with the emphasis on third factors. I discuss each approach in turn.

In the generative models of the 1980s and 1990s, all variation across languages is accounted for by means of parameters. These are seen as choices that Universal Grammar makes available to the language learner that have to be set as +/- on the basis of the available linguistic evidence. Pro-drop is an example of a parameter although it is, in fact, the cover term for a set of related phenomena, the absence of the subject of a finite verb, the possibility to have postverbal subjects, and more (see Chomsky 1981: 240). However, once Universal Grammar plays a smaller role, the only parameters allowed involve the functional lexicon and pro-drop comes to be seen as a property of the lexicon, namely of a strong T (Chomsky 2015). Italian, on the one hand, has a strong T and allows null subjects as well as postverbal subjects, as in (9); English, on the other hand, has a weak T that doesn’t license null subjects or subjects that stay in the vP, as in (10).

(9) a. *verrà* Italian

come.FUT.3S

b. *verrà Gianni*

come.FUT.3S Gianni

`He/Gianni will come.’ (Rizzi 1982: 117)

(10) a. \*Will come.

b. \*Will come Gianni.

In Chomsky (2015: 9), this is worded in the following way: the “Italian T, with rich agreement, can label TP and also {SPEC, TP}; for English, with weak agreement, it cannot, so that SPEC must be visible when LA applies.” The Italian TP is given in (11a) where the T is strong and labels the TP of which it is the head. The verb *verrà* moves to T (for independent reasons) but the subject need not move to the specifier of the TP to share features. When it does, the label will also be TP, as in (11b). In English, the T is weak and cannot label the TP until the subject moves to the specifier, as shown with an arrow in (11c). Once it moves, the label can be <phi, phi>, as we saw in chapter 1.

(11) a. TP b. TP c. ?P = <phi, phi>

ei ei ei

T v\*P *Gianni* TP ?P = <phi, phi>

ei ei ei

*Gianni* v\*’ T v\*P T vP

*verrà verrà Gianni … will* ei

*Gianni …*

This parametric difference in the strength of the functional T head is also argued to account for whether or not a language shows a *that*-trace effect, as we’ll also see in section 4. The *that*-trace effect is absent in many pro-drop languages so it is an advantage if this phenomenon can be accounted for through the same analysis. If T is strong, as in (11a), there doesn’t need to be a lexical subject in the specifier of TP and there is no *that*-trace effect in Italian (12a) because there is no trace of the subject following the C *che*, as shown in (12b).

(12) a. *Chi credi che verrà* Italian

who believe.2S that come.FUT.2S

`Who do you believe will come.’ (Rizzi 1982: 147)

b Chi credi CP[ che TP[ T verrà vP [<chi> verrà]]]

If the T is weak, as in (11b), there is a subject following the C and this subject cannot be moved, as in the well-known *that-*trace effect in (13).

(13) a. \*Who do you think that read the book?

b. Who do you think that <who> read the book

In short, a parametric lexicon, e.g. allowing different strengths of T, allows for variation across languages. As I show later, there are other ways to account for optional complementizers, *that*-trace effects, and other cross-linguistic differences involving the CP-TP area that involve the possibility to leave out one of the functional T or C heads. This is in keeping with a `parametric’ lexicon but doesn’t have to resort to notions like weak or strong. I will therefore argue that T can label the projection it is the head of through Minimal Search but not the projection that includes the specifier because that would `project’ its category. Other ways to account for variation in the CP-TP domain is underspecification of rule ordering, as I’ll now point out and which will be used later in this chapter.

Obata, Epstein & Baptista (2015: 15) have argued that “[o]ptimal computation is executable in more than one way.” If computational efficiency is underspecified, the timing of subject raising to TP and C-agreement (and Feature Inheritance) can vary, as two varieties that use a complementizer *ki*, Cape Verdian Creole and Haitian Creole,show. The difference between the two varieties has the effect of skipping T.

In Cape Verdean Creole (14) and (15), *ki* is obligatory in C with subject and object *wh*-extraction. It appears in the head of every CP that the *wh*-element has passed through, i.e. in cases of successive cyclic movement, as in (16).

(14) *kenhi* ***ki*** *odja João?*  CVC

who C saw João

`Who saw João?’

(15) *kuze* ***ki*** *nhos odja?* CVC

what C you saw

`What did you see?’ (Obata, Epstein & Baptista 2015: 5)

(16) *kenhi* ***ki*** *odja* ***ki*** *João kai di biskleta*  CVC

who C saw C João fall from bicycle

`Who saw that João fell from his bike?’ (Obata, Epstein & Baptista 2015: 6)

In Haitian Creole, the overt *ki* appears in C in the case of subject-extraction in (17) but is disallowed with object extraction in (18). With successive *wh-*movement, only the lowest C is lexicalized as *ki* in (19).

(17) *kilès* ***ki*** *te wè Mari* HC

who C ANT see Mari

`Who saw Mari?’

(18) *kilès Mari te wè* HC

who Mari ANT see

`Who did Mari see?’ (Obata, Epstein & Baptista 2015: 5-6)

(19) *kilès Michel panse Mari kwe* ***ki*** *rich*  HC

who Michel thinks Mari believes C rich

`Who does Michel think Mari believes is rich.’ (Obata, Epstein & Baptista 2015: 11)

The account for the difference between CVC and HC is based on C-agreement checking both the Q features of the *wh-*element and the phi-features of the subject.

The overt realization of *ki* is the result if both features are valued by a single goal. This will always be the case for *wh-*subjects since they will occupy the highest position in the v\*P and they will be the goal for both the agreement and Q features in CVC and HC, as shown in (20).

(20) CP

ei

C TP

[u-Q]/[u-phi] ei

T v\*P

ei

WH …

[i-Q]/[i-3S]

Under determinacy, the *wh*-subject would also have to skip the specifier of the TP.

In the case of objects, there is a difference between CVC and HC. In CVC, the subject doesn’t move to TP until after valuation of the C features so the object (which has adjoined to v\*P) is accessible to C for both features, as (21a) shows, and that’s why *ki* appears. In HC, the subject moves to TP and values the phi-features in (21b) but cannot value the Q-features. That’s why *ki* doesn’t appear with object *wh*-elements.

(21) a. CP CVC b. CP HC

ei ei

C TP C TP

[u-Q]/[u-phi] ei [u-Q]/[u-phi] ei

T v\*P DP T’

ei [i3S] ei

WH vP T v\*P

[i-Q]/[i3S] ei ei

DP v’ WH vP

[i3S] ei [i-Q] ei

v <WH> <DP> … <WH>

The cases of successive cyclic movement are similar. In CVC, the object will always be highest at the time of valuation, so the *ki* appears in (16). In HC (19), only the lowest C agrees with a *wh*-element that checks both Q and phi-features and the others have split agreement and lack *ki.* The explanation of the variation in *ki-*expression in CVC and HC relies on early or late movement of the subject to the specifier of the TP in the case of object extraction and the skipping of the TP in the case of subject extraction. If these operations are both optimal, the variation is to be expected. In chapter 2, we have seen another case of optionality of rule operations, namely the application of Müller (2009) regarding the optionality of how merge and agree are ordered.

This section has discussed ways of accounting for variation in the C/T domain. Relying on a weak or strong T is one way to explain the variation around the CP-TP boundary and the optionality of rule orderings is another. There is a third way of accounting for variation where CP-TP phenomena like null subjects, *that*-trace, and a few other phenomena are concerned, as will be discussed in the next three sections.

**4 CP deletion**

In this section, I first briefly reintroduce the well-known *that-*trace effect in English and show how the current instantiation of the Minimalist Program accounts for it, either as a labeling paradox or as an indeterminate structure. In the previous section, it has been illustrated that a weak T accounts for the effect in English. In this section, I show that there are alternative resolutions, namely C-deletion or the insertion of expletives, and argue that there are other phenomena that support the C-deletion analysis, namely subject-less relative clauses and complementizer deletion in regular subordinate clauses, i.e. those without *wh*-extraction.

*4.1* That*-trace in English*

The *that*-trace effect is first observed by Perlmutter (1971) and has received much attention since then, e.g. Chomsky & Lasnik (1977), Chomsky (1981), Pesetsky (1982), and recently again in Chomsky (2015). In the latter’s model, the analysis depends on the strength of the T and the optionality of the C.

In English, when a *wh*-element is extracted from the subject position of an embedded clause, the complementizer *that* is not present, as shown in (22).

(22) a. Who do you think read the book?

b. Who do you think <who> read the book?

If the complementizer *that* is present, a *that*-trace violation occurs, as was shown in (13) above and repeated as (23): a sequence of a complementizer *that* and a position from which a *wh*-element has been extracted is ungrammatical. In earlier work, a `trace’ of *wh*-movement was left, which I have represented as a copy in (23b), and hence the name *that*-trace.

(23) a. \*Who do you think that read the book?

b. Who do you think that <who> read the book

Using a Labeling Algorithmic approach, as in Chomsky (2015), the distinction between (22) and (23) receives an explanation because the embedded TP in (23), represented by α in (24), cannot be labelled if *who* has moved. The reason is that English T is weak and “at the labeling stage, the subject must be visible, not a copy, in SPEC position in [C [SPEC-TP]]” (Chomsky 2015: 9).

(24) [γ Who do you v\* [ε think [δ C that [α <who> T <who> read the book]]]]

When the C phase head deletes (Chomsky 2015: 10-11), T not only inherits the phi-features but also the phasehood of C and *who* remains in the specifier of the TP. Handing over the phase head to T means that the complement of T, i.e. the lower v\*P, is transferred, as in (25), and that *who* remains accessible for internal merge to the matrix CP.

(25) [γ Who do you v\* [ε think [δ C [α <who> T v\*P[<who> read the book]]]]]

Transfer

Chomsky includes δ and C in (25) but the question remains whether the CP is in fact present at all. Another way of thinking about this is (26), with just a TP (I have kept the traditional labels).

(26) CP1[ Who [do TP1[you [T vP[think TP2[<who> T v\*P[<who> read the book]]]]]]].

Transfer

So, the impossibility of labeling α in (25) accounts for the *that-*trace effect and its resolution in (22) does so basically by ignoring the CP. This account unifies the earlier EPP (English TPs need specifiers) and ECP (the specifier of TP cannot be left empty through movement).

The *that*-trace effect has an alternative explanation in current minimalism: determinacy requirements rule out a structure with a *that-*trace when the CP is present and allow it when the CP isn’t. If the CP is present, as shown in (27), the (internal) merge of *who* to the specifier of the embedded CP2 is indeterminate because there is a choice of two copies of *who*, one in the specifier of the v\*P and another in the specifier of the TP.

(27) CP1[ Who [do TP1[you [T v\*P[<you> think

CP2[<who> [that TP2[<who> T v\*P[<who> v\* read the book]]]]]]]]].

2 copies of *who* in WS Transfer

However, once the C phase head deletes, as in (25) or (26), and T is the phase head, the v\*P will be transferred and there will only be one copy in the input for the move out of the clause. This is shown in (28).

(28) CP1[ Who [do TP1[you [T vP[think TP2[<who> T v\*P[<who> v\* read the book]]]]]]].

Transfer 2 Transfer 1

With existential constructions, expletive subjects are possible and these will prevent *that-*trace violations because a second copy of the *wh-*element in the specifier of the TP will not be there. That’s the reason (29a) is grammatical as opposed to (29b).

(29) a. What do you think that **there** is in the box?

b. \*What do you think that is in the box?

(Rizzi and Shlonsky 2007: 126, cited in Goto and Ishii 2019).

When an expletive is possible, as in (29a), and appears in the specifier of TP, it is of course no longer a *that*-trace violation. The TP can now be labeled <phi, phi> and the structure is no longer indeterminate either.

As Ross (1967: 445) discovered, the same holds for the infinitival *for*-trace effect in (30), which has not received much attention. In (30), the complement of the v\* would be transferred but that would leave two copies, one in the specifier of v\*P and another in the specifier of TP, and that structure would be indeterminate. Here too, an expletive makes the indeterminate structure determinate, as shown in (31).

(30) a. \*Who do you expect for to win?

b. CP[who [do TP[you [T v\*P[expect CP[<who> [for TP[<who> [to v\*P[<who> win]]]]]]]]]].

(31) a. Asked my boyfriend: when you look at this box, what do you expect for **there** to be inside of it? (<https://www.reddit.com/r/MakeupAddiction/comments/4yrwnh/duh_moment_what_i_thought_was_a_set_of_two/>)

b. CP1[ What [do TP1[you [T v\*P[expect CP2[<what> [for TP2[there [to v\*P[<what> be PP]]]]]]]]]].

The *that*-trace effect has been analyzed in many different ways since the 1970s, as a surface filter in Chomsky (1973) and Chomsky & Lasnik (1977) and as a lack of government (ECP) in Chomsky (1981). Third factor principles, such as labeling and determinacy, also offer ways to account for the effect within minimalism. The deletion of the complementizer or the insertion of an expletive constitute two ways that avoid these violations. The removal of the complementizer means that the *wh*-element can remain in the specifier of the TP so that the TP can be labeled (as <phi, phi>) and it also means that determinacy is not violated once the T becomes the phase head, sending off the v\*P complement with the problematic extra copy.

In short, *that-*trace violations can be resolved through a weak T and the deletion of the complementizer, as in Chomsky (2015). If either C-T (with C as phase head) or T (as phase head and without C) is allowed, there is no need to rely on the weak T. Extra evidence for the optionality of C can be found in subject-less relative clauses, which are discussed next.

*4.2 Subject-less relative clauses*

In chapter 1, in connection with antilocality (Grohmann 2003), it was mentioned that subject-less relative clauses are grammatical in some languages. In this section, I first provide examples from different stages of English, starting in late Middle English, and show that, although these constructions may look like they have indeterminate derivations, an analysis can be provided in which they are determinate. This explanation is similar to that in the previous section, namely, it posits a structure without a CP, which has also been argued for in Doherty (2000) but without a determinacy approach.

Subject-less relative clauses, as in (32) to (34), occur in many present-day varieties of English, but they are no longer considered part of the standard language. Jespersen (1927: 135) uses the term `contact clause’ for all relative clauses that leave out the pronoun and complementizer and that term is still current, e.g. it is used in Doherty (2000) and Radford (2019).

(32) *Anybody does that ought to be locked up.*

`Anyone **who** does that ought to be locked up.’ (from Quirk et al 1985: 1250)

(33) *It’s Simon did it.*

`It is Simon **who** did it.’ (from Quirk et al 1985: 1250)

(34) *He’s brought 4 lads in are explosive*

`He has brought four lads in **who** are explosive.’ (Radford 2019: 14)

I will show that these subject contact relatives start in Middle English and then, for reasons unknown to me, only survive in certain varieties of Modern English.

According to Visser (1963: 11) and Mitchell (1985, II, 86), in Old English, the construction is restricted to sentences with *hatan* `be called,’ as in (35). Johanna Wood (p.c.) suggests that, because of the passive nature of *hatan*, then there is no null subject so not a subject contact relative.

(35) *betux þære ie Indus & þære þe be westan hiere is, Tigris hatte*

between that river Indus and that REL by west her is, Tigris is.called

`between the river Indus and the one that is west of her, **which** is called the Tigris.’

(Orosius, Bately 10.1, from Mitchell)

It is only in late Middle and early Modern English that real subject-less relatives become acceptable, as (36) to (39) show.

(36) *I fonde þere freris, alle þe foure ordres, Preched þe peple*

`I found there brothers, of all four orders, **who** preached to the people.’

(Piers Plowman, B, Prologue 59, from Mustanoja 1960: 205)

(37) *he sente after a cherle was in the toun.*

`He sent for a man **who** was in town.’ (Chaucer, Physician’s Tale 140, from Mustanoja 1960: 205)

(38) *lete fetche the best hors maye be founde.*

`Let the best horse be fetched **that** can be found.’ (Malory 137, from Jespersen 1927: 143)

(39) *I bring him news will raise his drooping spirits.*

`I will bring him news **that** will raise his drooping spirits.’

(Dryden 5.327, from Jespersen 1927: 143)

The Early Modern period has extensive use of the contact-clause. Jansen & Schlenck (1991) study the Early Modern *Arcadia* by Philip Sydney, which is close to spoken language. In Sydney, the zero option occurs more often in restrictive relative clauses and with non-animate antecedents. Rydén (1966: 267ff.) also shows that it occurs mainly in restrictive relative clauses; his texts in which the construction appears are varied and he finds no difference between formal and informal use.

By (later) Modern English, the construction is no longer considered grammatical in standard varieties of English. In the varieties where it does appear – Appalachian English, Ozark English, Hiberno English, Newfoundland English, African American English, Gullah, Southwest British, and Hong Kong English are mentioned most (see <https://ewave-atlas.org/parameters/193#2/33.1/16.7>) - the typical constructions are with existentials and clefts, as in (33) above (Rydén 1966: 268), but in some, it can be with any verb, e.g. (40) and (41).

(40) *I know a man lives in St Louis.*

I know a man **who** lives in St Louis (Haden Elgin & Elgin 1991: 9)

(41) *The man own the land come over.*

`The man **who** owns the land came over.’ (from Chomsky & Lasnik 1977: 428)

Many people consider the use of subject-less relative to have a pragmatic function: to keep the focus of the sentence, as in (41), from being the (topical) subject. That may be the reason inanimates are more frequently deleted.

Syntactically, I will argue that these constructions just use a TP, in a way very similar to the strategy on how to avoid *that-*trace violations. Doherty’s (2000: 66) structure for the grammatical subject-less relatives in (42), is also one of a CP-less structure with a direct link between the external head N, i.e. *man*, and the subject position, as shown in the slightly adapted (43).

(42) *The man likes Mary lives next door.*

The man who likes Mary lives next door.

(43) DP

ei

D NP

The ei

NPi TP

man 4

ei likes Mary

Grohmann’s (2003) analysis of ungrammatical subject-less relative clause is very similar, i.e. as in (44), but he attributes the ungrammaticality to an additional movement. Adjunction of the null operator is to the TP and, as shown in (44), and this would be ungrammatical because it involves too local a movement inside the TP domain.

(44) The man TP[OPi TP[ti likes Mary]] lives next door.

Grohmann uses an operator and, in the current model (e.g. Chomsky 2019), that makes this construction indeterminate if there is a C phase head, as shown in (45).

(45) The man CP[ C TP[ OPi TP[<man>i vP[< man>i likes Mary]]]] ...

Below, I use a Kaynian approach to relative clauses and argue that these constructions can be analyzed as TPs to avoid determinacy violations.

Adapting Grohmann’s and Doherty’s analysis for subject contact clauses in terms of determinacy would procede as follows. In *that-*less clauses, such as (46a), a phase transfer from C to T, as in (46b), would take place, just as in *that-*trace constructions. I have shown that by means of [u-phi] features on T. Once T is the phase head, the complement of T is transferred to the interfaces. As a result, the offending copy in the specifier of the vP is removed from the workspace/phase and *who* is accessible to further operations.

(46) a. The man likes Mary …

b. The man TP[ <man> T vP[ <man> likes Mary]]

u-phi: 3S Transfer

Non-restrictive relative clauses, as in (47), generally do not participate (Erdmann 1980; Rydén 1966: 267) because, as independent clauses, they need overt Cs.

(47) ?? Sharon, likes the man next door, …

Grohmann and Doherty both assume externally-headed relative clauses. With a raising analysis for relative clauses, as in Kayne (1994), the data can also be accounted for using the same options available in the functional lexicon: some languages have CP relative clauses (and can’t have subject-less relatives) and others TP ones (and can have these). The trees are shown in (48), where (48a) is the indeterminate structure because *man* appears in the specifier of TP and of v\*P and (48b) the determinate one, with only one instance of *man*.

(48) a. DP b. DP

ei ei

D CP D TP

*The* ei *The* ei

DP C’ DP T’

*man* ei *man* ei

C TP T v\*P

(*that*) ei ei

DP T’ DP *likes Mary*

<man> ei <man>

T v\*P

ei

<man> *likes Mary*

In this section, I have shown that subject-less relative clauses start to occur in late Middle English and continue to be used in many varieties of English. The change occurs around the middle of the 14th century when English changes from a CP-oriented to a TP-oriented language, as will be discussed more in chapter 5. The Modern English non-standard construction is a continuation of Middle English when the CP became of less importance. Many speakers report that these constructions sound grammatical but it isn’t clear why they left the standard language.

In short, as in the resolution of the *that*-trace effect, one could analyze null subject relatives as C to T transfer, as in (46b), and then the copies that are in the phase/workspace become determinate. This means, in effect, that there is no CP, but just a TP with T as phase head. The next section examines a third instance of CP-deletion/absence.

*4.3 C-less complement clauses*

*That*-deletion in complement clauses is a feature of Modern English. It seems to be optional as the near-minimal pairs in (49) and (50) show.

(49) I certainly do **believe** it is going to balance the budget by the year 2002. (Spoken COCA 1995)

(50) And they do **believe that** it is going to deliver the kind of economic growth that no nonpartisan analysis has (Spoken COCA 2017)

Rohdenburg (2018a) argues that the reason for the retention is due to complexity: the more complex the less likely the deletion. According to Fowler (1926, s.v. *that*) and Biber, Conrad, and Leech (2002: 321), the use of the complementizer is part of a more formal register and that fits with Rohdenburg’s argument as well in that formal registers are more explicit. Fowler also argues that certain verbs have prefered patterns: *agree, assume,* and *assert* typically prefer the complementizer whereas *believe, think,* and *suppose* don’t. This suggests a semantic difference between factives and non-factives, respectively, and therefore a selection of a CP or TP determined by the higher verb.

Two analyses are possible: either the CP is not lexically filled but present or the CP is not present. The latter option is explored by Doherty (2000, chapter 2). He argues that sentences without the *that* complementizer are in fact just TPs (IPs for him). The differences in topicalization, shown in (51) and (52), provide a major piece of evidence. Assuming that topics have to be positioned in the expanded CP, there is simply no such position in a CP-less (53). Hence the ungrammaticality of (52); see also Rizzi and Shlonsky (2007: 151) who cite Grimshaw (1997).

(51) I hope that [this book] you will read.

(52) \*I hope [this book] you will read.

(both from Doherty 2000: 13)

(53) VP

ei

V TP

hope ei

DP T’

you …

The Modern English optionality of the complementizer is very different from that of earlier stages of English and that of other Germanic languages, as shown in (54).

(54) a. *Ik geloof* ***dat*** *hij haar wilde zien* Dutch

I believe that he her wanted see

b. \**Ik geloof hij haar wilde zien*

I believe he her wanted see

`I believe (that) he wanted to see her.’

In section 5.3, I show that older English patterns with (54) in (mostly) not allowing *that-*less clauses. This situation lasts till the end of Middle English when a major shift from C-orientation to T-orientation takes place (see also chapter 5). Wyclif is one of the texts that abandons Verb-second, i.e. movement to C, for SV, i.e. movement to T. This change in word order is a sign of reorientation from CP to TP, and Warner (1982: 168ff.) argues that *that* in (55) is as optional in the Wyclif sermons of 1380 as it is in modern English.

(55) *and he* ***seide*** *he ouƷte him an hundrid barrels of oyle*

`and he said he owed him a hundred barrels of oil.’ (Wyclif, Warner 1982: 168)

In short, if the CP-TP boundary is indeed somewhat flexible, with some languages selecting TP and others CP, the data in sections 4.1 to 4.3 show that Modern English optionally selects CP but always selects TP. We’ll now turn to languages and stages that select CP instead of TP.

**5 Languages without TP**

In chapter 5, I will provide a fuller picture of the differences between C-oriented Verb-second languages and T-oriented SV ones. Verb-second languages include a CP in their spine but not a TP. This can be argued from an empirical point of view and, from a theoretical point of view, these languages can’t include a TP or else determinacy would be violated. The current chapter emphasizes the variation that third factor principles allow and, in this section, I show that these languages allow *that-*trace sequences because of the absence of TP. I first show how that would work in Dutch and then I examine Old English instances. The final part shows that languages such as Dutch do not delete the complementizer in object clauses, as English does, and disallow subject-less relatives.

*5.1 The absence of a* that*-trace effect*

In section 4.1, two ways to avoid complementizer-trace sequences were presented. Both reduce the CP-TP boundary: the use of the expletive means that the specifier of TP is no longer a problem and the complementizer can delete to eliminate the CP. A third way in which *that*-trace sequences are avoided happens in languages where the subject can remain in the v\*P and avoid moving to TP.

If the reason for the ungrammaticality of *that*-trace sentences is a problem in labeling TP or is due to indeterminacy (a subject in both the specifier of the TP and v\*P), then that effect is not expected in languages without or with optional movement to the specifier of the TP. This is borne out in Dutch (56), as has been known since Maling and Zaenen (1978), and in German (57), from Bayer (1984).

(56) a. *Wie denk je dat weggegaan is?* Dutch

who think you that left has

`Who do you think left?

b. Wie denk je CP[ <wie> dat v\*P[ <wie> weggegaan is]].

(57) a. *Wer meinst du daß ihn geküßt hat?* German

who think you that him kissed has

`Who do you think kissed him.’

b. Wer meinst du CP [<wer> daß v\*P [<wer> ihn geküßt hat]]?

The same *that*-trace violation can be avoided, as Goto and Ishii (2019) show, in a variety of languages that lack a subject in the specifier of the TP. For instance, Japanese has been argued since Fukui (1986) and Kuroda (1988) to not move the subject outside of the v\*P and to not show a *that*-trace effect. Likewise, many varieties of Arabic allow *that-*trace sequences (Halila 1992: 166) and can leave their subjects in the v\*P.

Under a determinacy view, the impossibility of *that*-trace is tied up with the subject being in the specifier of the TP. A way out is either to not have the subject in the specifier of the TP (as in Dutch), or to fill it with an expletive (as in (29a)), or to cancel a phase (as in English).

*5.2 Old English that-trace*

Old and Middle English, like Dutch and German, can be argued to have a CP but not a TP, up to around 1400 when the situation changes. Here, I will show that *that*-trace sequences are indeed common in the earlier stages of English and that they can be accounted for as in Dutch, namely without a TP. This discussion will also help set the stage for the arguments used in chapter 5 for the loss of T to C movement.

Allen (1977: 122) says that *wh*-extractions from a clause “are quite common” in Old English but she provides only one instance of *that* followed by an extracted subject, namely (58).

(58) *Ac* ***hwæt*** *saegst ðu ðonne* ***ðæt \_\_ sie*** *forcuðre ðonne sio ungesceadwisnes?*

But what say you then that be.SUBJ more.wicked than be foolishness

`But what do you say is more wicked than foolishness.'

(Alfred, *Boethius* XXXVI.8, from Allen 1977: 122)

A search of the YCOE (Prose) (of all *that* followed by zero) reveals the selection of complementizers not followed by a subject in (59) to (62). There are, however, hundreds of these. I have marked the absence of the subject with underlining but that subject arguably never moved through that position.

(59) *& of þam ilcan bocum tyn capitulas, þa ic geond*

and of those same books ten chapters those I throughout

*stowe awrat & ic wiste* ***þæt \_­\_ swiðost nedðearflecu wæron***

place wrote and I knew that most needful were

‘and ten chapters of the same books which I had transcribed and which I knew were most necessary’ (Bede 278.1-2, Miller 1890)

(60) *& he geornlice þa ongan leornian & don þa þe he*

and he gladly then began learn and do those REL he

*ongeat* ***þætte \_\_ belumpun*** *to þære mynsterlican clænsunge& arfæstnesse*

perceived that belonged to that monastic purity and goodness

`and he then gladly began to learn and carry out those things which he perceived to belong to monastic purity and goodness’ (Bede 450.30-541.1-2, Miller 1890)

(61) *Hwæt, we genog georne witon ðæt nanne mon þæs ne tweoð þæt*

Indeed we very well know that no man that NEG doubts that

*se sie strong on his mægene þe mon gesihð*

that be strong in his virtue REL man sees

***þæt \_\_*** *stronglic weorc* ***wyrcð***

that strongly work works

‘We know very well that no man doubts that he is strong in his virtue who people see to be doing laborious work’ (Boethius 38.2-4, Sedgefield)

(62) *þæm þe ðu ongitst* ***þætte \_\_ ligð*** *on his lichoman lustum*

him REL you perceive that lies in his body’s desires

`he who you perceive indulging in his body’s desires’ (Boethius 115.5-6, Sedgefield)

Allen’s example is of a subjunctive clause and I have therefore provided subjunctives in (63) to (67), some with a special complementizer *þætte*and some with the verb immediately following. I’ll come back to subjunctives in the next chapter.

(63) *Be ðæm cwæð sio Soðfæstnes ðurh hi selfe, ðæt is Crist, he cwæð:*

Therefore spoke that Truth through it self that is Christ he said

***Hwa wenstu  ðæt \_\_ sie*** *to ðæm getreow & to ðæm wis brytnere ðæt hine*

Who think.you that be to that faithful and to that degree prudent that him

*God gesette ofer his hired, to ðæm ðæt he him to tide gemetlice gedæle ðone hwæte?*

God put over his house so that that he him at time equitably divide the wheat?

`Therefore, Truth, that is Christ, spoke itself. He said “Who do you think is so faithful and prudent a steward that God will appoint him at his household so that he may equitably divide the wheat to them when the time comes.’ (*Pastoral Care* 459.9, Sweet 1871)

(64) ***Hwa is nu ðære ðe \_\_*** *gesceadwis sie & to ðæm gleaw sie*

Who is now there that wise be and to that wise be

*ðæt he swelces hwæt tocnawan cunne ðætte nyte ðætte on gimma gecynde*

that he such what distinguish can that not.know that in gems family

*carbunculus bið dio[r]ra ðonne iacinctus?*

carbuncular is more-costly than iacinctus?

'For who is there, who is wise and experienced enough to distinguish such things, who does not know that in the class of gems the carbuncle is more precious than the jacinth.' (*Pastoral Care* 411.25-8, Sweet 1871)

(65) *Eall þæt þætte annesse hæfð, þæt we secgað* ***þætte* \_\_ *sie*** *þa hwile þe hit ætsomne bið;*

All that that unity has, that we say that be then while it together be

*& þa samwrædnesse we hatað good.*

and that unity we call good.

`All that has unity which we say exists together while it remains together; that unity we call good.’ (Boethius, 114.2-4, Sedgefield)

(66) *Hwylc þara þreora þyncð þe* ***þæt \_\_ sy*** *þæs mæg, þe on ða sceaðan befeoll.*

Which these three think thou that be the kinsman that among thieves fell?

`Which of these three do you think that was neighbor of the one that fell among the thieves?’ (Luke, WSCp, 10.36)

(67) *Ða cwæþ Drihten, hwa wenst þu* ***þæt \_\_ sy*** *getrywe & gleaw dihtnere, þæne se hlaford geset ofer hys hired...*

Then said Lord who think thou that be faithful and wise steward, who the lord put over his household ...

`Then the Lord said: who do you think is the faithful and wise steward that the lord will make steward of his house?’ (Luke, WSCp, 12.42)

In this section, examples of that *that-*trace sequences have been provided from Old English, both in indicative and subjunctive clauses. As I show in section 5.2 of chapter 4, even in Modern English, *that-*trace sequences are still possible with certain subjunctives.

Middle English *that*-trace sequences, as in (68), have been documented by Bergh and Seppänen (1994). These sequences become less frequent throughout the Middle English period and cease to exist in the Early Modern period.

(68) *grymbert who wolde ye* ***that \_\_*** *sholde goo and daye hym to come.*

Grymbert who want you that should go and dare him to come

`Grymbert, who do you want that should go and dare him to come.’ (Reynard, Bergh and Seppänen 1994: 132)

Bergh and Seppänen argue that the “general decrease of *that* was a major factor” in the loss of *that*-trace sequences “between the early 15th century and the late 17th century” (1994: 138). This means the optionality of C is connected to the presence of a T: if T is present, C can be optional and, if T is not, C has to be there, as is shown in the next section.

In this section, I have provided examples of complementizers followed by subject gaps. If Dutch, (German,) and older stages of English lack a TP, there is no gap. That explains the grammaticality of (13) and (59) to (68). If the TP is optional but the CP obligatory, *that-*deletion in complements is not expected either and I turn to that next.

*5.3 Obligatory* that *and no subject-less relatives*

In languages such as Dutch, the complementizer is not typically deletable, as shown in (54) of section 4.3. With a verb like *beloven* `promise’, the only possibility is a V-final subordinate with a complementizer, as in (69a), and not one without, either with V-last or Verb-second, as in (69b) and (69c), respectively.

(69) a. *Hij beloofde* ***dat*** *hij haar ging opzoeken* Dutch

he promised that he her went visit

b. \**Hij beloofde hij haar* ***ging opzoeken*** V-last

he promised he her went visit

c. \**Hij beloofde hij* ***ging*** *haar opzoeken* V-second

he promised he went her visit

`He promised he’d go visit her.’

*That*-deletion occurs in those cases where the embedded object is a direct quote as with verbs like Dutch *zeggen* `to say’ in (70). Note that the word order in the embedded clause is V2 which is typical for a main clause not an embedded one. That makes the connection between these clauses very loose.

(70) *Ik zei hij* ***moet*** *dat maar doen* V2 subordinate

I said he must that PRT do

`I said that he should do that.’

The semantics of the matrix verbs is responsible for the appearance of an embedded clause that either has the characteristics of a V2 main clause, as in (70), or of a V-final embedded one with the complementizer, as in (69a). I will therefore argue that the embedded CP cannot delete its C head.

Turning to older stages of English, *that*-deletion doesn’t occur after verbs like (*ge)hyran* `hear’, as (71) shows. According to Mitchell (1985, II: 25-34), complementizers are only left out for direct speech in Old English (72).

(71) *Ic … secgan hyrde* ***þæt*** *hie gesawon …*

I say heard that they saw …

`I heard it said that they saw ..’ (Beowulf, 1345-7)

(72) *Ic secge eow. manega* ***cweðað***  *to me on ðam micclum dæge.*

I tell you many say to me on that great day

*drihten drihten. la hu ne witegode we on þinum naman.*

Lord Lord hear how NEG prophesied we in your name.

`I’ll tell you: Many will say to me to me on that great day “Lord, Lord, lo! have we not prophesied in thy name …”’

(*Catholic Homilies*, first series, Clemoes, 351.183, from Mitchell 1985, II. 29)

So, complements of ‘say’ verbs act like main clauses and that means they are CPs but without a complementizer. It is therefore also possible to say that verbs such as *say* in these languages always have a CP complement but with an optional complementizer: if the complementizer is not present, Verb-movement occurs (cf. Haider 1986: 53).

In early Middle English, e.g. the 13th century *Wohunge* (see van Gelderen 1993), the only verbs that allow *that*-deletion are *seggen* `to say', as in (73), and *cwidden* `to say.’ These are verbs whose complements are more like main clauses in Dutch (70) and Old English (72) as well. These clauses are not verb-final as typical subordinate clauses are.

(73) *he* ***seide*** *ne dred tu nawt for …*

he said NEG dread you not for

`He said do not fear because …’ (*Wohunge,* 412, Thompson 1958)

None of the other verbs in this early Middle English text, e.g. *praie* `to pray’, *þunche* `seem', *understonde* `understand', *wearnen* `refuse', *see*, *leue* `to grant,' have *that*-deletion, as (74) shows.

(74) *A iesu swete iesu leue*  ***þ*** *te luue of þe beo*

Oh Jesus sweet Jesus grant that the love of you will.be

`Oh, Jesus, sweet Jesus, grant that the love of you will be ….’ (Wohunge, 55-56, Thompson 1958)

Other thirteenth century texts, again show no *that*-deletion, except with *seggen*. Examples of sentences with *that* are (75) and (76).

(75) *Nu þu wast* ***þet*** *ha habbeð ...*

Now you know that …

`Now you know that they have'. (*Hali M*, Bodley, 89-90)

(76) *ha lette* ***þet*** *ha ifont swuch grace ...*

she believed that she found such grace

`She believed she experienced such grace.' (*Hali Meidenhad*, Bodley, 668)

In Layamon, another early Middle English text, *that*-deletion does not occur either. Sentences (77) to (79) are typical instances where *that* is present, taken from the Caligula version.

(77)  *7 swa heo sculden under-stonden.* ***þat*** *ich am king of Brut-londe,*

`and so they must understand that I am king of Brittany'. (Layamon, *Brut*, Cal. 3065)

(78) *Nu þu wult under-uon.* ***þat*** *nauer ær nes idon*

`Now you will undertake that (it) was never before done'. (Layamon, *Brut*, Cal. 15118)

(79) *and saide* ***þat*** *he wolde. aquellen heom a londe*

`and said that he wanted to destroy him on land'. (Layamon, *Brut*, Cal. 14874)

The fact that *that* must be present can be seen as additional evidence that tense features occupy C and that they must be lexicalized. This means that, in this period, Verb-movement occurs in main clauses and the complementizer *that* must be present in subordinate clauses.

If subject-less relatives are CP-less clauses, languages like Old English and Dutch, with CPs but without TPs, will be expected not to have them and this is borne out by the non-appearance of subject-less relatives in Old English (except in (35)), and the ungrammaticality of them in Dutch (80), which is the translation of (32).

(80) *\*Iemand [\_\_ dat doet] moet opgesloten worden.* Dutch

Someone that does must loacked.up be

`Someone who does that should be locked up.’

Subject-less relatives start to occur in late Middle English.

Concluding section 5, in Dutch and older stages of English, *that-*trace sequences occur and complementizers are not optional. That is accounted for if these stages lack TP but include CP in their clausal spines. As for subject-less relative clauses, these are not grammatical in TP-lacking stages and languages such as Dutch and Old English.

**6 C-agreement**

As mentioned, Chomsky (2013; 2015) assumes that T inherits phi-features from C but admits that this choice may be parametric. In languages where the subject does not need to move to the specifier of the TP or where there is no T, the C would have features and keep them or the v\*/v would inherit them for labeling purposes. In varieties of Dutch and German, there is indeed evidence that the C retains the features and transmits to to a lower head.

Languages without a strong T often show complementizer agreement. This might be evidence that the C has features that (when needed) the lower verb inherits. For instance, the C in (81) has second person features which the finite verb inherits.

(81) *I frog’ me* ***ob-sd*** *ned du des mocha* ***kan-sd*** Bavarian German

I ask myself if-2S NEG you this make can-2S

’I am asking myself whether you could not make this.’ (Weiβ 2005)

Haegeman and van Koppen (2012) show that agreement on C and on the inflected verb can be different: it can be person on C and number on the verb, as in the Limburgian (82).

(82) *Ich dink* ***de-s***  *[toow en Marie]* ***kump.*** Limburgian

I think that-2S you.S and Marie come.P

‘I think that you and Marie will come.’

Under the feature inheritance approach, that would mean that two kinds of features are present on C but only one kind would be inherited. Haegeman and van Koppen, while assuming C and T, argue against inheritance and in favor of separate agreement domains. Alternatively, one could argue that C has features which the verb inherits, without inheritance through T.

Obata, Epstein, and Baptista (2015: fn21) also suggest that the C in C-agreement languages has two kinds of features, one kind that stays on C and one kind that transfers to T. The data in (82) would have a set of person features that stays on C and a set that is transferred to T. If that is correct, in T-less languages, the C must be able to check both sets, as in (83).

(83) CP

ei

C v\*P (= <phi, phi>)

[u-ps] ei

[u-phi] DP v\*P

ei

VP v\*

ei

DP V

In order to label what I have labeled the top v\*P in (83), v\* would have to inherit features from C so that it can be labeled <phi, phi>. This is similar to what I have argued for Arabic at the end of section 2 in chapter 2.

Even in varieties of Dutch without C-agreement, i.e. standard ones, there are two kinds of agreement, as (84) shows: the inflection on verbs is different depending on the (second person singular) pronoun preceding or following the verb, as in (84a) and (84bc), respectively.

(84) a. ***Ga*** *jij daar vaak heen?* Dutch

go you there often to

`Do you often go there?’

b. *Jij* ***gaat*** *daar vaak heen.*

you go there often to

‘You often go there.’

c. *… dat jij daar vaak heen* ***gaat.***

that you there often to go

‘that you go there often.’

This implies that the pronoun in (85a) and (86a) is a clitic or an agreement marker and that is confirmed by the fact that nothing can intervene, as (86a) and (86b) show.

(85) a. ***Ga*** *jij daar vaak heen?* Dutch

go you there often to

b. \****Ga*** *vaak* ***jij*** *daar heen?*

ga often you ther to

‘Do you go there often?'

(86) a. ... ***dat ie*** *gisteren zou aankomen* Dutch

that he yesterday would arrive

b. \*... **dat gisteren hij/ie** zou aankomen

that yesterday he would arrive

‘that he'd arrive yesterday.’

De Vogelaer et al. (2002: 236) provide the paradigm for Dutch inverted and non-inverted verbs with the doubled subject pronouns, as in (87), and maps of the Dutch speaking areas where they occur, mainly in Flanders and Brabant. The doubling in (87) shows that the clitics have become agreement markers and C is a probe looking for interpretable phi-features. As with pronouns in the subject cycle in chapter 2, the least acceptable doublings are the third person ones.

(87) *Da ken-****ik ik***  Flemish

That know-I I

‘I know that.’

Concluding section 6, TP-less languages may have C-agreement, which typically involves two sets of features, one that stays on C and a set that v\*/v inherits. The latter is visible on the verb and is used to label the projection that combines the subject to the rest of the v\*P. As a result, the subject need not move as it does in English.

**7 Conclusion**

There are many ways to achieve optimal computation. For instance, the syntax `doesn’t care’ if the subject moves to the specifier of TP before valuation or after, as shown in section 3 through the work of Obata, Epstein, and Baptista (2015). Likewise, the C-T complex can be simplified in a number of ways: (a) C transfers phasehood to T and the CP deletes or is not present, as shown in sections 4.2 and 4.3, or (b) TP is not present, as shown in section 5. Section 6 touches on C-agreement since that suggests the agreement features stay on C in T-less languages. Table 3.1 provides a typology of choices and how the difference is evident linguistically.

|  |
| --- |
| Optional CP Optional TP  *That*-trace sequence no; English () yes; Old English (), Dutch ()  Subject-less RCs some; English () no  C-less complements yes; English () no  C-agreement no some; Dutch () |

Table 3.1: A typology of choices for the C-T complex

**Chapter 4**

**Determinacy in Language Change**

**1 Introduction**

As discussed in chapters 1 and 3, the Principle of Determinacy rules out having two or more choices in the phase. If a phrase should move from one position to another in the same phase, i.e. without being transferred/eliminated from the workspace, there would be a dilemma: which of the two copies will move to a higher position. A need for determinate structures is the reason behind the Subject Island Condition, the ban on topicalization of the subject, and the *that*-trace effect.

In this chapter, I argue that determinacy is also responsible for the reanalysis of a topic to a subject, of a pronoun as a copula, and of a lower verb as a higher auxiliary. In null subject languages, the topic is ambiguous between topic and subject and the reanalysis of the former as the latter is due to avoiding a possible determinacy violation in the case of topics. Pronominal subjects in languages with null copulas are ambiguous between pronominal subjects and verbal copulas and, because of difficulties in labeling the pronominal DP and predicate and in reaching a determinate solution to this, are prone to reanalysis. As a result, erstwhile topics are drawn to become subjects. I also consider the movements of auxiliaries to T and C in English to see if determinacy is an issue. I will argue that it is relevant in the case of auxiliaries, which can be seen to `skip’ the TP. In the case of floating quantifiers, there is no evidence that they ever violate determinacy because they start out as QPs and move as DPs.

The outline is as follows. In section 2, I provide examples of reanalyses from topic to subject. Section 3 examines the same reanalysis but then with copula constructions. In sections 4 and 5, I discuss head-movement and Quantifier Float and how these also obey the Principle of Determinacy. Section 6 is a conclusion.

**2 From Topic to Subject**

Topicalized elements face potential difficulties if derivations are to follow Third Factor Principles. There are two types of topics, one that moves from inside the clause to the left periphery and another that is base generated in the left periphery, and each type faces another kind of problem. For subjects that move from the VP/v\*P to the TP, further topicalization into the CP domain will be barred because of indeterminacy. Base generated topics are, of course, unproblematic for determinacy considerations because no movement is involved from the subject position. These base generated topics, however, are not well-integrated in the clausal structure. Both types of topic are therefore candidates for reanalysis as arguments.

As pronouns develop into agreement markers – something we have seen in chapter 2 -, situations arise where topics appear with null subjects. These topics are then ambiguous between topic or subject and reanalysis may occur. In this section, I first discuss the difference between topic and subject, then look at cases of reanalysis, and provide a third factor account.

*2.1 Subjects and topics*

Both subjects and topics are difficult concepts to define. The subject represents a grammatical role and the topic a pragmatic role; the subject is more integrated in the clause in that, in many languages, it agrees with the verb and is assigned a case by it. This shows an interaction with the phase head C. The topic, by contrast, acts like an adjunct, not agreeing with the verb and sometimes with a default case.

Because English is a relatively analytic language, there is limited marking of the nominative on the English subject, on pronouns in (1) but not on nouns, and there is, again limited, agreement between the subject and the finite verb, i.e. only in third person present tense.

(1) **She/the pangolin** see**s** him/a bat.

A more reliable criterion for subjecthood in English is the subject’s position before the finite auxiliary or verb (in an indicative sentence), as (1) also shows. This position is usually assumed to be the specifier of the TP but the exact label doesn’t matter so much. Its position relative to other parts of the sentence does matter, i.e. following C and preceding T. The subject is obligatorily present in finite sentences and assumed to be null in non-finite ones if it bears a semantic role (and then is designated as PRO). In languages that do not have overt subjects, there is again an underlying subject if it bears a semantic role (designated as pro).

Topics mark pragmatic information, i.e. previously mentioned, old information and are therefore definite. They can either be moved to or base generated in initial position. When moved, as in (2), they keep their original case and can only be extracted from governed positions, i.e. from the object and not from the subject position, as discussed in section 4.2.

(2) **Him**, I like <him>.

When base generated in the left periphery, topics are more free and can have a default case, as in (3), and be connected to all grammatical functions. These topics have a pronoun double in the main clause, as in (4), and can be preceded by *as for*, as in (5).

(3) **Me**, I don’t want to go.

(4) **That problem**, I hate it.

(5) **As for me, I**'m sort of partial to raspberry. (COCA Spoken 2011)

During the last 15 years or so, there have been many proposals for finer splits among topics. For instance, the terms contrastive topic, hanging topic, left dislocation, framing or frame-setting topic, aboutness topic, shifting topic, familiar topic, given topic, and continuing topic appear in the literature. Languages differ in how many of these topics they have. In what follows, the important distinction will be between either moved or base generated topics and whether the topic can represent only objects or all roles.

A theoretical point to consider is whether topics are adjoined to TP, as in (6a), (Baltin 1978; McCloskey 1991) or represented as specifiers of Top(ic)Ps in the CP-layer, as in (6b), (Rizzi 1997).

(6) a. TP b. TopP

ei ei

DP (topic) TP DP Top’

ei ei

DP (subject) T’ Top TP

Because there are languages with an overt Top(ic) head, I will assume the approach in (6b) for topics but there are ways to derive the same constraints on topicalization with adjunction (Grohmann 2003). In chapter 6, I will sketch how the same controversy about the correct analysis is relevant to adjuncts. There, I argue that both positions, adjunctions and specifiers, occur.

*2.2 The diachrony of subjects*

Having examined the difference between topics and subjects, I turn to how they change.

Shibatani (1991: 94) argues that “Philippine languages, on the one hand, show a transition from those languages in which a grammatical topic is not an obligatory clausal constituent … to those in which a topic has been grammaticalized to the extent that it has become an obligatory constituent of major clause types”. An indication that subjects were once topics is their wide range of argument types and their definiteness/referentiality. Lehmann (1976: 454) argues that early Proto-Indo European introduces person markings on verbs which is “an important step towards the prominence of subjects.” Real subjects are few in Vedic Sanskrit and topics are very loosely connected to predicates. This changes as subjects become obligatory in the later languages. Fischer et al (2019: 53) argue that the history of Romance shows a shift from topic-prominence to subject-oriented and, in chapter 5, I examine the change from a Verb-second to SV language, which has the same result of solidifying the subject position as the specifier of the TP.

In this section, I will look at synchronic stages that provide evidence for the change of a topic from the specifier of the TopP to a grammatical subject in the specifier of the TP, first in French and Brazilian Portuguese, then in Kimbundu and Lunda, and in Maltese. Finally, it has also been claimed that varieties of English change topics into subjects and subject pronouns into agreement. I haven’t been able to find evidence for the latter claims.

In chapter 2, I argued that French pronominal subjects, such as *j’(e)* `I’ in (7a), are reanalyzing as agreement affixes with a null subject, i.e. pro, in spoken varieties. What we also see is a new topic/subject appearing, *moi* in (7b). That is, of course, the renewal stage of the cycle.

(7) a. ***j****’ai froid.*  Colloquial French

1S.have cold

b. ***Moi*** *j’ai froid.*

me 1S.have cold

`I am cold.’

If French (7a) is analyzed as having a null subject, it is expected that *moi* in (7b), and *toi, il,* and other pronouns and noun phrases, will function as the subject as well. In what follows, I provide three pieces of evidence that these preverbal DPs are indeed subjects. First, they appear about as frequently as subject pronouns in pro-drop languages like Italian and Spanish. Second, their use is not topical and, third, they can be indefinite or quantificational.

The appearance or non-appearance of subject pronoun has generated a lot of discussion. It is generally assumed (Silvá-Corvalán 1994: 148; Toribio 2000; Travis 2007 to name but a few) that the overt pronoun in Spanish (and Italian) will appear when the subject is switched. Overt subject pronouns, such as in (7b), occur in 9-15% of Italian sentences (Valian 1991) and in 10% in Spoken Swiss French (Fonseca-Greber 2000: 401). In the *Corpus d’entretiens spontanés (CdES),* sentences like (7b) occur in French in 8.5% of first person singular subjects (239 out of 2818 *je/j’*) and in 13% of the first person singular subjects (187 out of 1424 *je/j’*) in the *Orléans Corpus*. Thus, this number is comparable to that in Italian and compatible with *moi* in (7b) already being a subject. In the cases without the *moi*, a pro could be present.

Second, it is necessary to consider the context, e.g. in (8). Talking about the small windows of an old house, the questioner A sets the topic to *vous* `you’ and therefore *moi* `me’[[3]](#footnote-3) is not a topic but a subject, indicated as such in the translation.

(8) *A: Alors* ***vous*** *avez alargi?* so 2 has enlarged

`So you have enlarged (them)?’

*B: Alors,* ***moi, j'ai*** *agrandi les fenêtres*

so me 1S.have enlarged the windows

`So, I have made the windows bigger.’ (CdES)

Fonseca-Greber (2000: 387-401) argues that the Swiss Spoken French variety has reached a null subject stage where overt subjects appear under conditions very similar to those in Italian and Spanish. For instance, the pragmatic constraints are alike and the percentages of full and null subjects are also similar, as mentioned above. Fonseca-Greber (p.c.) writes that the doubled topics have indeed become subjects.

Third, the definitive answer as to whether or not the earlier topic now functions as subject lies in the nature of the topic/subject. In many varieties of French, since the preverbal DP is indefinite and quantificational, this element has to be a subject because topics cannot be indefinite. Spoken, colloquial varieties show the DP as a generic, indefinite, or quantifier, as in (9) to (12). These cannot be topics and are therefore seen as having been reanalyzed as subjects, agreeing with the verb.

(9) *j’ai des doutes que* ***des gens i*** *vont aimer beaucoup* Swiss Spoken French

I have ART doubts that ART people 3S go love much

‘I doubt people are going to like it much’ (Fonseca-Greber 2000: 335)

(10) ***Chacun il*** *a sa manière de* Swiss Spoken French

Everyone 3S has his way of

`Everyone has their own way of …’ (Fonseca-Greber 2000: 338)

(11) ***Chaque femme*** *elle parle* Pied Noir French

Every woman 3SF talks

`Every woman talks.’ (Roberge 1990: 97)

(12) ***Un Cadien ça*** *travaillait pas.* Acadian French

An Acadian 3 works not

`An Acadien doesn’t work.’ (Girard 2010: 2010)

Once pronominal subjects, such as *je* in (7), have been reanalyzed as agreement markers, there are in principle three possible analyses for the definite DP that the language learner needs to decide on, namely as in Figure 4.1.

|  |
| --- |
| topic/subject DP  {DP, {pro T}} {DP, {~~DP~~ T}} {DP, T}  =topic =moved subject =subject |

Figure 4.1: From topic to subject in French

The leftmost merge represents a base generated topic, the one in the middle a moved topic, and the rightmost a subject. Determinacy rules out {DP, {~~DP~~ T}} and the other two remain possible as long as the DP is definite. Economy will choose {DP, T} over {DP, {pro T}} and this will enable sentences such as (9) to (12) with indefinite DPs. More on the actual analysis follows in section 2.3.

Additional evidence that topics are being reanalyzed as subjects is present in Brazilian Portuguese, where a full DP occurs with a pronominal element, as in (13). As argued by Quarezemin (2020), this DP is subject and not a topic because there can also be quantified DPs, as in (14), and then the DP is definitely not a topic but a subject.

(13) ***A Clarinha ela*** *cozinha que é uma maravilha.* Brazilian Portuguese

DEF Clarinha 3SF cooks that is a marvel

'Clarinha cooks very well.' (Duarte 2000: 28, cited in Quarezemin 2020: 109)

(14) ***Toda criança ela*** *aprende rápido a gostar de coca-cola.*

every child she learns fast the like of coke

‘Every child learns to like coke fast.’ (Costa, Duarte, and Silva 2006, cited in Quarezemin 2020: 109)

When material intervenes between the DP and the pronoun, as in (15), the latter agrees with the verb and the DP is forced to be in a more topic-like position.

(15) ***O EPA,***  *hoje em dia* ***eles*** *têm a preferência de mesclar.*

the EPA, today in day they have the preference of mix

'The EPA, nowadays, they prefer to mix.' (Souza 2007: 111)

Quarezemin (2020) argues that subject doublings occur `out of the blue’ and and therefore not likely discourse-linked topics. Because the DP in (14) is in a clear focus position, the pronoun cannot be the subject because doubling with focus doesn’t occur.

Turning to the Bantu languages, there is also evidence of a reanalysis from (object) topic to subject. Givón (2018: 155-6) argues that, as the topic *Nzua* reanalyzes from topic in (16) to subject in (17) in Kimbundu, the *a-* also reanalyzes from a subject agreement marker in (16) to a passive marker in (17), and –*mu* does so from object pronoun in (16) to subject agreement in (17).

(16) *Nzua, a-mu-mono* Kimbundu

John 3P-3S-saw

`John, they saw him.’ (Givón 2018: 156, data from Charles Uwimana)

(17) *Nzua a-mu-mono*  Kimbundu

John PASS-3S-saw

`John was seen.’ (Givón 2018: 156, data from Charles Uwimana)

The evidence that *a-* in (17) no longer indexes the object argument is that persons other than third are compatible with this prefix, e.g. *kwa meme* `by me’ in (18).

(18) *Nzua a-mu-mono kwa meme*  Kimbundu

John PASS-3S-saw by me

`John was seen by me.’ (Givón 2018: 156, data from Charles Uwimana)

The result is that a topicalized object is now the subject of a passive.

Schematically, this change can be represented, as in (19) or as in Figure 4.2, which shows the ambiguity of sentences like (16) and (17).

(19) TOPIC SU -O-V

↓ ↓ ↓

SU PASS -S-V

|  |
| --- |
| topic DP  {DP, {pro, {T, {v\*, <DP>}}}} {DP, {T, {v, {<DP>}}}}  =moved topic (transitive) =subject (intransitive) |

Figure 4.2: From topic to subject in Bantu

The structure on the left ({DP, {pro, {T, {v\*, <DP>}}}}) has a T and v\* with uninterpretable features whereas the structure on the right ({DP, {T, {v, {<DP>}}}}) has only one set of features to check, namely in T. It also lack a topic and is thus more economical.

In Lunda, a related Bantu language, the same reanalysis from topicalized object to passive subject occurs (Givón 2015). The dislocated topic appears in (20), the ambiguous topic/subject in (21), and the reanalyzed subject in (22).

(20) *Mari, Joni w-a-mu-mona*  Lunda

Mary John 3S-PST-3S/O-see

`Mary, John saw her.’

(21) *Mari a-a-mu-mona*

Mary ?-PST-?-see

`Mary, they saw her’ or `Mary, she was seen.’

(22) *Mary a-a-mu-mona kudi-Joni*

Mary PASS-PST-3-see DAT-John

Mary was seen by John.’ (all from Givón 2015: 357 with glosses adapted)

So, Bantu languages participate in two types of cyclical change, from subject marker to voice marker (cf. Maddox 2019 for Romance and chapter 2) and from topic to subject.

In Maltese, a former topic has also been reanalyzed as a subject. Comrie (1989: 220-24) shows that the preposition *għand* `at’ is used in locatives such as (23) and is head-marked for the possessor (masculine –*u* and feminine –*a*). The marking on the preposition is the same as that on the inflected verb and that’s the reason the preposition can come to be seen as a verb in (24).

(23) *Il-ktieb kien* ***għand-u***Maltese

the-book was at-3M

`The book was at his house.’ (Comrie 1989: 220)

(24) *Pawlu* ***għand-u*** *ktieb* Maltese

Pawlu have-3M book

`Pawlu has a book.’ (Comrie 1989: 221)

The reanalysis to (24) is from a possessor in topic position, as in (25a), to one where the topic is a subject, as in (25b).

(25) a. Pawlu, ktieb għand-u

TOPIC SUBJECT LOCATION-possessor

↓ ↓ ↓

b. SUBJECT OBJECT VERB-agreement

In the possessive construction, *għand* is a verb because it can have the negative brace around it, as in (26). In the locational, prepositional use, the negative has to be placed before the preposition, as in (27).

(26) *Pawlu* ***m’-għand-u-x*** *ktieb*

Paul NEG-have-3M-NEG book

`Paul doesn’t have a book.’ (Comrie 1989: 222)

(27) *Il-ktieb* ***ma kien-x*** *għand-u*

ART-book NEG be-NEG at-3M

`The book isn’t at his house.’ (Comrie 1989: 221)

Comrie characterizes the development from Proto-Arabic to Maltese as follows “in the possessive construction, subject properties have been transferred diachronically from the possessed noun phrase to the possessor” (1989: 224).

The last example of a topic to subject reanalysis is one that is incipient in a number of varieties of English but doesn’t seem to be successful. A number of researchers have noticed that English nominative pronouns are not modifiable and are frequently adjacent to the verb (van Gelderen 2004: 23-5). This seems an incipient stage of grammaticalization of a pronoun to an agreement marker and stages of pronouns doubling have been noticed in, for instance, the early Modern English period by Knorrek (1938: 46-49), as in (28) to (30).

(28) The old woman **she** was drunk (Pepys, 9.3.1659)

(29) My father **he** went to look after things at the carrier’s (Pepys, 25.2.1659)

(30) Ignorance **he** came hobbling after (Bunyan 243).

Givón (1976: 155-6) argues that, in addition to a change from pronoun into agreement marking, certain varieties of English are changing topics into subjects. His examples are as in (31).

(31) *Mai brada* ***him*** *no skeed*  Hawaiian Pidgin English

my brother 3S not scared

`My brother is not scared.’ (Givón 1976: 156)

However, checking some Hawaiian Pidgin English texts, I find that the subject pronoun in (31) is not obligatory with overt DPs, so the pronoun has not yet been reanalyzed as agreement in e.g. (32).

(32) *Den God say, “I like light fo shine!” an da light start fo shine.**God see how good da light.*

`Then God said, `I want the light to shine’ and the light started to shine and God saw it was good.’ (<http://www.pidginbible.org/Concindex.html>)

The *Atlas of Pidgin and Creole Language Structures* (map 62, Haspelmath et al 2013) confirms this for other (English-based) creoles ans only mentions overt or null pronouns but not doubling environments and *The Electronic World Atlas of Varieties of English* (Kortmann et al 2013) mentions null subjects but not doubling.

For Colloquial English, as evidenced in COCA and Google Advanced Search, doublings also continue to be rare and none appear with an indefinite topic/subject, such as (33), as do in Colloquial French.

(33) %A brother he’s not scared.

If reanalyzed as subjects, all kinds of DPs should be possible.

Concluding this section, we saw that French, Brazilian Portuguese, Kimbundu, Lunda, and Maltese show topics reanalyzing as subjects. For French, the evidence I provided was the most detailed and the most important is the fact that the DP can be indefinite. This is also true in Brazilian Portuguese. In Kimbundu and Lunda, the situation is more complex because the subject agreement marker changes to a passive and the object pronoun to a subject agreement marker. The Maltese preposition *għand* shows evidence of being verbal, agreeing with a subject that was at some point a topic. Evidence for a topic to subject switch cannot be found in varieties of English although there are stages where such a change seems incipient.

*2.3 The reanalysis from topic to subject*

Having provided some examples of changes from topic to subject, I’ll now look into the reason and mechanisms.

Topic incorporation has been regarded by Givón (1979) as a shift from the pragmatic to the syntactic. Givón (2018: 154-5) provides processing speed and accuracy as reasons behing the reanalysis. These external factors are formulated in a very general manner but can be seen as third factor in nature. In keeping with what has been argued in chapter 1, I will look at the change in terms of determinacy and labeling, which, of course, involve computational efficiency as well but are more precise formulations thereof.

A derivation of the stage that has a DP subject is given in (34), ignoring the lower part of the clause. It is a completely determinate structure up to the point in (34a). Moving the DP into the CP domain above it to the specifier of the TopP, as in (34b), would violate determinacy because the specifier of the TP and that of the v\*P are in the input.

(34) a. {DP {T {<DP> {v\* …}}}}

b. {DP {C { **<DP> {T {<DP>** {v\* …}}}}}}

When there is a DP topic and null subject, the derivation will look like (35a) but the output will be ambiguous between (35a), (35b), and (35c), as also shown in Figure 4.1.

(35) a. {DP {C { pro {T {<DP> {v\* …}}}}}}

b. {DP {C { <DP> {T {<DP> {v\* …}}}}}}

c. {DP {T { <DP> {v\* …}}}}

The Principle of Determinacy will rule out (b) and Economy will select (c) over (a). I argue this is the reason that French earlier topics are now subjects in certain spoken French varieties. In Brazilian Portuguese and Maltese, the earlier topics are reanalyzing as subjects as well. The situation in Bantu is more complicated. There are a few changes going on: the verbal morphology loses object marking and the object affix is reanalyzed as subject. The topic DP is then also reanalyzed from object to subject and subsequently as subject.

The change from topic to subject also has repercussions for labeling, as represented in Figure 4.3. Labeling of a topic results in an {XP, YP} structure without a clear label. There are no features to be shared in (a). In (b), the {XP, YP} structure can be labeled through feature sharing of phi. Labeling pressures therefore also favor the reanalysis of the topic to the subject.

|  |
| --- |
| a. ?P b. <phi,phi>  ei ei  DP ?P DP T’  ei ei  Top … T ..  labeling mechanism not understood labeling after feature-sharing |

Figure 4.3: From topic to subject in terms of labeling

In this section, I have examined the renewal of the subject to a topic and have suggested that, when an ambiguity arises, determinacy, economy, and labeling favor a subject over a topic. This choice is selected by the language learner once the data are ambiguous. Topics may be reintroduced for pragmatic reasons, as mentioned in chapter 1.

**3 Changes involving copulas**

Reanalysis of demonstrative subjects as copulas is from phrase to head. Unlike the other cases of change from specifier to head discussed in chapter 2, the reason for the change discussed here is a difficulty with indeterminate structures. As the subject is reanalyzed as a copula, the erstwhile topic is internalized as a subject. The two changes are schematized in (36).

(36) The pangolin that happy

TOPIC SU AP

↓ ↓

SU copula AP

The change of the topic to the subject depends on the change of the subject to a copula and they will be discussed in secrtions 3.1 and 3.2, respectively.

*3.1 From subject to copula*

A change from a demonstrative subject to a copula verb is widely attested in Semitic, Egyptian, various creole languages, Iranian, Slavic, Tibeto-Burman, Swahili, Indonesian, Zoque, Passamaquoddy, Maya, and Chinese (cf. Li and Thompson 1977, Katz 1996, Diessel 1999, Pustet 2003, van Gelderen 2015b). An example from Egyptian is given in (37) where *pw* is a masculine singular proximal demonstrative in (37a) which is reanalyzed as (non-agreeing) copula in (37b).

(37) a. *rmt* ***pw*** Old Egyptian

man MSG.PROX

`This man’ or `this is a man’.

b. *tmj-t* ***pw*** *jmn-t* Middle Egyptian

city-F be west-F

`The West is a city.’ (Loprieno 1995: 68; 2001)

As has been argued by many, e.g. Eid (1983) and Alsaeedi (2015), other examples of a demonstrative reanalyzing as a copula involve Arabic, where *huwa* in (38) is ambiguous between a subject demonstrative or a copula but where (39) no longer is because *huwwa* cannot be anaphoric to the DP *`ana*.

(38) *allahu* ***huwa*** *'lhayyu*  Modern Standard Arabic

God he the-living

‘God is the living.’ (Benveniste 1966 [1971: 165])

(39) *`ana* ***huwwa*** *l-mas’u:l* Egyptian Arabic

I he the-responsible

‘I am the responsible.’ (Edwards 2006: 51)

Edwards (2006) provides sentences where the pronoun functions as a copula from Egyptian Arabic but, according the Mohammed Al-Rashed (p.c), they are grammatical in Modern Standard Arabic as well. The new copula can only be used in equative/identificational sentences, a typical specialization of copulas, and has restricted agreement, only gender and number. With negatives, its position is that of verbs, as in (40).

(40) *faTma* ***ma-hiyya:-∫*** *il-mas’u:la*  Egyptian Arabic

Fatima NEG-Pron(3SF)-NEG the-responsible

`Fatima is not the one responsible.’ (Edwards 2006: 57)

Edwards (2006: 57) argues it is both a pronominal and a copula, situated in little v where I will assume it is a Pred head.

Biblical and Modern Hebrew show the same reanalysis, according to Wilson (2018). The pronominal copula *hûʾ* in (41) cannot be a demonstrative subject anaphoric to the topic because the person features are different from the original demonstrative: ***hûʾ***is masculine singular.

(41) *ʾattâ* ***hûʾ*** *hā-ʾĕlōhîm ləḇaddəḵā* Biblical Hebrew

2MS COP ART-god alone.2MS

`You (are) God, you alone.’ (Wilson 2018: 146)

Modern Hebrew shows agreement in person and gender, in e.g. (42), but that makes *zot* ambiguous between pronoun and inflected copula.

(42) *ha-báyit shelHa* ***zot*** *dugma tova* Modern Hebrew

ART-house.MS 2S FS example.FS good

`Your house is a good example.’ (Diessel 1999: 146, after Glinert 1989: 189)

What makes this earlier demonstrative a copula – and the topic a subject – is that Modern Hebrew shows semantic differences, as in (43) and (44), typical for copulas. In (43), the (feminine) *hi* is required and the interpretation of the sentence is individual-level (IL); in (44), the (plural masculine) *hem* is optional but, with it, it has an IL reading and without it a stage-level (SL) one. This semantic difference is typical for a copula, e.g. in Spanish.

(43) *tel aviv hi be-yisrael*  IL Modern Hebrew

Tel Aviv COP.3FS in Israel

`Tel Aviv is in Israel.’ (Rothstein 2001:233, from Wilson 2018: 148).

(44) *ha - samaim (hem) kxolim* IL or SL Modern Hebrew

ART-sky COP.3PM blue

`The sky is blue.’ (Wilson 2018: 148)

In addition, as Faltz (1973) notes, the intonation typical for (43) and (44) is “suitable for a single, simple clause”.

What is the cause of this reanalysis from demonstrative subject to copula? In (45), a derivation is given of a DP with its predicate. First, the DP and AP merge, as in (45a), which results in a labeling paradox. This is resolved after the Pred head is merged in (45b) and the DP moves internally in (45c). This, however, results in another unlabelable phrase. To resolve this, T would have to be merged to what can be seen in (45c) and the DP would have to undergo internal merge again, as in (45d). However, stage (45d) is ruled out because of indeterminacy.

(45) a. {DP, AP} EM: unlabelable result

b. {Pred, {DP, AP}} Merge of copula

c. {DP, {Pred, {<DP>, AP}}} IM of DP: unlabelable result

d. {DP, {T, {**<DP>, {Pred, {<DP>,** AP}}}}} Merge of T and IM of DP: indeterminate

Because Pred is not a phase head, the lower {<DP>, AP} is not transferred to the interface and the move to the specifier of the TP will be indeterminate. This is why a reanalysis of a DP as Pred head takes place, as shown in Figure 4.4. Labeling is simpler in (b) as well, although a pro subject or topic will need to be renewed, as argued in section 3.2.

|  |
| --- |
| a. ?P > b. PredP  ei ei  DP PredP Pred AP  ei  Pred AP |

Figure 4.4: Reanalysis of a DP demonstrative to copula

After the reanalysis, the derivation is as in (46), with the internal merge in (46c) determinate.

(46) a. {D = Pred, AP} External Merge

b. {pro, {D = Pred, AP}} Merge of the pro subject, unlabelable

c. {pro, {T, {<pro>, {D = Pred, AP}}}} Merge of T and Internal Merge of DP

The result in (46c) is also labelable through phi-sharing of the features of the DP and of T.

The change from phrase to head (pronoun to copula) in this section is due to the avoidance of a determinacy violation: (45d) is indeterminate but (46c) is not. We have seen, in chapter 2, that most changes from phrase to head are due to labeling violations.

*3.2 From topic to subject*

In (46), there is an optional topic and, as the demonstrative subject is reanalyzed as a copula, topics can be incorporated as subjects. This change is similar to that discussed in section 2 of this chapter but, since the derivation may lack a T with equative copulas, I discuss it separately.

When a topic is reanalyzed as a subject, the latter can be indefinite and quantificational, as well as definite, of course. However, there are languages, e.g. Arabic, that bar real indefinites from subject position, as in (47) from Standard Arabic. This may be due to the fact that a full DP is needed in subject position (Halila 1992). Moroccan Arabic, for instance, has a D and allows indefinite subjects, as in (48).

(47) \****walad-un*** *ža:Ɂa* Standard Arabic

boy-NOM come.3MS

`A boy came.’ (Halila 1992: 60)

(48) ***Ɂši****-wlad ža:*  Moroccan Arabic

a-boy came

`A boy came.’ (Halila 1992: 162)

Others have argued that the `subject’ is really topicalized, as in Soltan (2007: 68), and Berman (1978: 192) gives similar examples for Modern Hebrew, which may mean that, even though the demonstrative subject of the previous section is a copula, the topic isn’t subject (yet). To avoid this controversy, I will therefore look at another language.

McWhorter (1997: 97) argues that early Saramaccan has a zero copula and the demonstrative subject pronouns *da* ‘that’ and *dɛ*`there’ are reanalyzed as copulas in current Saramaccan. He also argues that, earlier, *mi* and *hεn* in (49) and (50) are in topic position but that they now are now in subject position, schematized as (51).

(49) a. *Mi* ***da*** *i tatá* Saramaccan

I COP your father

‘I am your father.’ (McWhorter 1997: 87)

b. *Hεn* ***dà***  *dí Gaamá*

he COP the chief

‘He's the chief.’ (McWhorter 1997: 98)

(50) *Mi* ***dε*** *a páu dēndu* Saramaccan

I COP LOC tree inside

‘I am in the tree.’ (McWhorter 2005: 170)

(51) TP [hεn T PredP[<hεn> dà dí Gaamá]]

If *da* is a copula and *hεn* a topic, there would have to be a null subject. Although null subjects are not typical for creoles (Haspelmath 2013, map 62), they are used with weather-predicates. Avoidance of null subjects might pressure *mi* and *hεn* into subjects in (49) and (50).

Veenstra (2014) argues against McWhorter’s analysis of *da* as a copula verb because it doesn’t combine with TMA markers, as (52) shows, unlike the other Saramaccan copula *dɛ,* as in (53).

(52) *\*Etnel* ***ɓi/o ɗa*** *malenge-ma* Saramaccan

Etnel PST/IRR COP lazy-MA

‘Etnel was/will be a lazy cat.’

(53) *Etnel* ***ɓi/o ɗɛ***  *wan malenge-ma.*  Saramaccan

Etnel PST/IRR COP one lazy-MA

‘Etnel was/will be a lazy cat.’ (both from Veenstra 2014)

The reason for this, however, could be that copulas specialize for a certain meaning, and *da* would be incompatible with TMA marking and not include it in the structure. In fact, *dε* is used for class equatives and locatives and *da* for identificational function, so TMA is compatible with one but not with the other.

Another argument that Veenstra brings up is that, in sentences with *ɗa*, only a strong pronoun can be the subject, as in (54). In sentences with *ɗɛ*, the subject can be strong or weak in (55).

(54) ***\*A/hɛn ɗa*** *wan ɓunu sondi* Saramaccan

3S COP one good thing

‘That is a good thing.’

(55) ***A/hɛn ɗɛ*** *wan ɓunu sondi*  Saramaccan

3S COP one good thing

‘It is a good thing.’ (both from Veenstra 2014)

This points to *hɛn* (still) being a topic with the copula *da* and the weak pronoun *a* not licensed by T because, in the case of equationals, T is lacking, as in (56). This means there is a null subject.

(56) TOPIC <pro> Pred DP

*hɛn* pro *ɗa* DP

With *dɛ,* T is present because that is a stage-level copula and *dɛ* may move to it licensing *a* as the subject in (57). *Hɛn* is also possible.

(57) SU T DP copula AP

*hɛn/a ɗɛ* <hɛn> <ɗɛ> AP

The reason behind the reanalysis of *ɗɛ* from DP to copula in Saramaccan is the same as that in Egyptian, Arabic, and Hebrew, outlined in section 3.1 for (39d), namely indeterminacy of the DP in the input. The motive for the topic in Saramaccan to be reanalyzed as subject is that too: for a topic to be derived, the DP would be present in the small clause, the specifier of the TP, and the specifier of the TopP, violating determinacy, as (58) shows.

(58) {DP, {T, {<DP>, {Pred, {<DP>, AP}}}}}

The reason for the topic of the copula *ɗa* not to reanalyze is because T is not present, as (59) shows.

(59) {DP, {Pred, {<DP>, AP}}}}}

Determinacy forces a repositioning of the copula, as in (60). A pronominal reanalyzes as a copula but then another (null) DP becomes the subject.

(60) a. PredP > b. PredP

ei ei

(Pred) SC XP Pred’

ei ei

XP YP Pred YP

This means that initially the copula is structurally outside the XP YP predicate, represented in (60a). This has been argued by e.g. Stowell (1978) and Moro (1995). Others, e.g. Bowers (1993), Mikkelsen (2005) and Shlonsky and Rizzi (2019), have argued that copulas have a structure as in (60b). In fact, the two types of analyses correspond to two stages. A third stage could be one where the copula is lost, resulting in (60a), and then the cycle starts over.

A final observation about this cycle is that it often starts with a demonstrative pronoun that reanalyzes as a copula. The reason for this is that copulas need to express location and identity and that’s why demonstratives are ideal candidates.

In section 3, I have presented examples of pronominal subjects changing into copulas and topics into subjects. Accounts for these have been given in terms of determinacy. The two most frequent structures for these in (60ab) correspond to two stages: (60a) is pre-reanalysis and (60b) post-reanalysis.

**4 Determinacy of head-movement**

Most work on determinacy has involved *wh-*movement and not head-movement. If a head functions in two roles in the same phase, determinacy should prevent further movement. English auxiliaries provide a good test-case for head-movement: they are base generated as ASP or M and move to T and then to C in questions. In this section, I will show that the auxiliary can skip T, in a similar way to what will be argued for Dutch and German in chapter 5. The reason behind this is to arrive at a determinate derivation.

In 4.1, I start with a discussion of where head-movement takes place, during the course of a derivation or at the time of spell-out, a point raised in chapter 1, and I settle on the former. Then, in 4.2, I show that there is movement of the auxiliary from a lower head to T (and C) and that this seems to result from an indeterminate structure. In 4.3, I offer some ways to avoid determinacy violations, i.e. by skipping T. The evidence for this skipping comes from double modal varieties. In 4.4, I offer an explanation in terms of determinacy for why verbs grammaticalize into (higher) auxiliaries.

*4.1 Where is head-movement?*

An unresolved question is whether head-movement takes place in the syntax or at spell-out, as Chomsky (1995) suggests. If the V moves to T and C after the derivation splits up into a phonological and semantic component, i.e. if it moves just before spell-out, one would not expect any semantic effects. I will show some evidence that there are such effects and that head-movement is therefore in the syntax. The evidence comes from the licensing of negative polarity items in head-final languages, such as Turkish, Korean, and Japanese.

As is well-known, negative polarity items (NPIs) need to occur in a special environment, which Giannikidou (1997) calls anti-veridical. One of these environments is being in a position that is c-commanded by a negative. In the grammatical (61a), *n’t* c-commands *anyone* because the NegP is higher than the object; in the ungrammatical (61b), there is no negative to c-command the NPI; and in the likewise ungrammatical (61c), there is a negative but it doesn’t c-command the NPI.

(61) a. I did**n’t** see **anyone**.

b. \*I saw **anyone**.

c. \***Anyone** didn’t see.

The data in (61) show that, in English, the negative is base generated in a position higher than the object and lower than the subject. If the negative moves to C, as in (62), the NPI is licensed but it not clear if that’s because of the negative or because of the question, which also provides a non-veridical environment.

(62) Did**n’t anyone** notice that?

To control for that inconclusivity, we need to look at a language where the negated verb moves to a higher position in a declarative clause and Turkish and Korean are candidates.

In Turkish, NPIs provide evidence that verb-movement must happen before the sentence is interpreted, i.e. before it is externalized. In (63) with a tree as in (64), the verb moves to Neg and then to T/C and this movement licenses the NPI *kimse* `anybody’. If the verb stayed in the VP and only moved just before spell-out, (63) would be ungrammatical.

(63) ***Kimse*** *gel-****me****-di.* Turkish

anybody come-NEG-PST

`Anybody didn’t come/Nobody came.’ (Kural 1993: 84)

(64) CP

qp

TP = <phi, phi> C

ei

DP TP

Kimse ei

NegP T

ei di

VP Neg

ei me

<DP> V

gel

The licensing of NPIs in Japanese and Korean is hotly debated (see e.g. Nakao and Obata 2007 for a review). As in Turkish, the NPI can appear in the subject position and the negative verb can be argued to be c-commanding that position, as in (65) from Japanese, with a tree in (66).

(65) ***Daremo*** *Mary-o mi-****nakat****-ta.* Japanese

Anybody Mary-Acc see-not-Past

`Anybody didn’t see/Nobody saw.’ (Nakao and Obata 2007: 103)

(66) CP

qp

TP = <phi, phi> C

ei

DP TP

Daremo ei

NegP T

ei ta

VP Neg

ei nakat

<DP> V

mi

This licensing of subject NPIs provides evidence for verb movement before the C-I interface. I now turn to English auxiliary movement where such evidence isn’t forthcoming but where I nevertheless assume that head movement is syntactic.

*4.2 English auxiliaries*

Since Cinque (1999), auxiliaries and TMA-adverbs are seen as occupying the heads and specifiers, respectively, of functional categories. That means they are set-merged (see chapter 1). A structure with a perfect auxiliary and adverb is given in (67), a sentence from COCA.

(67) <phi, phi>

ei

DP TP

4 ei

*The exodus* T AntP = <ant, ant>

[u-phi] ei

AP AntP

*already* ei

[ant] Ant VP

*has started*

[u-asp: ant] [i-ant]

The auxiliary *has* has uninterpretable aspect features which it checks with the past participle (see van Gelderen 2016 for this checking); the adverb has semantically compatible aspect features.

In order to achieve labeling in (67), the features of the TMA head and specifier are shared (see also Cinque 1999). This is different from Chomsky (2019), who assumes that all functional heads are pair-merged, as in (68), where the merged head determines the category, so v to T movement results not in a T but in a verb.

(68) vP

ei

v vP

ei ru

v T <v> …

The structure in (68) doesn’t violate the EC, as mentioned in chapter 1, because the merger occurs in the lexicon. However, (68) gives operations in the lexicon a lot of power and make a derivation less transparent. I will therefore continue to use (67). For the movement of the modal and aspect auxiliaries to T, I will argue that the EC is not violated because the features are matched, as in (69), and T and ASP are not distinct.

(69) TP

qp

T ASPP

ei ei

*has* T ASP …

[i-pr] [~~u-T: pr~~] <has>

[i-pr]

Using explicit TMA heads, it can be shown that the highest auxiliary optionally moves to T, as in (70), because it precedes its specifier.

(70) <phi, phi>

ei

DP TP

4 ei

*Obi* T <ant, ant>

*has* ei

*already*  AntP

[ant] ei

Ant VP

<has> *seen a difference* (COCA)

[u-asp: ant]

Auxiliaries must move to T when a negative appears in (71) and to C in questions, where they display Subject Auxiliary Inversion (SAI) in (72).

(71) He **couldn’t** listen.

(72) a. **Have** you called yet?

b. What **might** it mean?

Perfect, progressive, and passive auxiliaries appear in that order above the vP. Modal auxiliaries appear in different positions depending on their meaning. They can be divided into epistemic, deontic, and dynamic, with the latter two often refered to as root modals. The epistemic ones have been regarded as raising verbs and the root ones as verbs with control complements (along the lines of Ross 1969). There are a number of models to represent high and low modals, Cinque (1999), Ernst (2002), Butler (2003), Hacquard (2010) and I present a synopsis in (73). In standard English, only one modal can be present, so either the top one is or the lower one.

(73) <phi, phi>

ei

DP TP

*They* ei

T MP

ei

Mepis ASPP

*might(a)* ei

ASP MP

*have* ei

Mroot v\*P

(*can*) 4

*swum/swim*

Dynamic modals are the most verb like, i.e. the lowest in the structure, and I leave in the middle whether they are in the VP/v\*P or in a low M, as in (38).

In standard varieties of English with single modals, a tree for a modal is one in which the (low possibility) modal moves from M to (NegP) to T, which is shown in negative sentences, as in (74a). In the case of a question, the modal moves to C, as in (74b).

(74) a. <phi, phi> b. CP (=Q, Q)

ei ei

DP TP DP CP

*She* ei *What* ei

T NegP C <phi, phi>

*couldn’t* ei *could* ei

Neg MP *she* TP

<couldn’t> ei ei

M VP T MP

<could> V <could> ei

*listen* M VP

<could> V

*hear*

Movement to T is optional, as (75) and (76) show: in (75a) and (76a), the modal moves across the adverb where it doesn’t in (75b) and (76b).

(75) a. I **could probably** help you market your app. (COCA spoken 2017)

b. I **probably could** have been dead that night. (COCA spoken 2015)

(76) a. the only way that he **could possibly** guarantee that his son avoided jail time

(COCA spoken 2017)

b. So we **possibly could** be looking at not guilty by reason of insanity (COCA spoken 2017)

A tree for (75a) appears as (77) and for (76b) as (78). In (75) and (76), the modal is *could*, which is deontic (i.e. low) or epistemic (and then relatively high) but this is not determining the movement.

(77) <phi, phi>

ei

DP TP

*I* ei

T MprobP (= <mod, mod>)

ei

AP MP

*probably* ei

(M) MpossP (= <mod, mod>)

ei

(AP) MP

ei

M VP

*could* 4

*help you market your app*

(78) <phi, phi>

ei

DP TP

*we* ei

T MpossP (= <mod, mod>)

ei

AP MP

*possibly*  ei

M VP

*could* 4

*be looking …*

In short, English auxiliary are base generated below T and their movement to T is optional, unless they support negatives or questions. Movement from T to C will be shown to be problematic from a determinacy point of view and I will therefore argue the T can be skipped.

*4.3 Indeterminacy and a resolution*

I first show that determinacy may be a problem for the movement of the auxiliary to C. Then, I provide two pieces of evidence that the T can be skipped avoiding the problem.

Let’s examine the deontic modal *could*, which starts in a low M and moves to T in (75a), repeated as (79). Since deontic modals generally do not appear with other TMA auxiliaries, this merge will be relatively simple, represented in (80), ignoring the stage up to v\*P.

(79) I could probably help you market your app.

(80) a. Merge {could, v\*P} EM of modal in M

b. Merge {could, {<could>, v\*P}} IM of modal to T

c. Merge {DP, TP} IM of subject

d. Merge {C, TP} EM of C

e. Transfer phi C>T so as to label TP as <phi, phi>

f. Transfer complement of C

In (80), the derivation for (75a) is shown; moving to C will be a problem because, in (80b), there are two copies of *could* in the workspace, one in MP and one in TP. The workspace for that stage is given in (81).

(81) WS = [{could, {MP }} could, … ]

The modal that moves to C cannot first merge in T, as in (80b), but moves directly from M to C, as in (82), which picks up from (80a).

(82) Merge {could, {<could>, v\*P}} IM of modal in C

Evidence of this skipping of T (or M) can be seen in double modal varieties, as in (83), where the second modal in (83b) skips over the first in an interrogative. Because C is the phase head with phi-features and, in some accounts, tense, skipping T will not be a problem.

(83) a. You **might could** go to the store for me.

b. **Could** you **might** go to the store for me. (Hasty 2012: 124; see also Coleman 1975: 205 and Di Paolo 1989)

The judgment in (83) is confirmed by Lexy Gilbert (p.c.), who also accepts the `might you could’ order, which could still skip T. Interrogatives, however, are rare in double modal varieties (Mufwene 1994; Bour 2014).

Along with what has been argued in chapter 3 and what I will argue in chapter 5, there is previous work that conflates C and T in one way or another (Platzack 1983; van Gelderen 1993) or skips one (Legate 2014: Erlewine 2014). One could argue that there is no T inheriting C’s features but that C checks the features and sends its complement off to Transfer. Similarly, modals, when they move to C, will not be first be able to move to T.

The move of an auxiliary to the NEG head, as in (74a), seems similarly indeterminate. One could argue that NEG is a phase head but that remains to be determined. If it is a phase head, it will send the MP, with one of the copies, to Transfer and there will not be a determinacy violation moving to T. Alternatively, it could be that the modal and negative are not the same as just the modal and therefore the move to T is not indeterminate; the move to C would be, however, and T would need to be skipped.

Additional evidence for the skipping of the T head comes from *that*-trace sequences that are grammatical with subjunctives, as in (84).

(84) a. I suggested that you should go to the store.

b. Who did you suggest that \_\_ should go to the store?

This shows that, when there is a modal, as in (84), the modal need not move to T and the specifier of the TP is not there either, or else there would be a *that*-trace violation.

The native speaker judgments of (84) are confirmed by a corpus search, as (85) and (86) show.

(85) they would get with the professionals and say, what do you suggest that \_\_ **would** be supporting her? (COCA – CNN 2007)

(86) What is it that you suggest that \_\_ **would** change, slowly change the climate ...

(COCA – CBS 1994)

The *wh-*element need not move to the specifier of the TP because the subjunctive modal need not move to T.

Sections 4.2 and 4.3 have examined auxiliary-movement to T synchronically. Because the auxiliary originates in a position below T (shown by its optional movement around an adverb), its movement to T will be problematic for subsequent movement to C. A way to avoid this situation is to skip T and I have provided two pieces of evidence for such a skip. I’ll now discuss a diachronic perspective.

*4.4 A Diachronic Perspective*

As is well-known from the literature on grammaticalization (e.g. Heine and Kuteva 2002; Traugott and König 1991), auxiliaries originate as full verbs. The core modals in English originate in verbs of motion, ability, volition, and intention that `invite’ certain inferences of futurity and possibility (e.g. Traugott 1972). The core modals, i.e. *may, might, will, would, can, could, shall, should,* and *must,* have changed from verbs with dynamic modality to deontic and epistemic auxiliaries. All stages are already present in Old English, verbal *cunnan* `know’ and *wille* `want’ in (87), deontic *motan* `be allowed to’ in (88), and epistemic *mihte* `might’ in (3), all taken from the DOE Corpus.

(87) *Ic sceal hraðe* ***cunnan*** *hwæt ðu us to duguðum gedon* ***wille****.*

I must swiftly know what 2S us to benefit do want

`I must know quickly what you want to do to benefit us.’ (DOE, Andreas 341, Vercelli Book)

(88) *No þe laðes ma þurh daroða gedrep gedon* ***motan****.*

Not 2S harm more through spear stroke do may

`No more injury will they be allowed to do to you through the stroke of darts.’ (DOE, Andreas 1443, Vercelli Book)

(89) *Þis* ***mihte*** *beon geseald to myclum wurþe & þearfum gedæled*.

this might be sold for many worth and poor given

`This might have been sold for much and given to the poor.’ (DOE, Corpus Christi MS, Matthew 26.9)

Once a verb has another verb in its complement, an ambiguous situation arises, and the structure can be reanalyzed with fewer features, e.g. the volition and future features of *will* are reduced to only future. This change is driven by Feature Economy, a second factor principle (cf. the discussion in chapter 1), but can be seen in terms of determinacy as well.

The difference between a verb and an auxiliary lies in having an argument structure connected to it and not having one, respectively. Verbs like *cunnan* and *willan* in (87)each have two arguments where the auxiliary *will* in (90), derived from the lexical verb *willan,* has none.

(90) I **will** have done my best. (COCA 2016 spoken)

As a verb becomes multi-functional and starts to check features in two places, e.g. volition and uncertainty, as in (91) for the modal *will*, that verb becomes more likely to be base generated higher.

(91) TP

ei

T MepistemicP

ei

Mepistemic v\*P

*will* ei

DP v\*’

ei Transfer of VP

v\* VP

<will> 4

[volition] V gedon

<will> `do’

The lexical verb *will* in (87) has an Agent and Theme theta-roles, due to its semantic feature of [volition]. Because [volition] `invites’ [uncertainty] and [future], the verb can be used that way by moving to these functional positions. The change from main verb to auxiliary verb can be explained in terms of determinacy because, in (91), movement to T would be indeterminate. As we’ve seen in chapter 3 and will see in chapter 5, some languages have less evidence for a separate T(P). Once the TP is introduced, it would force the reanalysis of the v\* as M.

In conclusion to section 4, I have shown that auxiliary movement may result in indeterminate structures. Violations are avoided, e.g. by not moving to the T position, as argued in section 4.3, or by grammaticalizing into higher positions, as argued in section 4.4.

**5 Quantifier Float**

In this section, I first examine cases in Modern English where QPs move to more positions than just the specifier of TP and see what, if any, the consequences for determinacy are. I then examine what is known about quantifier float in older stages of English. This section finds that there is no evidence from quantifier float that determinacy is violated. It also shows that the impossibility of quantifier float in the specifier of the v\*P hasn’t changed in the history of English, and that this is to be expected; two (other) changes did occur but are not relevant to third factor principles.

*5.1 Modern English Quantifier Float*

Sportiche (1988) argues that quantifier float leaves evidence in the shape of a stranded quantifier in a position the quantified DP occupied before a later merge. If a DP, on its way to the specifier of the TP, is merged in various specifiers of auxiliary heads, this will result in an indeterminate set of copies. Quantifier float therefore provides a different way of examining determinacy (and labeling) in sentences with auxiliaries.

Quantifier float shows some speaker variation. However, most speakers[[4]](#footnote-4) are comfortable with the quantifier in positions 1 and 2 but not in 3 and 4 in (92) and (93).

(92) The elephants may all1 have all2 been all3 painting flowers.

(93) The flowers may all1 have all2 been all 3 being all4 planted.

These speaker intuitions are confirmed by COCA. The quantifier occurs frequently after the modal in T (or M), as in (94) to (97). In (94), the quantifier is in the specifier position of the MP (with the modal in T). In (95), it could be in the specifier of the progressive ASPP or in the specifier of the MP. In (96), it could be in the specifier of the PfP or the MP and, in (97), it could be in the specifier of the PassP (or vP) or the specifier of the MP.

(94) And he was hoping we could **all** spread the message (COCA spoken 2017)

(95) they could **all** be celebrating this weekend (COCA spoken 2017)

(96) it might have been better if somehow it could **all** have been kept quiet? (COCA spoken 2003)

(97) they could **all** be executed for it. (COCA fiction 2017)

It also occurs after a modal and the perfect in (98) and before a passive or progressive auxiliary, as in (99) and (100), and before the simple progressive and passive, as in (101) and (102).

(98) in that moment we could have **all** come together. (COCA spoken 2017)

(99) how easily it could have **all** been prevented (COCA spoken 2011)

(100) Can you imagine if we would have **all** been sitting there and listening (COCA spoken 2012)

(101) we were **all** talking about Scott Walker as someone who (COCA spoken 2015)

(102) you were **all** supposed to go back? (COCA spoken 1997)

It doesn’t appear after a progressive or passive auxiliary, as in the made up (103), or in between, as in (104), i.e. in positions 3 and 4, all deemed unacceptable by all native speakers.

(103) a. \*We could have been **all** celebrating. Specifier v\*P

b. \*We could have been **all** poisoned. Specifier vP

(104) \*The flowers may have been **all** being destroyed Specifier vP

Bošković (2004) also argues that the specifier of VP (i.e. of v\*P and vP) can never host the floated quantifier. Note that *all* may function as an aspectual adverb of completeness and then that position is grammatical, as in (105). Here, *all* can be replaced by *completely.*

(105) It are the zombies who will be **all** destroyed. (COCA 2017 Magazine) adverb use

Phasehood resides in v\* and in C and that means that the complement of v\* (VP) is first sent off and then the complement of C. Sentence (92) starts out as (106). As mentioned, the QP that is externally merged in the specifier of the v\*P must move because {QP, v\*P} cannot be labeled; that also holds if the DP were to move, stranding the QP.

(106) ProgP

ei

Prog ?P

been ei

QP v\*P

ru ru

Q DP v\* VP Transfer 1

all 4 painting …

the kids

The QP cannot merge in any of the intermediate specifier positions and then move to the specifier of TP because that would include too many copies in the workspace. The positions left empty in (107) are there to show the positions where the QP could in principle merge but where labeling might be problematic. These positions are not present in the actual derivation. If the QP internally merges in one of the intermediate specifier positions, as in (107), this will be ok (under determinacy) if the QP is stranded and the DP is selected to merge. So, stranded quantifiers would be expected to occur in all positions except those forced to be in the specifier of the v\*P/vP by a preceding Passive or Progressive head.

(107) C

<phi, phi> Transfer 2

ei

DP TP

4 ei

The kids T ?P

u-phi ei

MP

ei

M ?P

may ei

PfP

ei

Pf ?P

have ei

QP ProgP

ru ei

Q ~~DP~~ Prog ?P

all been ei

~~QP~~ v\*P

ru ru

Q DP v\* VP Transfer 1

all 4 painting …

the kids

I assume passive auxiliaries are generated as non-phase heads inside the vP, as in (108), and the reason that the QP does not merge before the passive after the progressive is the same as before, namely labeling. (Nothing hinges on the lack of Transfer here).

(108) ProgP

ei

Prog ?P

been ei

~~QP~~ vP

ru ei

Q DP v VP

*all*  4 *being* 4

*the elephants fed*

In looking at the expanded TP, the reason why the QP/DP doesn’t stay in the specifier of the v/v\*P is because that is not a labelable projection. Further movement into specifiers of functional projections hosting auxiliaries is not an issue for determinacy because the QP and DP are different, as shown in (107). One question left unanswered is how what I have labeled ProgP in (107) can be labeled through feature-sharing between the QP and the ProgP and that holds for other intermediate positions that the QP moves to.

*5.2 A perspective from older English*

In the previous section, quantifier float in Modern English has been shown to be quite constrained in terms of where the quantifier can be stranded, namely in the specifier positions of the auxiliary verbs but not in the specifier of the v\*P/vP. In Old English, there are fewer auxiliaries so stranding in the intermediate positions, as in (103) and (104), is not found. I discuss three differences in quantifier float between early and later stages of English: the floating quantifier in earlier English is found (a) seemingly in the specifier of the v\*P/vP, (b) following the verb, and (c) floated to the left of the DP. Difference (a) will turn out to be non-existing and difference (b) is actually expected – it is Modern English that is unusual. Difference (c) is due to the frequent appositive structures in Old English, not to quantifier float.

Other linguists have worked on floating quantifiers in the history of English with different objectives, for instance, Yanagi (2008; 2012) aims to find the order of quantifier and DP and Bartnik (2011) to determine if a floating approach, as followed in 5.1, or a base generated approach (e.g. as in Doetjes 1992) is more appropriate. I’ll use Yanagi’s and Bartnik’s insights but am discussing the data in the light of possible determinacy violations or labeling paradoxes.

I will assume that, as in Modern English, quantifiers are part of a QP with the DP as a complement rather than as base generated in a separate position. One argument in favor of movement is that the order of a full DP and quantifier is very different than of a pronoun and quantifier, as Yanagi (2008; 2012) shows for the Old and Middle English use of floating quantifiers. As is clear from Table 4.1, with nominal subjects, the vast majority of adjacent quantifiers precedes the subject DP but, with the pronoun, three-quarters follow.

|  |
| --- |
| Q-DP DP-Q Q-Pro Pro-Q Floating  OE Homilies 234 3 27 75 49  PHPCME[[5]](#footnote-5) 1125 6 90 80 148 |

Table 4.1: Old and Middle English subject quantifiers (Yanagi 2008: 117; 2012: 144-6)

This remains the case in Middle English. Representative Old English QPs are given in (109) and (110).

(109) *Nabbað* ***ealle men*** *gelice gife æt gode.*

NEG.have all men like grace at God

`Not all men have the same grace from God.’ (*Catholic Homilies* I, 343.238, from Yanagi 2008: 114)

(110) *Ða astrehton* ***hi ealle*** *hi æt his fotum biddende þæt…*

then stretched they all them at his feet praying that

`Then, they all stretched themselves at his feet, praying that ...’

(*Catholic Homilies II*, Godden 282.89-91, from Yanagi 2008: 114)

That difference in position makes sense if the noun stays but the definite pronoun moves, as in (111a) and (111b), respectively. It wouldn’t fit the base generated hypothesis.

(111) a. QP b. QP

ei ei

Q DP DP Q’

*ealle men hi* ei

Q DP

*ealle* <hi>

The word order in Old English is fairly free for DPs and therefore a floated quantifier, as in (112), is not unusual. Here, the finite lexical verb is in final position with the object and adverb scrambled to the left and the subject pronoun moved to the position next to C.

(112) *þæt* ***hie*** *feond heora ðurh anes cræft* ***ealle*** *ofercomon*

that they enemy their through one’s strength all overcame

`that they all overcame their enemy through the strength of one.’ (YCOE, Beowulf 697-9)

As in (112), the quantifier stays close to the lexical verb in (113) to (115), taken from the YCOE (Poetry, using the pattern [QP-NOM [Q^N eal\*).

(113) *Siþþan* ***we*** *motan anmodlice* ***ealle*** *hyhtan,*

then we must together all rejoice,

The we may all in one voice rejoice.’ (YCOE, Exeter, Christ 339)

(114) ***We*** *þe, hælend Crist, þurh eaðmedu* ***ealle***  *biddað þæt …*

we you savior Christ through humility all pray that

`We all pray to you, Savior Christ, in humility, that …’ (YCOE, Exeter, Christ 358)

(115) *Ac hit is wyrse nu, þæt geond þas eorðan æghwær sindon hiora gelican*

yet it is worse now that throughout this earth everywhere are their like

*hwon ymbspræce,* ***sume*** *openlice* ***ealle*** *forgitene.*

little talked\_about some openly all forgotten

`Yet, it is worse now across this eartheverywhere their likes are talked about only a little, some openly, all forgotten (YCOE, Meters, 10.58)

Now, as for the three differences that set Old (and Middle) English apart from Modern English, I’ll first show that the quantifier seems to occur in the specifier of the v\*P/vP in (112) to (115) and (116) and (117) below, then that it is found following the verb in (118) to (120) below, and that it is floated to the left of the DP in (122) to (125) below. All of this is unlike the Modern English situation but, as I will discuss, not in violation of any principles.

Yanagi’s (2008) data include (116), which would not be grammatical in Modern English, as shown in (103) above.

(116) *and ðeah* ***hi***  *ne magon beon* ***ealle*** *gegaderode*

and though they NEG may be all gathered

`and though they may not all be gathered.’ (Catholic Homilies II, Godden 14.77, from Yanagi 2008: 115)

However, a search in the DOE (of `all’ preceded by the passive auxiliary) shows that this is a unique example. And, (116) is ambiguous between adverb and quantifier because, as Buchstaller and Traugott (2006) note, adverbial derivational morphology includes *ealle*, *ealles*, and *eallunga*. “This means that the Adverb was potentially ambiguous with the Quantifier in nominative singular or accusative neuter singular (*eall*), with nominative and accusative plural, and feminine accusative singular *(ealle*), and (much less frequently) genitive masculine and neuter singular (*ealles*)” (Buchstaller & Traugott 2006: 351). They note that with verbs with telic prefixes, e.g. *ge*- in (116) and *ofer-* in (117), are perhaps particularly ambiguous because the completive adverb adds telicity.

(117) *& þæs muntes cnol mid þeosterlicum gehnipum* ***eall*** *oferhangen wæs*

and that mountain’s summit with dark clouds entirely/all overhung was

`and the summit of that mountin was completely/all covered with dark clouds.’

(ÆCHom I: 467.55, from Buchstaller & Traugott 2006: 352)

So, like in Modern English, quantifiers in Old English are not left in the specifiers of v\*P/vP and do not lead to labeling paradoxes; the examples in (116) and (117) can be analyzed with the quantifier as an adverb.

A second difference is that floating quantifiers can be left at the end of an Old English sentence. Bartnik (2011) finds (118) and (119) where a movement analysis may be a problem, and (120) can be added.

(118) *ac* ***hys wundra***  *næron awritene* ***ealle***

but his misdeeds NEG.were written all.P

`but all his misdeeds were not written.’ (Aelfric Homilies, Bartnik 2011: 143)

(119) *þa comon* ***þa sacerdas*** *to þam cyninge* ***ealle***

then came those priests to that king all.P

`Then, all the priests came to the king.’ (Aelfric Lives of Saints, Bartnik 2011: 143)

(120) *Is ðæt wundorlic, þæt* ***we***  *witan* ***ealle****, þæt mon secan sceal be sæwaroðe …*

Is that amazing that we know all.P that one seek must by sea\_shore

`Is it so amazing that we all know that we must seek by the sea shores.’ (YCOE, Meters, 19.20)

In Modern English, these sentences are ungrammatical, as (121) shows. However, it is the Modern English that is problematic (as has been noted since Sportiche 1988) because *his misdeeds* is an object at some point in the derivation, i.e. in clause-final position, and the quantifier should be able to be left in that position.

(121) \*His misdeeds were not written all.

The Old English (118) and (119) are therefore as expected because they involve a passive and unaccusative, respectively, but () isn’t*.* Why it appears and why the Modern English is ungrammatical remain a mystery.

The third difference is that some DPs and QPs are discontinuous and that the QP has moved to the left of the DP, as in (122) to (125), rather than remaining in the position the QP originally occupies**.**

(122) *Bidon* ***ealle*** *þær* ***þegnas þrymfulle*** *þeodnes gehata*

waited all.P there servants glorious prince’s promise

*in þære torhtan byrig tyn niht þa gen,*

in that splendid city ten nights then again

`The magnificent thanes all awaited there ten more nights for the prince’s promise.’

(YCOE, Exeter, Christ 540)

(123) *Gesawon hie þær weallas standan,* ***ealle***  *him* ***brimu***  *blodige þuhton*

saw they there walls stand all.P them seas bloody thought

`They saw the walls stand (and) all the seas seemed bloody to them.’

(YCOE, Junius, Exodus, 572)

(124) *Me gelicost ðincð þætte* ***ealle***  *witen* ***eorðbuende þoncolmode***  *ðæt hi þær ne sint.*

me likeliest seems that all.P know earth\_dwellers sensible that they there not are

`It seems to me most likely that all sensible earth-dweller should know that they are not up there.’ (YCOE, Meters 19.12)

(125) *Þonne æriste* ***ealle*** *gefremmaþ* ***men on moldan*** *swa se mihtiga cyning beodeð,*

then rising all.P do men of earth as the mighty king commands

Then all men of earth shall experience resurrection, just as the Mighty King commands.’

(YCOE, Exeter, Phoenix, 495)

If it is correct that the higher QP moves and leaves the DP, as in (126), an analysis will have to be employed where the DP first moves out of the QP and then the QP can move by itself and find a reason why Modern English no longer allows this.

(126) QP

ei

Q DP

However, the examples are all from poetry, with full DPs to the right of QPs, and read like apposition, as in (127), for instance.

(127) ***Ðæm***  *feower bearn forð gerimed in worold wocun,*

that.DAT four children forth counted in world were.born

***weoroda ræswan****, Heorogar ond Hroðgar ond Halga til*

men prince.DAT Heorogar and Hrothgar and Halga good

`He, the prince of men, had four children, all told, Heorogar, Hrothgar, and the good Helga.’

(Beowulf, 59)

I will therefore argue that the third difference is not one in the structure of the QPs and DPs but because apposition is typical for Old English. As Blockley (1989: 115) puts it: “apposition is perhaps the defining stylistic characteristic of Old English poetry.”

In conclusion to section 5, Modern English quantifiers can only be left in certain positions, not in the specifier of the vP/v\*P but almost everywhere else the QP has moved. The absence of quantifier float in the specifier of the vP/v\*P is due to labeling difficulties. The quantifiers, left in intermediate positions that DPs moving to the specifier of TP occupy, are not violating determinacy because a DP moves on and is not the same as the QP. A problem that remains for labeling is how the intermediate phrases can be labeled. Although older English seems to be different in that the quantifier can be left in the specifier of vP/v\*P, I show that these cases are rare and that the quantifiers can be analyzed as adverbs. Older English is also different in allowing quantifiers at the end of a sentence, especially with passives and unaccusatives, and this is in fact expected. A third difference is the position of the quantifier to the left of the DP and I attribute that to apposition typical of Old English poetry.

**6 Conclusion**

This chapter uses the Principle of Determinacy to account for a set of changes that result in more efficient derivations. The first change involves the reanalysis of a loosely adjoined phrase in French and other languages as a subject argument. Determinacy also accounts for changes involving copulas, both the change from demonstrative to copula and from topic to subject.

Auxiliaries and quantifiers in English also provide a fertile ground to investigate determinacy because auxiliaries move from lower to higher heads and quantifiers can be left in specifier positions. Auxiliaries are shown to skip the T on their way to C in English and, although English quantifiers pose a labeling problem (in the intermediate position), they pose no determinacy problems. Diachronically, modals avoid indeterminate, local movement by being analyzed as higher heads. Earlier English floating quantifiers are not dramatically different from Modern English ones: they avoid being left in the specifier of the v\*P/vP and are actually more regular in being left in clause-final position (with passives and unaccusatives).

**Chapter 5**

**Labeling and Determinacy: Verb-second and expletives**

**1 Introduction**

Early stages of English are generally Verb-second (V2) with the finite verb moving into the CP domain. V2 is lost starting in the 14th century and an SV order is introduced instead, with the V moving to T. Around the same time, expletive subjects become obligatory to meet the SV requirement in cases where an (indefinite) subject fails to move to the subject position. The expletive has been linked to the presence of a TP, with the possibility of the expletive filling its specifier. A link between the loss of V2 and the introduction of expletives hasn’t been explored in overview studies of early Englsih syntax (e.g. Fischer et al 2000, Los 2015, Fischer et al. 2017). Butler (1980: 300) considers them only indirectly related and van Gelderen (1997) links the introduction of T to the appearance of expletives, but not the loss of V2 to obligatory expletives.

In this chapter, I argue that a third factor approach predicts this set of options, either V2 without TP expletives or V to T with TP expletives. Due to determinacy, V2 is not possible if there is a TP but TP expletives are; if there is no TP, V2 is possible but TP expletives aren’t. In chapter 3, I argued that three phenomena (*that-*trace, null subject relatives, and *that-*deletion) can be accounted for if either the CP or the TP is optional. In this chapter, I will focus on the connection between word order and expletives. I will argue that older stages of English lack a TP and that this enables both V2 and movement of the subject from the specifier of the vP to the specifier of the CP. It also makes the grammatical subject position and the expletive optional. Later stages of English introduce a TP, which enables expletives in the TP but bars V2 (unless there is an expletive in the specifier of the TP).

Why would the TP need an expletive? There could just be the merge of a T and no specifier. This presence only makes sense if, like regular DPs, expletives move to avoid labeling conflicts in the specifier of vP. I therefore explore an approach that considers certain Old English demonstratives and adverbs as CP expletives and others as vP expletives, as in Richards & Biberauer (2005) for German. Once the verb moves to T in Middle English, the vP expletives are reanalyzed as moving to the specifier of the TP.

The outline is as follows. In section 2, I sketch the issues that V2 and TP expletives encounter with determinacy and labeling in the model I am using, i.e. Chomksy (2015) and Chomsky, Gallego, & Ott (2019). In sections 3 and 4, I review what is known about the timing of the loss of V2 and the introduction of expletives in the history of English. This will show that, in the V2 stage, there are no obligatory TP expletives; in the SV stage, TP expletives become frequent. Section 5 ties the appearance of expletives together with the introduction of a TP. Section 6, about the reanalysis of possible vP expletives, is speculative. Section 7 is a conclusion.

**2 Verb-second, expletives, and third factors**

I’ll first show how V2 violates determinacy in Dutch and German and how the absence of a TP resolves that conflict. This absence is not unexpected given the absence of a *that-*trace effect discussed in chapter 3. If German and Dutch lack a TP, TP expletives are not expected. It turns out German lacks them completely and Dutch allows optional TP expletives.

*2.1 V2 and determinacy*

As the name implies, verb-second (V2) constructions have the finite verb in second position but may or may not have the subject in first position, as (1) and (2) show, respectively, for Dutch.

(1) ***Sharon is*** *naar huis gegaan* Subject first and V2 Dutch

Sharon AUX to house gone

`Sharon went home.’

(2) *Gisteren* ***is*** *Sharon laat weggegaan* Adverbial first and V2 Dutch

Yesterday AUX Sharon late away.gone

`Yesterday, Sharon left late.’

As is well-known, den Besten (1993) accounts for the complementary distribution between V2 and the presence of a complementizer by suggesting that the V moves to C when the latter isn’t overtly filled with a complementizer. With the expansion of the CP (Rizzi 1997), strict V2 languages such as Dutch (and German) can be seen as employing the high regions of this split CP, i.e. the ForceP (see Hinterhölzl 2018 and the contributions in Woods and Wolfe 2020). I will just continue to use the CP for Dutch and German but, for more complex V2 languages, such as Old English, the split CP will be useful, as there is evidence for both high V2 and low V2.

In an approach such as that of Chomsky, Gallego, & Ott (2019), V2 constructions in which the subject moves to pre-verbal position are indeterminate if they involve movement of the subject from the specifier of the vP to that of TP, as schematized in (3) for (1).

(3) [CP Sharon [C-is [TP Sharon [T is [v\*P [<Sharon>] [v\* naar huis gegaan]]]]]].

Transfer

The complement of the phase head v\* will transfer to the interfaces and is not relevant for the determinacy violation. What remains is the complement of C and that workspace contains two copies of the subject *Sharon*. That will prevent *Sharon* from moving into the next domain, the CP.

As argued in chapter 4, heads are also subject to the Principle of Determinacy. With a TP present, these would lead to a determinacy violation in (4), as (5) shows.

(4) *Zij* ***gaat*** *weg*  Dutch

She goes away, `She is going away.’

(5) [CP [C gaat [TP [T <gaat> [v\*P [v\*<gaat> weg <gaat>]]]]]].

Transfer

If Dutch (and German) lack a TP, the possibility of the subject preceding the finite verb in second position, as in (1), is not problematic. If a TP is not present, as in (6), the structure is determinate, both for the subject and for the (auxiliary) verb that moves to C.

(6) CP[Sharon [C is AUXP [AUX <is> v\*P[<Sharon> v\* naar huis gegaan]]]].

Transfer

Haider (1991; 2010), van Gelderen (1993; 1997), and others have indeed argued that German and Dutch lack a TP and Platzack (1987) combines the T and C in the CP domain. If there is no TP, there are no determinacy violations either. The evidence for such a lack of TP revolves around the optionality of expletives discussed in section 2.2. Other evidence is the stranding of German prefixes, the stranding of Dutch subjects in the VP, and the absence of infinitival particles that function independently of the verb, such as English *to*. I’ll discuss these three pieces of evidence next.

Haider (2010: 57) writes that “German does not provide any direct evidence for overt functional heads in the midfield [between C and final V] (since there is no possibility of either moving a finite verb to one of these hypothetical positions; …) nor is there uncontroversial evidence for functional specifier positions (no EPP effect that calls for an expletive, no opacity effects on extraction)”. One piece of evidence for non-movement of the V to (final) T is provided by verbal prefixes in subordinate clauses. Because the finite verb appears in final position, the T would have to be final as well, and the movement of V to T would be string-vacuous in (7), as shown in (8). If string-vacuous, (7) is not necessarily evidence for V to T movement.

(7) … *wenn du uns vor-an-meldest* German

… if you us pre-on-register

`If you preregister us, …‘ (Haider 2010: 60))

(8) … TP

ei

VP T

ei *meldest*

DP V

*uns vor-an*-<meldest>

However, when V-movement is not string-vacuous, as with V2 in the main clause in (9), prefixes cannot be stranded.

(9) \**Du meldest uns* ***vor-an*** German

you register us pre-on

To mean: `You will preregister us.‘ (Haider 2010: 60)

Haider argues that the impossibility of prefix-stranding in (9) is evidence that there is no verb movement in (8) either and that the features on the verb are checked in-situ by C. The data are the same in Dutch: the equivalent of (7) is grammatical but of (9) is not.

Just like the position of the finite verb, the position of subjects is hard to determine. In main clauses, they can be preverbal and are then in CP, or postverbal and are then either in the specifier of TP or of v\*P. In subordinate clauses they follow the C, which means they are either in the specifier of TP or of v\*P. In some cases, it is very clear that the subject is in the specifier of the v\*P and these structures provide a second piece of evidence for the absence of the TP. Dutch subjects remain in the vP in double object constructions, such as (10), after the indirect object scrambles to the left (see Broekhuis 1992; van Gelderen 1993: 149). I’ve used a subordinate clause so that as little as possible has moved.

(10) … *dat mijn oom* ***deze boeken*** *gegeven zijn* Dutch

… that my uncle these books given AUX

`that these books have been given to my uncle.’

In (10), the subject *deze boeken* `these books’ doesn’t move to the specifier of the TP and still agrees in person and number with the sentence finite verb *zijn* `are.’ VP-fronting (i.e. vP fronting) takes the subject with it, as in (11), and that provides more evidence that the subject remains in its base generated position.

(11) *[Boeken gegeven] werden mijn oom.* Dutch

books given AUX my uncle

`Books were given to my uncle.’ (van Gelderen 1993: 151)

If subjects remain in the vP in sentences like (10), they could also stay there in sentences without a scrambled indirect object, such as (12) and, of course in main clauses like (2).

(12) a. … *dat* ***Sharon*** *naar huis is gegaan.* Dutch

… that Sharon to home AUX gone

`that Sharon went home.’

b. CP [dat v\*P [ Sharon naar huis is gegaan]].

A structure for the T-less subordinate clause of (10) is given in (13) where C checks its uninterpretable features with the DP in the specifier of vP. As I mentioned in chapter 3, the top vP cannot be labeled unless the v inherits features from C.

(13) CP

ei

C vP (= <phi, phi>) valuation:

[u-phi] wp [u-phi: 3P]

[NOM] DP vP

*boeken*  ei

[i-3P] VP v

[u-Case] ei *werden* [u-Case: NOM]

… V

*gegeven*

`Books were given.’

The situation in German is the same and sentences like (10) are also grammatical showing that the subject need not move to the specifier of TP.

Another piece of evidence for not positing a separate T in German and Dutch is connected to the infinitival marker. Since this marker is separate from V and C in English, as (14a) shows, and cannot occur with a modal, as (14b) shows, both modal auxuliary and infinitival marker can be argued to occupy the T head.

(14) a. For them **to** pay that kind of money to the CEO of a nonprofit co-op is shocking

(COCA 2011 News)

b. \*To can pay that much money …

In Dutch and German, the infinitival marker is a verbal prefix that cannot be separated from the verb, as in Dutch (15b), and is not in complementary distribution with a modal, as Dutch (15c) shows. Again the same is true for German.

(15) a. *Om zoveel geld* ***te betalen*** *is gekkewerk* Dutch

for so\_much money INF pay is crazy

b. \**Om* ***te***  *zoveel geld* ***betalen*** *is gekkewerk*

for to so\_much money pay is crazy

`to pay that much money is crazy.’

c. *Dat* ***te kunnen*** *doen …*

that to can do

`To be able to do that, …

As was also mentioned in chapter 3, a more recent account than Haider’s of not utilizing T(P), is Legate’s (2014) under-inheritance account. She argues there are situations where T does not inherit the features from C, called under-inheritance, that have the same effects as having T absent. Her (2011) account for (1) is that the phi-features stay on C and that the subject values those features but that inheritance by T and movement to the specifier of the TP is skipped. Erlewine (2014) argues that, under circumstances of last-resort, a subject can skip the TP on its way to CP. Labeling considerations would actually force the absence of the TP, rather than the TP just being skipped, because that phrase could not be labeled <phi, phi> if nothing occupies the specifier position. As is clear in (), v inherits features from C so that labeling can take place.

One objection that is often raised against TP-less structures (e.g. by Richards & Biberauer 2005) is the presence of optional TP-expletives in Dutch. German has expletives in CP, as shown in (16a), but they are ungrammatical in the post-C position, as in (16b), a position which is typically reserved for the specifier of the TP and argues against including a TP in German. Dutch also has CP expletives in (17a) but the optionality of post-C expletives, as shown in (17b), is seen as a problem for a TP-less structure.

(16) a. ***Es*** *kamen gestern zwei Bücher* German

EXPL came yesterday two books

b. \*Gestern kamen **es** zwei Bücher

yesterday came EXPL two books

`Two books arrived yesterday.’

(17) a. ***Er*** *kwamen gisteren twee boeken* Dutch

EXPL came yesterday two books

b. *Gisteren kwamen* ***(er)*** *twee boeken*

yesterday came EXPL two books

`Two books arrived yesterday.’

The data in (17) have been discussed in e.g. Haiman (1974) and Travis (1984). However, if Dutch has an emerging, optional TP, this would be expected and not problematic. Van Haeringen (1956) and others since then (e.g. Smessaert et al 2017) have presented Dutch as a `sandwich’ language and the emerging TP certainly fits this continuum between English, with a TP, and German, without one. Questions that should be asked is (a) when did the Dutch expletive first start to appear and (b) are there certain environments that favor it.

On the basis of the data presented in this section, it can be argued that German lacks a TP and that Dutch has an optional TP: absent in (10) and (11) but optionally present in (17b). More on expletives will follow in the next section.

*2.2 Expletives and determinacy*

Having shown in section 2.1 that V2 is problematic if there is a TP and that expletives would help out, I now argue that expletives, in their turn, are challenging because they involve structures with two phrasal sisters, as in (18). These are difficult to label because of the lack of an unambiguous head. The label will involve feature-sharing between the expletive and T, after T has inherited these from C.

(18) ?P = <phi, phi>

ei

DP TP

*There* ei

[i-3] T VP

[u-phi]

Even though they are hard to label, TP expletives appear for two reasons, first, so that vP-expletive subjects can avoid labeling conflicts and, second, to resolve indeterminate structures.

As for the first reason, with certain unaccusative verbs, such as *arrive, emerge,* and *appear*, I assume with Deal (2009) that *there* is merged in the specifier of the vP, as in (19a). With the expletive in this position, its projection cannot be labeled and, just like in the case of regular subjects, it has to move to the specifier of TP, as in (19b), where it can be labeled through feature sharing.

(19) a. ?P b. <phi, phi>

ei ei

*there*  vP *there*  TP

ei [i-3] ei

v VP T vP (or no label is needed)

ei [u-phi] ei

DP V <there> vP

*a train arrived* ei

v VP

4

*a train arrived*

The second reason for the appearance of expletives was also mentioned in chapter 1: expletives resolve indeterminate structures (Chomsky, Gallego, & Ott 2019, Goto & Ishii 2019) and allow extraction of a *wh*-element from the subject position in (20).

(20) a. Who is **there** a picture of on the wall?

b. CP [Who is TP[ there vP[ [a picture of <who>] on the wall ]]]?

Similar to English (20), Dutch (21) shows that extraction of a *wh*-element from a subject position is only possible if there is an expletive.

(21) a. *Wat hebben* ***er*** *[<*wat> *voor mensen] je moeder bezocht?* Dutch

what have.3PL there for people your mother visited

b. \**Wat hebben [<*wat> *voor mensen] je moeder bezocht?*

`What kinds of people visited your mother?’ (Broekhuis 2005: 64; 65)

This tension between (more difficult) labeling but determinate structures presents a puzzle. Why are there indeterminate structures such that expletives have to rescue them? The reason is the presence of a TP in addition to a CP.

There is another complication to expletives, already mentioned at the end of section 2.1. For some speakers of Dutch, inluding myself, the expletive in (21a) is optional and hence (21b) is grammatical. This indicates that the TP is optional, not present for those speakers who accept (22b). Some speakers do not allow extraction at all and only accept (22a). For these speakers, it would have to be assumed that the subject *wat voor mensen* doesn’t move via the specifier of the TP or that this position has an expletive *er,* as in (22b).

(22) a. ***Wat voor mensen*** *hebben je moeder bezocht?* Dutch

what for people have-3PL your mother visited

`What kinds of people visited your mother?’

b. ***Wat voor mensen*** *hebben* ***er*** *je moeder bezocht?*

what for people have-3PL there your mother visited

`What kinds of people visited your mother there?’

Movement of the subject to the specifier of the CP, as in (1), repeated as (23a), never needs an expletive. If the subject were moving via the the specifier of the TP, this would result in a determinacy violation, as indicated with the two copies of *Sharon* that would be in the workspace in (23b).

(23) a. ***Sharon is*** *naar huis gegaan*  Dutch

Sharon is to house gone

`Sharon went home.’

b. CP[ Sharon is TP [ <Sharon> <is> [<Sharon> naar huis gegaan]]]

The inference is that there is no TP.

In this section, I have first shown that V2 faces a determinacy violation if there is a TP. Expletives provide a way out of the indeterminate structures, although they themselves are not as straightforwardly labelable but need feature-sharing. Expletives do not seem to be necessary, e.g. in Dutch (21) for some speakers, and cannot be present in (23a). There is also evidence in (7) to (15) that V2 languages lack a TP. The conclusion is that the TP is not required in Dutch and not present in German.

**3 V2 and its loss in English**

As just discussed for Dutch, V-movement to T and then to C is unexpected due to determinacy. As argued in chapter 3, Old English has *that*-trace sequences and lacks complementizer *that* deletion and null subject relatives, all indications that a TP may be lacking in its clausal spine. In section 3.1, I’ll first show that Old English has V2, as has been known for a long time. V2 is usually seen as movement to C and, in older English, it exhibits a little more variation than in, for instance, Dutch. The Old English V is expected to skip a T when moving to C for determinacy reasons. The word order turns from V2 to SV in the 14th century and that is indicative of a change from V to C to V to T. In section 3.2, I’ll briefly mention some of the reasons that have been put forward for the loss of V2. In section 3.3, I’ll discuss a structure with an expanded CP that has been proposed for V2 in Old English to accommodate its special word order and the changes that take place in Middle English. Determinacy restricts some of the positions in this expanded structure.

*3.1 Old English word order*

In the Old and Middle English independent clause, the subject may be first and the finite verb may occur in the second (V2) position, as in (24). When there is a non-finite verb, this tends to be at the end (V-last), also shown in (24).

(24) *wyrd* ***bið*** *ful* ***ared***.V2 and V-last

fate AUX fully set

`Fate is fully determined.’ (DOE, Exeter, Wanderer 5)

In (25), the subject *he Uesoges Egypta cyning* appears before the finite auxiliary *wæs* but, as extraposition of adverbials is frequent, V-last is more like V-middle in practice, as the position of the non-finite verb *farende* shows.

(25) *7 he Uesoges Egypta cyning* ***wæs*** *siþþan mid firde* V2 and V-“last”

and he Vezoges Egypt’s king AUX after with army

***farende*** *[on Sciþþie on ða norðdælas,]*

going to Scythia in those north\_parts

‘and Vezoges, Egypt’s king, went afterwards with his army into Scythia into the North.’

(*Orosius*, Bately 28, 23-4)

As in German and Dutch (2), the subject is not necessarily in the first position when the finite verb is in second position. In (26), the adverbial *ðes ilces geares* `in the same year’ starts the sentence, the finite verb *com* `came’ is in second position, and the subject *se abbot heanri of angeli*`Abbot Henry of Anglia’ is third.

(26) *Đes ilces geares* ***com*** *se abbot heanri of angeli**æfter æsterne to burch.* V2

this same year came the abbot Henry of Anglia after Easter to Peterborough

‘In the same year, Abbot Henry of Anglia came to Peterborough after Easter.’

(Peterborough Chronicle 1130)

Like in Dutch and German, Old English *wh*-questions always trigger V2, as in (27), as do negatives and certain adverbs.

(27) *Hwæt* ***sceal***  *ic winnan cwæð he.* V2

what shall I gain spoke he

‘What shall I gain, he said?’ (Junius, Genesis 278)

However, unlike Dutch and German, not all topics trigger V2, as was shown in e.g. van Kemenade (1987); Kroch and Taylor (1997); Haeberli (2002ab); and Hinterhölzl and van Kemenade (2012). When the first constituent is an adverbial and the subject a pronoun, as in (28), the verb often appears in third position after the pronoun. Note the difference with (26), where the subject is a full DP and the finite verb appears in second position. Other V3 structures are also possible, as (29) shows.

(28) *Soðlice we* ***gesawon***  *hys steorran on eastdæle.* V3

Truly we saw his star in east

`Truly, we saw his star in the east.’ (West Saxon Gospel, Corpus Christi College, MS. 140, Matthew 2.2)

(29) *Ic þæm godan* ***sceal*** *for his modþræce madmas beodan.* V3

I that good shall for his daring precious\_things give

`I'll give treasures to the good one for his daring acts.' (*Beowulf* 384-5)

In section 3.3, the difference between V2 and V3 is attributed to an expanded main clause CP in Old English.

In the subordinate, dependent clause, verbs all tend to be final (but with extraposed material following them) with the finite one usually last, as in (30).

(30) … *oþþæt se wida ceafl gefylled* ***bið***; V-last

… until that wide jaws filled becomes

`Until the wide jaws become filled.’ (Exeter Book, the Whale 58, Krapp and Dobbie 1936)

This is like Modern Dutch or German, but unlike those languages, Old and Middle English word orders are quite variable, as a few Old English clauses make clear. In (31), the main clause in the first line has V-last, which is a compound verb *ondwyrdon 7 cwædon.* The sentential complement to the compound verb in line 2 is also V-last, which is expected. The last line has another extraposed element (subject) which is subordinate but V2. The final clause is V-last.

(31) *Hie him þa gesceadwislice* ***ondwyrdon, 7 cwædon***  V-last

they him then wisely answered and said

*þæt hit gemalic* ***wære*** *7 unryhtlic þæt swa oferwlenced* V-last

that it greedy was and unjust that such rich

*cyning* ***sceolde*** *winnan on swa earm folc swa hie* ***wæron****.* V2 and V-last

king should battle on so poor people as they were

`They then answered him wisely and said that it was greedy and unjust that such a rich king should wage war on such a poor people as they were’. (Orosius, Bately 29, 1-3)

V-last (or OV) sentences (start to) disappear around 1200 in both main and subordinate clauses (Canale 1980; Pintzuk and Taylor 2004) and V2 starts to be less frequent around 1300 and is completely lost by 1600. As usual, texts are quite varied, though, and a lot of differences can be observed between different genres and areas. Example (32) is from Kent and from the middle part of the 14th century.

(32) *Efterward* ***comþ*** *slacnesse þet* ***comþ*** *of þe defaute of herte and of kueade wone.* V2 and SV

Afterwards comes slackness REL comes from the fault of courage and of evil habits.

*þat* ***bint*** *zuo þane man þet onneaþe he him* ***yefþ*** *to done wel.* SV and V-last

that binds so the man REL hardly he him gives to do well

‘Afterwards, slackness comes which arises from the fault of courage and of evil habits that bind the man who hardly troubles himself to do well.’ (*Ayenbite of Inwit,* Gradon 1965: 32)

The main clause in (32) is V2 and the subordinate clauses have SV order because there are no verbs in clause-final positions, typical in a post 1200 text. Pronouns still precede the verb, as is obvious from the position of *he* and *him* in the second line.

Another text from the late 14th century, also shows some V2 in the main clause, as in (33).

(33) *for wonder wroth* ***is*** *ƿe wyƷ* *ƿat wroƷt alle ƿinges …*V2

because amazingly angry is the creature that made all things

`Because (Indeed) the being that made all things gets incredibly angry.’ (Cleannesse, 5-6, Andrew & Waldron 1978)

Nevalainen (1997) and Fischer et al (2000: 132) put the “sharp decline” of V2 in the mid and late 14th and early 15th centuries. The latter authors identify the decline in the writing of Richard Rolle and Wycliffe and I will add Chaucer, another author from the late 14th century. In the beginning passage of Chaucer’s *Astrolabe,* only one out of 12 sentences is V2, namely the initial one, as Table 5.1 shows. This sentence may be formulaic since lots of texts start that way. There is an expletive as well and, as we’ll see in section 4, this text has regular TP-expletives. This version is from MS Eng 920 (Houghton Library, Harvard University) and dated around 1400 but note that Fischer et al. (2000: 132) mention that some manuscripts have a different word order.

|  |  |
| --- | --- |
| **Here beginnid** ƿe discptnes of the astrolabye. the ring  **Thyn astrelabie haƿ** a ring to putten on ƿe thombe of ƿi riƷth hõnd in takyng ƿe heygty of ƿingys. and take kepe fro from hennes forward **I wil call** ƿe heƿgtij of eny thing take be ƿe riƷle. ƿe altitude wtowte mo wordis.  **This ring rennyd** in a mañ turret fast to ƿe modir of ƿe astrelabie yn so rõm a place þt **it distrbit** not the instrumẽt to hangẽ aftir his rigtij centre.  **The modir of ƿis astr(o)labie is** ƿe ƿikkist plate. prcd wt a large hool **ƿat receiud** yn here wom̃be ƿe ƿynne plates cõpownd for dius climatis 7 ƿe rieth shapẽ yn mañ of a nett or of a webbe of a lobbe.  **Thys modir is diuidid** on ƿe bakhalf wt a lyne **þt comyd** descending fro ƿe ring down to the nedirest bordure.  **ƿe whiche lyne fro ƿe forseide rĩgvn to the centre of the large hole amydde ys clepid** ƿe sowth lyne . or ellis ƿe line m(er)idional.  and **ƿe oƿ deel of ƿe line dow̃ to ƿe bordure is clepyd** ƿe norƿlyne or ell ƿe lyne of mydnigti.  Ouerdwart ƿe forseyde loñge lyne **ƿr crosseƿ** hym a noƿ̃ lyne of ƿe same length fro ƿe East to ƿe West. | V2 = VS  SV  SV  SV  SV  SV  SV  SV  SV  SV  SV  EXPL V |

Table 5.1: The loss of V2 in Chaucer’s *Astrolabe* (S and V are bolded)

By the middle of the 15th century, V2 is lost in most texts, as (34) shows, from Ascham’s 1570 *The Scholemaster*. The subjects all occur before their finite verbs, which are both bolded. This shows that V2 is not present in this text but that it now has an SV-order. As expected, there are no instances of V-final word order either.

(34) After **the childe hath** learned perfitlie the eight partes of speach, let him then learne the right ioyning togither of substantiues with adiectiues, the nowne with the verbe, the relatiue with the antecedent. And in learninge farther hys Syntaxis, by mine aduice, **he shall** not vse the common order in common scholes, for making of latines: wherby, **the childe** commonlie **learneth,** first, an euill choice of wordes, (and **right choice of wordes**, [...], **is** the foundation of eloquence) than, a wrong placing of wordes: and lastlie, an ill framing of the sentence, with a peruerse iudgement, both of wordes and sentences. **These faultes**, taking once roote in yougthe, **be** neuer, or hardlie, pluckt away in age. Moreouer, **there** **is** no one thing, **that** **hath** more, either dulled the wittes, or taken awaye the will of children from learning, then the care **they** **haue**, to satisfie their masters, in making of latines.

This section has illustrated that Old English has quite a varied word order, also where V2 is concerned. To account for this variation, a single CP, as in German and Dutch, will not be sufficient and an expanded CP will be suggested in 3.3. Before that, I briefly discuss why V2 may have been lost.

*3.2 The reasons for the loss of V2*

Rich verbal inflection has been argued to license V2 by Platzack and Holmberg (1989); van Gelderen (1993: 75-6); Roberts (1996) and others. As a result, the loss of V2 (and later of main verb movement to T) has been attributed to the loss of morphological agreement marking. I think this connection is hard to make precise as is the real reason for the loss of both V2 and verbal inflection. In this subsection, I just make a few remarks. For the main point of the chapter – the connection between the loss of V2 and the introduction of expletives –, knowing the reason for the loss of V2 is not so relevant.

As is well-known, in Old English, verbs are inflected for person (especially in the singular) and for number. A present tense paradigm would look like (35).

(35) *Ic fremm****e****, þu frem****est****, he frem****eþ****, we, ge, hi frem****aþ***

1S do 2S do 3S do 1P, 2P, 3P do

`I do, you do, he does, we, you, they do.’

However, in Old English, the morphological marking is sometimes less when the verb is in C and the subject follows. Jespersen (1942: 15) writes "[i]n OE a difference is made in the plural, according as the verb precedes *we* or *ge* or not" and Quirk & Wrenn (1955 [1977]: 42) remark that "[t]here are alternative 1 and 2 p.pl. forms of all tenses and moods in -*e* when the pronouns [...] immediately follow" the verb. This distinction is illustrated in (36), where the verb is initial, and (37), where the verb remains in a final position. This phenomenon doesn’t fit the scenario that V to C is lost because there is less inflection to be checked.

(36) ***Gebide ge*** *on beorge*

wait 2P on hill

`Wait on the hill.’ (Beowulf 2529)

(37) *næfre* ***ge***  *þæs wyrpe* ***gebidað***

never 2P that relief await

`You’ll never experience relief from it.’ (DOE, Exeter, Guthlac 636)

The scenario of agreement loss is very complex, starting in the north and spreading to the south. It interacts with the replacement of the second person pronouns *thou, thee*, and *ge* by *you* and by a renewal of the third person pronoun through *she* and *they*. By the time of Shakespeare, around 1600, there is still specially strong verbal inflection left, as in (38) and (39), although V2 is long gone. And, of course, the –*s* remains in Modern English.

(38) *But* ***she*** *as farre surpasse****th*** *{Sycorax}.*

`But she surpasses Sycorax so much.’ (Shakespeare, Tempest, 3.2.110)

(39) *know now vpon aduice,* ***it*** *touche****th*** *vs both*

`Know now, thinking about it, it is relevant to us both.’ (Shakespeare, Shrew, 1.1.117)

So, the link between the loss of inflection and of V to C movement is an indirect one; these changes both occur between 1300 and 1600 but a text may have one and not the other.

Zwart (2005) and Los (2009; 2012; 2018), for independent reasons, have argued that V2 marks the special information structure status of the first element, which can also mark textual cohesion. According to Los (e.g. 2009: 107-8), the loss of V2 causes a typological change from bounded to unbounded, i.e. a particular structuring of the narrative and a change from frequent anchoring by temporal markers to little or no such marking. The loss of V2 therefore involves a major restructuring of the role of subjects and topics, and a shift from CP to TP, but the reasons for the shift in how information structure is marked are not clear.

In this subsection, I have shown that there is no easy answer to the loss of V2. This event brings about major typological changes, from a topic-oriented to a subject-oriented language. The causes of this shift are not clear, however. I’ll now turn to what changes in the functional inventory of the clause, as V2 is lost.

*3.3 Changes in the clausal structure between Old and Middle English*

Because V2 in Old English is varied (e.g. *wh-*questions are different from topic-initial sentences), two positions are assumed for the subject, a high one and a low one. For Pintzuk (1993), these are the specifier of the CP and that of IP and for Haeberli (2002ab), these positions are the specifier of CP and of AgrSP (part for the TP-layer), respectively. For others, these positions are the specifiers of TopicP and FinP or the specifiers of ForceP and FinP. I’ll use the latter but not so much hinges on the exact labels. As in later English, v\* is a phase head as well as the highest C, either Force or Top.

An expanded CP-layer, as in (40), contains two positions for the V to move to, Force and Fin. If the *wh*-element occupies the specifier of ForceP, the verb moves to the Force head and this results in V2, as shown in (40a). The Force head is then the phase head. The intermediate structure of TopP and FinP is not present otherwise there would be a determinacy violation. If there is a pronoun in the head of the TopicP, as in (40b), V-movement to the highest position is blocked and the result will be V3, with the verb moved to the Fin head. Apart from pronouns, the Top head is also the position for some of the deictic markers, as van Kemenade and Los (2006) argue.

(40) a. ForceP b. TopP

ei ei

wh ForceP topic TopP

*þa* ei ei

Force v\*P (= <phi, phi>) Top FinP

V ei pronoun ei

DP v\*P Fin v\*P (= <phi, phi>)

ei ei

v\* … DP v\*P

ei

v\* Transfer

As before, the two highest v\*Ps are labeled after v\* inherits [phi]-features from the Force and Fin heads, respectively. This is not shown in (40).

(40) provides insight into the possible positions: not all phrases can be present at the same time, only one of the two phase heads can be. For the structure to be determinate, the finite verb can only move to the Force if the lower Fin position is not present, as in (38a), or to the lowest Fin position, as in (40b). There is a labeling issue to be resolved: the topmost v\*P in (40ab) is not labelable as v\*P, as has been discussed in chapter 3.

Los (2012: 21; 41) argues that the varied word order in Old English enables multi-functional preverbal positions that create a host “for contrastively focused material as well as unmarked links to the previous discourse” … “the linking function is particularly facilitated by deictic elements like *þa* `then,’ *þær* `there’ and demonstrative pronouns.” I will come back to these elements in section 5.

From Middle English on, the structure becomes less concentrated on the CP-domain and more on the TP. The Middle English CP includes a TopP, as in (41) for (42), (and a FocP) but its TP can be expanded with many auxiliaries, as shown in (43).

(41) TopP

ei

PP TopP

4 ei

*ouerdwart …* Top <phi, phi>

ei

*ƿr* TP

ei

T vP

*crosseƿ* …

(42) *Ouerdwart ƿe forseyde loñge lyne* ***ƿr crosseƿ*** *hym a noƿ̃ lyne of ƿe same length*

Across the mentioned long line there crosses him an other line of the same length.

`Across the long line, mentioned before, there crosses itself another line of the same length.’

(Chaucer, *Astrolabe,* from Table 5.1)

(43) *If I so ofte* ***myghte have*** *ywedded* ***bee***

`If I might so often have been married.’

(Canterbury Tales, Wife of Bath Prologue, 7)

Concluding this section, Old English has quite a varied word order, also where V2 is concerned, and that’s why an expanded CP, as in e.g. (41), is appropriate. If the highest C is a phase head, the various choices for verb movement, either to Force or to Fin, are accounted for. By the late 14th century, V2 is mostly lost. The introduction of expletives and the loss of V2 can be linked through the introduction of a TP and a simplification of the CP domain, with C as the phase head. Structurally, it means the verb stops moving to C, except in cases of *wh*-movement, and just reaches T. V2 loss is not uniform and each text separately has to be regarded in its own right to find the corelation with the presence or absence of TP expletives.

**4 Expletives**

In Modern English, there are two expletive subjects, *it* referring to CPs and *there* referring to indefinite DPs. They are both situated in the specifier of the TP. In older stages, the demonstrative *ðæt* and locative *þa* are also possible expletives but their position isn’t always clear. The origins of *it, that,* and *þa* are clear but that of *there* is not. It is often assumed to have grammaticalized from a locative to a TP expletive but I will entertain an alternative source in the Appendix. In this section, focusing on *there* expletives, I will start with a few possible instances of TP expletives in Old English and then turn to uncontroversial ones in Middle English and link their appearance with the demise of V2. Section 5 will consider the possibility that Old English has CP and vP expletives and that changes the analysis, as I point out througout.

*4.1 The first English expletives*

Semantically unambiguous existential constructions with `there’ are rare in Old and Early Middle English. Most instances of `there’ are locative, of `that’ demonstrative or conjunctive, and of `it’ personal pronouns. The criterion I use to determine expletivehood is their position. A demonstrative is a TP expletive if it follows an adverb(ial) and is followed by a verb and indefinite subject, as in (44a). In contrast, if the language is without a TP, an initial, full adverbial will always trigger V to C. An expletive following a complementizer and preceeding an indefinite, as in (44b), is also seen as a TP-expletive, but there is a complication that I will mention in section 5. It is possible that the expletive in (b) is not a TP expletive but a vP one. Although this analysis of vP expletives is not widely accepted, I still put most emphasis on the expletives in (a).

(44) a. XP, there is/was a/no/some person

Locative Adverbial EXPL BE INDEFINITE N

b. C there … is/was a/no/some person

C EXPL BE INDEFINITE N

Typical Old English V2 existentials are given in (45) and (46) and these occur without an expletive. As a result, these can be V1, as in (47).

(45) *On þæm dagum wæs an hirde on Ispanium, se wæs Ueriatus haten,*

In those days was a shepherd in Spain, who was Viriathus called

`In those days, **there** was a shepherd in Spain, who was called Viriathus.’ (DOE, Orosius, 114.12)

(46) *On þas kinges dæi Offa, wæs an abbot on Medeshamstede Beonne gehaten.*

In the king’s day Offa was an abbott in Medeshamstede Beonna called

`In the days of King Offa, **there** was an abbot Medeshamstede called Beonna.’

(DOE, Peterborough, 777.3)

(47) *Wæs micel fyr onæled on middum þam huse.*

was large fire started in middle that house

`**There** was a large fire started in the middle of the house.’ (DOE, Bede 180.26)

A few TP expletives have been identified and, depending on how frequent these really are, this might make Old English into a stage with optional TP. For instance, sentence (48) is a possible candidate for an Old English expletive because it is an SV structure where *þær* follows a topic and, in the Latin original, no locative appears. Quirk (1951) argues that (49) is another and Butler (1980) finds one with *ðæt*, as in (50).

(48) *On ðæm dagum* ***þær*** *wæron  twa cwena,*

In those days EXPL were two women

*þæt wæron gesweostor Anthiopa & Orithia*

REL were sisters Anthiopa and Orithia

`In those days, there were two women who were the sisters Anthiopa and Orithia’ (Breivik 1977: 340; *Orosius*, Bately 30.20)

(49) ***Þær*** *wæs  sang ond sweg  samod ætgædere fore Healfdenes hildewisan*

EXPL was song and music together together before king\_Danes battle\_leader

`There was song and music before the leader of the Danes.’ (Breivik 1977: 341, 1983: 253; Quirk 1951, *Beowulf* 1063-4)

(50) *Ac* ***ðæt*** *nis nan man þte sumes eacan ne ðyrfe, buton Gode anum.*

But that NEG.is no man REL some addition NEG need except God alone

`But there not is no man that some addition not needs, except God alone'.

(Ælfred, *Boethius* C 55, 28, Butler, 1980: 268)

Breivik (1983) argues that the interchangeability of the various expletives (*ðæt, ðære, it,* and null) between different versions of manuscripts is evidence for their expletive status. He finds two variations in the Lauderdale and Cotton manuscripts of *Orosius*, as can be seen in (51a) with an expletive (and verb last) and (51b) without one. In (52), that choice of expletive is reversed, with a null subject in (52a) and a *hit* in (52b). Note that these expletives follow a complementizer in (51a) and (52b) so that is extra evidence that they are TP expletives.

(51) a. *Ac siþþan Scipia geascade þæt þa foreweardas wæron feor*

But when Scipio learned that those forwarders were far

*ðæm fæstenne gesette, & eac þæt* ***þær nane oðre near næran****,*

that fastness put and also that EXPL no others near not.were

*he þa diegellice gelædde his fird betuh þæm weardum.*

he then secretly led his army between those warders

`But when Scipio learned that the forwarders were set far from the fastness, and also that there were no others nearer, he led his army between the warders.’ (Breivik 258, Orosius Lauderdale 106.17, my gloss/translation)

b. *þæt* ***nane oðre near næran****.*

that no others near NEG.were

`that there were no others nearer.’ (Breivik 259, Orosius Cotton, my gloss/translation)

(52) a. *Æfter þæm for Hannibal ofer Bardan þone beorg, þeh þe*

After that went Hannibal over Barda that mountain though REL

***ymb þone tieman wæren swa micel snawgebland*** *swa þætte …*

about that time were so many snowstorms so that …

`Then, Hannibal went across the mountain Barda although there was around that time so great a snowstorm that …’ (Breivik 258, Orosius Lauderdale 100.9, my gloss/ translation)

b. *þeh þe* ***hit ymbe þone timan wæren****.*

though REL EXPL about that time were

`although there were around that time …’ (Breivik 259, Orosius Lauderdale, my gloss/ translation)

So, like Dutch, Old English has some expletives that look like TP-expetives which means the TP is optional.

By Early Middle English, e.g. Layamon’s *Brut*, TP expletives start to appear regularly but are not required. Layamon’s text remains in two manuscripts, the earlier Caligula and the later Otho. In (53), there is an expletive in Caligula but not in Otho and, in (54) and (55), the reverse is true. Breivik (1983: 262) takes the optionality as an indication that these are expletives and not locatives.

(53) a. *Ah nes hit buten ane while. þat* ***þer com an oðer time***.

but NEG.was it but one while that EXPL came an other time

`It was only a short time that there came another style.’ (Caligula 5489)

b. *þat* ***com an oþer time***.

that came an other style (Otho 5489)

(54) a. ***Nes næuere na ma****. þat don þer mihte Cristin dom*.

NEG.was never no man REL do there could Christian ceremony

`There was no man who could perform the Christian ceremony there.’ (Caligula 6618)

b. ***Nas þar neuere no man****.*

NEG.was never no man

`There was no man.’ (Otho 6619)

(55) a. *For* ***nis nan kine lond****. na swa brad næ swa long.*

for NEG.is no kingdom not so broad nor so long

`Because there is no kingdom however broad or long.’ (Caligula 6660)

b. *For* ***nis þar no kinelond****.*

for NEG.is EXPL no kingdom

`Because there is no kingdom.’ (Otho 6660)

*There* expletives in Layamon are ambiguous, according to Breivik (1983) and van Gelderen (1997: 92-5), and certainly not obligatory. Layamon’s word order is quite varied, which the sentences above show and also the Preface, as reproduced in Table 5.2. As is common for the instances of surface SV, it is not clear whether they are V2 with the subject in the CP domain or SV with the subject in a specifier of TP. However, after adverbs, like `thus’ and `now’, there is still V2 in this text so this stage is still V2.

|  |
| --- |
| SV/SV **An preost wes** on leoden; **Laʒamon wes** ihoten. A priest was among people, Layamon was named  SV/V3 **he wes** Leouenaðes sone; liðe him **beo Drihten**. He was the son of Liefnoth, let God have mercy on him  SV **He wonede** at Ernleʒe; at æðelen are chirechen. He lived at Areley, at a lovely church  V-last vppen Seuarne staþe; sel þar him **þuhte**. up Severn's bank. Blissful he thought it  V-last on‑fest Radestone; þer **he** bock **radde**. close to Redstone. There he book read  SV EXPL **Hit com** him on mode; & on his mern þonke. it came on his mind a merry thought  SV/V-last þet **he wolde** of Engle; þa æðelæn **tellen**. that he wanted to tell of the English nobles  SV/SV wat **heo** ihoten **weoren**; & wonene **heo comen**. what they were called and from-where they came  V-last **þa** Englene londe; ærest **ahten**. that England first owned  V-last æfter þan flode; **þe** from Drihtene **com**. after the flood which came from God  V-last 2x **þe** al her **a‑quelde**; quic þat **he funde**. which killed all which that it found  buten Noe.& Sem; Iaphet & Cham. except Noah and Sem, Japhet and Ham  V3 & heore four wiues; **þe** mid heom **weren** on archen. and their four wives who with them were on the Ark |

Table 5.2: Word order in Layamon’s Caligula (Subjects and finite verbs in bold)

The word order in Layamon’s (later) Otho is not remarkably different. There is some indication that the infinitival `to’ is more independent of the verb in Otho (56) than in Caligula (57). In the latter, it is still a verbal prefix but, in Otho, it appears together with the complementizer in C. (56) provides no evidence of *to* as T, however, because *for* and *to* could be one unit.

(56) *Þe king … wide his men sende.* ***for to*** *hine* ***finde.***

the king … wide his men sent for to him find

`The king sent his men all over to find him.’ (Otho 8488-8490)

(57) *heo wenden hine* ***to finden***.

they went him to find

`They went to find him.’ (Caligula 8874)

Layamon’s V2 stage is compatible with the optional expletives filling the specifier of TP; the lack of a designated T element provides more evidence for the optionality.

The problem in determining when *there* becomes an expletive is that number agreement is inconclusive. If *there* is not an expletive, one expects the verb to agree with the real subject; if it is an expletive, the verb’s features still match those of the postverbal NP. Thus, Early Middle English constructions such as (58) and (59) are ambiguous between *there* being a locative and the verb agreeing with the (postverbal or relative) subject on the one hand and *there* being an expletive without features on the other. Only after the complete rigidification of the SV word order must *there* in (58) and (59) be seen as a subject and as `defective' in features, having only third person, not number and gender. The plural comes from the postverbal DP or from the relative.

(58) *þer* ***were*** *twey men … þat leuyd to gedyr,*

LOC/EXPL were.P two men that lived together

`There were two men who lived together'.(*Handlyng Synne* 4001, Sullens 1983)

(59) *þe lut þ ter* ***weren.***

the little REL LOC/EXPL were.P

`the few that there were'.(*Katherine* 34, Royal and Bodley Mss are the same in this line)

In conclusion, in Old and Early Middle English, V2 is prevalent and expletives in TP are not required (e.g. (45)) and are mostly ambiguous between a locative and expletive (e.g. (48)). This shows that, at best, the specifier of TP is optional. In section 5, we’ll see the early expletives ((48) to (50)) could be analyzed as vP expletives as well and so TP expletives would be lacking completely. The behavior of *to* (and other elements that fill T) is not indicative of a TP either.

*4.2 Expletives and V2*

In this section, I’ll examine expletives in texts that are SV and no longer V2. As mentioned above, Fischer et al (2000: 132) identify the decline in V2 in the writings of Richard Rolle and Wycliffe. I’ll consider these two authors and Chaucer, where SV is also pretty common. I’ll provide examples of expletives and, as before, will count a word as a definite TP expletive if it follows an adverbial and is followed by a verb and indefinite subject. I also comment on the use of the expletive after a complementizer because V2 would not apply there (but the expletive could be a vP expletive, as discussed in section 5).

First, Richard Rolle of Hampole is a northern 14th century writer whose Works and Psalter have been examined below (MED version). The expletives in (60) to (63) show that they come in many shapes, e.g. *it, ther(e), thar(e), þer* and *þare.* They follow complementizers and are therefore not the typical environment for V2.

(60) *forthi* ***it is*** *na nede to sett it here.*

because EXPL is no need to put it here

`because there is no need to put it here.’ (MED, Psalter, Bramley 192)

(61) *for* ***ther is*** *not oonly oon iudas bot many.*

because EXPL is not only one Judas but many

`because there is not just one Judas but many.’ (MED, Psalter, Bramley 391)

(62) *I perceyuede wele* ***þare was*** *na womane bot þe deuell in schappe of …*

I perceived well that there was no woman but the devil in the shape

`I saw clearly that that was no woman but the devil in the shape of …’ (MED, Works, Horstmann, 191)

(63) *& wate* ***þer is*** *na gaynchare ne merci to fynd*

and know EXPL is no escape nor mercy to find

`and know that there is no escape or mercy to be found.’ (MED, Works, Horstmann, 120)

(62) and (63) show that *that-*deletion occurs which, following the arguments in chapter 3, marks the absence of a CP and the presence of TP.

There are very few indefinites without an expletive in Rolle; examples are (64) to (66). These are V2 and, so, they suggest that V2 is still possible and that then the TP can be missing.

(64) *and now* ***is na prophet****. that is,* ***preste or prelate is nane****, that dare chasty vs.*

`and now there is no prophet, that is, there are no priests or prelates that dare chastise us.’ (MED, Ps, p. 265)

(65) *for in ilk a contre* ***is some*** *that lifis rightwislyke.*

`because in such a country, there are some that live in a right way.’ (MED, Ps, p. 16)

(66) *In thaim* ***is so mykill fayrhed*** *of vndirstandynge. & medicyne of wordes.*

`In them, there is so much beauty of understanding and medicine of words.’ (MED, Ps, p. 3)

What else do we know about Rolle’s language? For instance, is there evidence that *to* is independent and positioned in T? The only possible case is (67) but here *to* could be a preposition. In (68), it seems more likely to go together with *for* in C. *Do* is consistently used as lexical verb, as in (69), so that provides no clue for the presence of a T position.

(67) *that thai may noght cum* ***to****.*

`that they may not come to.’ (MED, Psalter, Bramley 319)

(68) *rises agayns me,* ***for to*** *put me doun and brynge me out of charite*

`rise against me, in order to put me down and bring me out of grace.’ (MED, Psalter, Bramley 13)

(69) *that .i.* ***doe*** *thi will*

`that I do what your will is.’ (MED, Psalter, Bramley 148)

So, Richard Rolle of Hampole’s texts are no longer V2 (according to e.g. Fischer et al 2000) and have many clear expletives in the subordinate clause but not so many after topics in the main clause and there is no overt filling of the TP, e.g. by infinitival markers.

Wyclif’s works remain in 170 manuscripts and are usually divided in earlier and later versions. There is considerable debate as to who the author/s was/were. The text is usually divided in an earlier and a later version, with the early version closer to the original Latin. The later text is solidly SV and displays expletives, as I will show.

As shown in (70), Wyclif’s works display SV word order (both S and V are bolded), especially the later version which is not so close to the Latin.

(70) *IN the bigynnyng* ***God made*** *of nougt heuene and erthe. Forsothe* ***the erthe was*** *idel and voide, and derknessis weren on the face of depthe; and* ***the Spiryt of the Lord was*** *borun on the watris. And* ***God seide****,* ***LiƷt be*** *maad, and* ***liƷt was*** *maad.*

`In the beginning, God made heaven and earth out of nothing. And, the earth was useless and empty and darkness was on the face of the depth; and the spirit of God was born on the waters. And God said, Let there be light and light was made.’ (Wyclif, Genesis 1-3, later version)

Since this stage is SV, we expect TP expletives. De Groot's (1959) *The Gospel of John* juxtaposes a carefully edited early and later edition and there is good evidence for TP expletives in the later edition, as in (71a) and (72a), but fewer in the earlier version, as (71b) and (72b) show, because that translation stays close to the Latin original, where expletives do not appear. Because the Latin text does not include a locative, as in (71c) and (72c), it is likely that the *there* occuring in the later English edition is an expletive.

(71) a.***Ther*** *cam a womman of Samarye.*

there came a woman from Samaria (*John*, IV, 7, later version, de Groot)

b. *A womman came of Samarie.*

a woman came from Samaria (*John*, IV, 7, early version, de Groot)

c. *uenit mulier de samaria* (*John*, IV, 7 *Vulgate*)

came woman of Samaria

`There came a woman of Samaria'.

(72) a. *And* ***ther*** *was a man there.*

and there was a man there (*John*, V, 5, later version, de Groot)

b. *Forsothe sum man was there.*

truly some man was there (*John*, V, 5, early version, de Groot)

c. *erat autem quidam homo ibi* (*John*, V, 5 *Vulgate*)

was indeed some man there

`There was indeed some man there'.

There are some *ther* expletives in the early version but these are fewer compared to the later version: 4 in the early version as opposed to 18 in the later version. In the later version, the verb `to be’ followed by an indefinite doesn’t occur without the expletive.

Locative *there* appears in both the early and later Middle English renderings, as in (73a) and (73b), translating *ibi* `there' in the Latin version in (73c).

(73) a. *Forsoth the welle of Jacob was* ***there****.*

truly the well of Jacob was there (*John*, IV, 6, early version, de Groot)

b. *And* ***ther*** *was the welle of Jacob.*

and there was the well of Jacob (*John*, IV, 6, late version, de Groot)

c. *erat autem* ***ibi*** *fons iacob*

was moreover there well Jacob (John IV, 6 *Vulgate*)

`Moreover, the well of Jacob was there'.

It seems that both the early and later versions make an orthographic distinction. The existentials are usually *ther*, as in (65a) and (66a), whereas the locatives are frequently *there*, as in (67a), indicating phonological weakening and possibly a grammaticalization effect.

The insertion of *ther* where the Latin original lacks *ibi* or where another locative *there* occurs, as in (71a), provides evidence that TP expletives are used in Wyclif. If the introduction of expletive *ther(e*) is due to the introduction of a specifier of TP, one expects evidence for a T position as well. This is indeed the case and I will turn to that now.

For this question, the entire Old and New Testament in Forshall and Madden has been searched. Changes in the behavior of modals and of infinitival *to* provide evidence for the occurrence of a special head position T. In Wyclif, such evidence can be found: modals no longer double and infinitival *to* can be separated from its verbal part as in (74) and (75). This points to a special position (T) being present with expletives in the specifier.

(74) *The prestis ben forfended* ***to*** *eny more* ***takyn*** *monee of the puple.*

`The priests are forbidden to take any more money from the people.’

(*4 Kings*, XII, 8, Visser 1963-1973: 1041)

(75) *betere to ben stille þan* ***to*** *fewe thingis* ***writen****.*

`Better to be silent than to write too few things.’ (*Prefatory Epistles of St Jerome*, VII, 224-5)

Accusative-with-infinitives also occur, as in (76) and (77), and this is evidence of the independence of *to* in a T (Massam 1985; van Gelderen 1993). Lindberg (1978: 42-3) mentions 16 occurences in the early edition he compiled of *The Prefatory Epistles of St Jerome*. Although Warner (1982: 141ff.) attributes the more frequent use of Accusatives-with-Infinitives in the early version to Latin influence, I assume the author would not use an ungrammatical translation.

(76) *Forsothe thei gessinge* ***him to be in the felowshipe****.*

`truly, they guess him to be in the fellowship.’ (*Luke* II, 44, Forshall and Madden).

(77) *We knowen* ***the writer of hem, luke, to ben a physician****.*

`We know the writer of them, Luke, to be a physician.’

(*Prefatory Epistles of Jerome*, VII, 160, Visser 1963-1973: 1041)

As mentioned, the word order is SV but verbs continue to move to C in questions, of course, as (78) shows.

(78)***Saw Y thee not*** *in the 3erd with him?*

`Didn’t I see you in the garden with him?’ (*John*, XVIII, 26, later version, de Groot)

In conclusion to Wyclif, there are TP expletive *ther*s. This can be related to the appearance of a T-position, evident from the introduction of accusative-with-infinitives and split infinitives.

Chaucer is another author identified as having SV, rather than V2, in Table 5.1 above. In this text, the *Astrolabe*, there are expletives as well. They occur after topics, as in (79) to (82), and in subordinate clauses, as in (83) to (85), indications that they occupy the specifier of TP.

(79) *of the astrelabie þat I haue seyn,* ***there*** *ben some conclusions þat …*

`of the astrolabe that I have seen, there are some goals that…’ (Astrolabe, Preface 21-22)

(80) *Ouer-thwart this for-seide longe lyne,* ***ther*** *crosseth hym a-nother lyne*

`Across this already mentioned long line, there crosses itself another line.’ (Astrolabe, 1.5)

(81) *thorw wich pyn* ***ther*** *goth a litel wegge*

`through which pin, there goes a little wedge.’ (Astrolabe, 1,14)

(82) *From this senyth, as it semeth,* ***ther*** *come a maner krokede strikes*

`from this zenyth, as it seems, there comes a type of curved marks.’ (Astrolabe, 1.19)

(83) *so general … þat* ***ther*** *nedith no more declaracion*

`so general that no more explanation is needed.’ (Astrolabe, 2.2)

(84) *after thin Almenak vp-on wych table* ***ther*** *folwith a canon*

`according to your almanac, upon which plate there follows a set of rules.’ (Astrolabe, Preface 94-5)

(85) *ouer the wiche degrees* ***ther*** *ben nowmbres of augrym*

`over which degrees there are numbers of algorithms.’ (Astrolabe, 1.7)

Searching for a `be’ verb with an indefinite without `there’ provides no results in the *Astrolabe* so that suggests TP-expletives are as necessary as in Modern English. In Chaucer's *Canterbury Tales*, *ther* is also used as an expletive, e.g. after topics in (86) to (88).

(86) *And over his heed* ***ther shynen*** *two figures.*

`And above his head, there shine two images.’ (CT, *Knight's Tale* 2043)

(87) *With hym* ***ther wenten*** *knyghtes many on.*

`With him, there went many a knight.’ (CT, *Knight's Tale*, 2118)

(88) *that in hir coppe* ***ther was*** *no ferthyng sene.*

`that in her cup, there was no small remnant to be seen.’ (CT, *Knight's Tale*, 134)

There are a few V2 word orders with TP expletives, as (89) to (91) show, which are unexpected given determinacy. In the next section, I venture an explanation of these V2 expletives as vP-expletives.

(89) *vnder the cercle of Cancer, ben* ***ther*** *12 deuysiouns embelif*

`under the circle of Cancer, there are 12 oblique divisions.’ (Astrolabe, 1.20)

(90) *Thus ben* ***ther*** *6 degrees of the zodiak on oo side*

`Thus, there are 6 degrees on the zodiac on the one side.’ (Astrolabe, 1.21)

(91) *thanne is* ***ther*** *no more but waite in which azymut þat …*

`Then, there is no more to do than to wait in which arc that … (Astrolabe, 2.31)

In addition to the frequent use of expletives, is there evidence for a T? Modals and *do* are used in their Modern English meanings, as in (92) and (93).

(92) *It* ***shal*** *be doon.*

`It shall be done.’ (Chaucer, *The Reeve's Tale* I, 4034)

(93) *how now, what* ***do*** *ye heer?*

`How now, what do you hear?’ (Chaucer, *The Reeve’s Tale,* I, 4025)

*To* is often together with *for* in C, but there is a split infinitive, as in (94), and an Accusative-with-Infinitive in (95) and these are seen as an indication of the independence of *to.*

(94) *to seye to the, that art the man that I best triste; And peril non was it* ***to*** *the* ***bywreye****.*

`to say to you, who is the man I most trust; and it was no peril to reveal to you.’

(*Troilus and Criseyde*, III, 365-67, Visser 1966: 1039)

(95) *It behoveth by necessite that every thing be ryght as science comprehendeth* ***it to be****.*

`It is appropriate by necessity that every thing is as science understands it to be.’ (*Boece*, Visser 1973: 2309).

In conclusion to Chaucer, SV word order is prevalent, as are TP expletives, and there is some independent evidence for a T-position as well.

Concluding 4.2, as the word order changes from V2 to SV and evidence for a T head starts to appear in late Middle English, the use of TP expletives solidifies as well. In this section, three authors that use frequent SV structures have been examined. Rolle, from the middle part of the 14th century, regularly uses TP expletives but still has V2 without expletives in existentials. Wycliff (the later version) and Chaucer are from the last part of the 14th century and show TP expletives as well as evidence for a T.

For determinacy, this state of affairs means that, as the TP is introduced, movement of V to C will not be a problem because this movement is lost. The question I haven’t been able to answer is: why was the TP introduced when V2 was being lost? Is it the information structure that changes or does the role of C become less prominent? The C has tense and agreement features and doesn’t need T. The reason for the rise of auxiliaries and T must have been an independent change (see section 4.3 of chapter 4).

**5 vP and CP expletives**

In this section, I discuss the possible presence of an alternative set of expletives in Old English, based on ideas by Richards and Biberauer (2005) for German. It is possible that Old English optionally has two kinds of expletives, one in the specifier of the vP and another in the specifier of the CP (the specifier of the FinP in the expanded CP). The expletive in the specifier of the CP is lost and the expletive in the specifier of the vP starts moving to the specifier of the TP, as has been argued for Modern English by e.g. Deal (2009). The advantage of not having expletives that are purely for the TP (i.e. just for the syntax) is that expletives are then motivated by the interfaces, pragmatic for the CP expletive and semantic for the vP one.

I’ll first discuss Richards and Biberauer’s (2005) ideas and then argue that Old English likewise might have had two kinds of expletives, one of which it loses when V2 is lost. The CP expletives don’t facilitate labeling or determinate structures but are there for pragmatic reasons, as (among others) Los (2009), Los and van Kemenade (2018), and Zwart (2005) have argued.

*5.1 The two kinds of expletives*

Richards and Biberauer (2005) argue that expletives are unique to C and v, the phase heads. Expl-vP moves to the specifier of the TP; Expl-CP is for V2. Diachronically, CP-expletives arose with the regularization of V2, e.g. in German (96). (97) shows *es* cannot appear in other positions, i.e. what would look like the specifier of TP.

(96) ***Es***  *kam gestern ein Mädchen*  German

EXPL came yesterday a girl

`There came a girl yesterday.’

(97) \*Gestern kam **es** ein Mädchen German

yesterday came EXPL a girl

`There came a girl yesterday.’

German actually has different morphemes for the two expletives, as (98) shows.

(98) ***Es***  *hat* ***da*** *jemand auf der rechten Seite „sehr richtig!“ gerufen* German

EXPL has EXPL someone on the right side `very right’ called

`Someone on the right side called out `right on.’ (google example)

Speculating on diachronic developments in German, Richards and Biberauer (2005: 137) argue that, once the finite verb loses rich, overt agreement, T will need to look elsewhere “to satisfy its morphological requirements” and that’s when Expl-TP arises. In accordance with what I have argued above (e.g. in section 2), the presence of these two expletives is perfectly compatible with a structure without a TP and with the TP expletive in (48) to (55) as a vP-one. However, Richards and Biberauer (2005: 129) argue against such an analysis for the German data. Their arguments are indirect and involve the fact that (a) Dutch has optional expletives and that (b) it would be a “drastic departure from `universal’ design.”

Problem (a) can be solved through an optional expletive which, in Old English, can be argued to remain in the specifier of the vP (more on this in section 5.3) and, for many speakers of Dutch, optionally fills the specifier of the TP. When the TP is present in the spine, determinacy and labeling require the expletive in the TP if the subject is moving into the CP domain: labeling requires a specifier to provide features to label the <phi, phi> phrase and determinacy requires this specifier to be an expletive. Problem (b) is not a problem if languages show a fluidity between C and T: in some, both C and T are present but T inherits features from C; in some, T can be skipped; and, in some, T is not present. The options are summarized in Table 5.3. I’ll turn to CP and vP expletives in Old English next.

|  |
| --- |
| **V to C presence of T Feature Inheritance**  Dutch yes: V2 optional C to v\*/v or C to T  German yes: V2 no C to v\*/v  Old English yes: V2 and V3 no C to v\*/v  later Middle English no yes C to T |

Table 5.3: Options for C and T

*5.2 CP and vP expletives in English*

The specifier of the CP in Old English, Modern German, and Modern Dutch has been argued to be relevant to text cohesion, as mentioned at the end of section 3.2. Vennemann (1974), Haiman (1974), and Stockwell (1977) all argue in one way or another that Indo-European SOV is changed in Germanic to Verb-fronting and preposing of topical material to the left of the verb. Haiman (1974) links V2 and *there*-insertion to argue that expletives fill the first position in V2 languages if there is no topic. Expletives only develop in languages with V2 or that had V2. The older expletive is therefore a CP expletive. Breivik (1983: 409; 419) argues the same: `there’ starts out as topic with V2.

Also using a pragmatic model, Los (2012), Los and Dreschler (2012), and Los and van Kemenade (2018: 127) argue the “interrelations between V2 syntax and an articulated demonstrative paradigm create efficient systems for expressing topic shift and topic continuity.“ The demonstratives in initial position (with the verb to their right) “naturally link to the focus of the preceding clause” (Los and van Kemenade 2018: 143); these initial demonstratives decrease dramatically as V2 is lost. In chapter 6, there will be examples of the fronting of PPs with demonstrative objects that are then reanalyzed in that fronted position.

A good illustration of the function of the expletive *þa* in (late) Old English is given in Table 5.4. This is the beginning of the Peterborough Chronicle and *þa* links the events. Because of the expletive nature of *þa*, no new topics are introduced in the specifier of CP.

|  |  |
| --- | --- |
| Brittene igland is ehta hund mila lang. & twa hund brad. & her sind on þis iglande fif geþeode. Englisc. & Brittisc. & Wilsc. & Scyttisc. & Pyhtisc. & Boc Leden.  Erest weron bugend þises landes Brittes.  þa coman of Armenia. & gesætan suðewearde Bryttene ærost.  **þa** gelamp hit þæt Pyhtas coman suþan of Scithian. mid langum scipum na manegum.  & **þa** coman ærost on norþ Ybernian up. & þær bædon Scottas þæt hi ðer moston wunian.  Ac hi noldan heom lyfan. forðan hi cwædon þæt hi ne mihton ealle ætgædere gewunian þær.  & **þa** cwædon þa Scottas. we eow magon þeah hwaðere ræd gelæron.  We witan oþer egland her be easton. þer ge magon eardian gif ge willað. & gif hwa eow wiðstent. we eow fultumiað. þæt ge hit magon gegangan.  **ða** ferdon þa Pihtas. & geferdon þis land norþanweard. & suþanweard hit hefdon Brittas. swa we ær cwedon.  And **þa** Pyhtas heom abædon wif æt Scottum. on þa gerad þæt hi gecuron heora kyne cinn aa on þa wif healfa. þæt hi heoldon swa lange syððan.  & **þa** gelamp hit imbe geara rina. þæt Scotta sum dæl gewat of Ybernian on Brittene. & þes landes sum dæl geeodon. & wes heora heratoga Reoda gehaten. | The island Britain is 800 miles long and 200 miles broad. And there are on the island five nations; English, British, Welsh, Scottish, Pictish, and Latin.  First were living on this land Britons.  They came from Armenia, and peopled Britain southward.  Then happened it, that the Picts came south from Scythia, with long ships, not many.  and, then coming first in the northern part of Ireland, they told the Scots that they must dwell there. But they would not give them leave; because they said that they were not all allowed to live there.  And the Scots said: we can give you advice though.  We know another island here to the east. There you may dwell, if you will; and whosoever withstandeth you, we will assist you, that you may gain it.  Then went the Picts and entered this land northward. Southward the Britons possessed it, as we before said  And then the Picts obtained wives for themselves of the Scots, on this condition, that they should always choose their royal lineage on the woman's side which they have held ever since.  And then befell it in the course of years that the some of the Scots departed from Hibernia to  Britain, and conquered some portion of the land. And their leader was called Reoda. |

Table 5.4: The CP expletive *þa/ða* in (the beginning of) the Peterborough Chronicle

The instances of *þa* in the text of Table 5.4 are good examples of CP expletives. However, as in German (98), Old English appears to have two expletives in (99) and (100), from the OED. The first *Þa* is usually translated as a temporal adverb, but it has little lexical meaning; the second *þær*typically goes with an unaccusative verb.

(99) ***Þa***  *com* ***þær***  *ren and mycele flod and* ***þær*** *bleowun windas.*

EXPL came EXPL rain and much flood and EXPL blew winds

`Then, there came rain and floods and the winds blew hard.’ (OED, West Saxon Gospels, Corpus Cambr, Matthew vii. 25)

(100) ***Þa***  *com* ***þær***  *gan in to me heofencund Wisdom.*

EXPL came EXPL go in to me heavenly wisdom

`then came there into me heavenly wisdom.’ (OED, Alfred, Boethius iii. 1, Sedgefield p. 8)

Most of these are main clauses and some are corelatives, e.g. (100), if we add the preceding clause, as in (101).

(101) ***Þa***  *ic þa þis leoð, cwæð Boetius, geomriende asungen hæfde,*

Then I then this song, said Boethius, mournfully sung had

***Þa***  *com …*

then came …

`When I had mournfully sung this song, said Boethius, then came …’

As far as I know, these constructions have not been discussed in the literature before and that’s why I’ll give a number of instances, as in (102) to (116), mainly culled from the first 20 segments of the 77 segments of the electronic version of the DOE.

(102) ***Þa*** *wæron* ***þær*** *ðry cnihtas swiðe gelyfede on þone soðan god. Þa wæron gehatene …*

Then were there three boys very faithful in the true God. Those were called …

`There were three boys that believed in the true God who were called …’

(DOE, *Ælfric's Catholic Homilies II* Godden, 9.230)

(103) ***Þa*** *wæs* ***þær*** *gehende sum munuclif: and heora abbud wæs …*

then was there neighboring some monastic life, and their abbott was …

`There was some monastery in the neighborhood, and their abbott was.’

(DOE, *Ælfric's Catholic Homilies II,* Godden 94.61)

(104) ***Þa*** *æteowde* ***þær*** *Cristes encgel, and þone cniht arærde.*

then appeared there Christ’s angel, and the boy raised

`Then appeared Christ’s Angel and raised the boy.’ (DOE, Aelfric, Lives, Agnes, 201, Skeat I, 182)

(105) ***Þa*** *wæs* ***þær*** *sum læce on ðam geleaffullum heape, Cynefryð gehaten*

then was there some leech among that faithful group, Cynefrith named

`Then, there was a leech among the faithful band, called Cynefrith.’

(DOE, Lives, Æthelthryth, 61, Skeat I, 436)

(106) ***Þa*** *wæs* ***þær*** *an mycel burh on heora wege middan.*

Then was there a great town on their way midst

`Then there was a great town in the middle of their way.’

(DOE, Lives, Maccabees, 440, Skeat II, 94)

(107) ***Þa*** *wæs* ***þær*** *an mæden licgende on paralisyn lange gebrocod*

then was there a maiden lying in paralysis long afflicted

`Then, there was a maiden long suffering from paralysis.’

(DOE, Lives, Oswald, 213, Skeat II, 138)

(108) ***þa*** *com* ***þær*** *sum þearfa healf nacod him togeanes biddende georne*

then came there some poor half naked him towards praying earnestly

*þæt he him sumne clað sealde.*

that he him some cloth gave.

`A poor man came towards him asking him for some clothes.’

(DOE, Lives, Martin, 903, Skeat IV, 276)

(109) ***þa*** *com* ***þær*** *færlice yrnan an þearle wod cu*

then came there suddenly run a very mad cow

`Suddenly, a very mad cow came running.’ (DOE, Lives, Martin, 1039, Skeat IV, 284)

(110) ***þa*** *com* ***þær*** *micel meniu of manegum burgum.*

then came there great multitude from many cities

`A great multitude came from many cities.’ (DOE, Lives, Martin, 1441, Skeat IV, 310)

(111) ***Þa*** *com* ***þær*** *swilc leoht, swilce þær liget brude*

then came there such light such there lightning flashed

`Then such a light appeared as if lightning flashed.’ (DOE, Lives, Thomas, 226, Skeat IV, 412)

(112) ***Þa*** *stod* ***þær*** *an hreofla tohrorenum lichaman, atelic on hiwe, and hine gehælde Thomas*

then stood there a leper decayed body, terrible in appearance and him healed Thomas

`There stood a leper with decayed body, terrible in appearance, and Thomas helped him.’

(DOE, Lives, Thomas, 334, Skeat IV, 420)

(113) ***Þa*** *com* ***þæ****r betwux þam of Samarian byrig an wif to ðam wæterscipe*

EXPL came EXPL between them from S town a woman to the water

`There came a woman from the town of Samaria to the water.’ (DOE, Homilies, Pope, 288.11)

(114) ***þa*** *ætiwde* ***þær*** *sona gesewenlice Godes wuldor*

EXPL appeared EXPL soon visible God’s wonder

`Then, God’s wonder became visible.’ (DOE, Homilies, Pope, 641.246)

(115) ***Þa*** *wearð* ***þær*** *æteowod an atelic sceadu on sweartum hiwe*

EXPL became EXPL shown a terrible shadow of black hue

`There appeared a terrible, black shadow.’

(DOE, *Ælfric's Catholic Homilies II,* Godden 292.141-2)

(116) ***Þa*** *wearð* ***þær*** *ofslagen sum dæl þæs folces þe on fyrlene wæs fram Mathathian*

EXPL was EXPL slain some part that people REL on distance was from Mattathias

`Then, a part of the people were slain that were at a distance from Mattathias.’

(DOE, Lives, Maccabees, 236, Skeat II, 82)

Of the 67 such double expletive sequences I examined, only one is unergative, namely (117).

(117) ***Þa*** *spræc* ***þær*** *an Iudas wæs gehaten,*

then spoke there one Judas was called

`Then one spoke, who was called Judas.’ (DOE, Holy Rood 101, Morris)

So, CP and vP expletives occur simultaneously in Old English, as in German (98). A structure for these expletives is given in (118a), without an expanded CP or the presence of a TP. Recasting the CP in terms of an expanded CP provides the tree in (118b), where *Þa* is in the Top head. Note that the root phrases are not labeled (indicated through ?P) unless there are topic features shared but that the root phrase may not need labeling. Also note that v inherits features from C and can then label <phi, phi>.

(118) a. ?P b. ?P

ei ei

*Þa* CP *Þa* FinP

ei ei

C <phi, phi> Fin <phi, phi>

*com*  ei *com* ei

*þær* vP *þær* vP

ei ei

v VP v VP

<com> ei<com> ei

V DP V DP

<com> *ren and mycele flod* <com> …

`Much rain and floods came then.’

When V2 is lost, the initial CP expletive is also lost, as I’ll discuss in the next section. However, we see remnants of the other expletive, the vP-EXPL *ther* in e.g. (119) and (120), repeated from above. The initial adverbial and the verb are in the specifier of the CP and C, respectively.

(119) *Thus ben* ***ther*** *6 degrees of the zodiak on oo side*

`Thus, there are 6 degrees on the zodiac on the one side.’ (Chaucer, Astrolabe, 1.21)

(120) *vnder the cercle of Cancer, ben* ***ther*** *12 deuysiouns embelif*

`under the circle of Cancer, there are 12 oblique divisions.’ (Chaucer, Astrolabe, 1.20)

This presence of the vP expletive explains what looks like a lingering V2 word order in (119) and (120). It is V2 but not with a TP-expletive but with a vP-one. The TP expletives in section 4 could also be analyzed as vP ones.

In this section, I have given examples of double expletives, in the specifier of the CP and in the specifier of the vP. With the loss of V2, the former are lost, as argued by Richards & Biberauer (2005), and the latter are reanalyzed as moving to the specifier of the TP.

*5.3 Changes in expletives and Third Factors*

The appearance of CP and vP expletives makes sense because they have a pragmatic and semantic function, respectively. As for the pragmatic function of the CP expletive, van Kemenade (2009: 107) argues how *þa* and other demonstratives in Old English mark the area on their left as containing old information and the one on their right as containing new information and Haiman (1974) argues the same for V2: the verb differentiates old from new information. As for the semantic function of the vP expletive, it marks the (optional) locational theta role with a certain class of unaccusatives. A TP expletive, by contrast, only has a function in the syntax and isn’t independently motivated. Therefore, the possibility sketched in section 5 is preferable. In this subsection, I examine determinacy and labeling issues with these expletives and why the changes occur.

The root phrase in (118) may not have to be labeled (see chapter 6, section 5.1) and hence CP expletives are not problematic; vP ones are and, in Modern English, they move to become the specifier of the TP where they contribute features to label the <phi, phi> projection. In languages without a TP, like Old English, v inherits features from C and the node that dominates the vP expletive can be labeled as <phi, phi>. Determinacy is not an issue in T-less languages and hence the expletives aren’t. In stages with a TP, determinacy requires either the TP expletive to appear or the DP subject to move.

The changes that occur between Old English and Early Middle on the one hand and Late Middle English on the other are: a loss of V2 and a loss of the CP expletive *þa*, and the introduction of a new expletive *there* that moves to TP (originating, as I have argued in this section, from the optional vP expletive). What causes these changes? Los and van Kemenade (2018: 127) argue that “[i]n the course of Middle English, a number of developments conspire to break the system down: the loss of gender and the loss of V2, leading ultimately to a loss in specific reference of the *þ/s*-elements and a restructuring of discourse relations, with relative pronouns taking over the role of topic shifters.” This loss of pragmatic possibilities is repaired, according to Los (2009) by the new expletive and by the increased use of the passive and clefts. The question not resolved is what sets the pragmatic changes in motion that cause the loss of V2 and the CP expletive.

**6 Conclusion**

In this chapter, I have argued that obeying determinacy and not running into labeling paradoxes can result in different choices: a language can have V2 or it can have a TP. Due to determinacy, if there is a TP, Verb-second (V2), i.e. V to C, is not possible but TP expletives are. Conversely, if there is no TP, V2 is possible but TP expletives aren’t.

Older stages of English can be argued to lack a TP, just like Modern Dutch and German, and this enables both V2 and movement of the subject from the specifier of the vP to the specifier of the CP. It also makes the grammatical subject position and the expletive optional. Later stages of English introduce a TP, which enables expletives in the TP but bars V2. Chaucer’s complementary distribution between TP expletives in SV structures ((79) to (82)) and the lack thereof in V2 ones ((89) to (91)) is a clear example of the two possble choices. The loss of V2 and introduction of expletives has not been linked before and this offers a new perspective both on the data in English and in V2 languages and on the tension between the two third factor principles.

I have also argued that Old English has two expletives, a CP and vP one. The first one is lost when the information structure of the language changes and the second one stays but now moves to the specifier of the TP.

**Appendix**

It is generally assumed that the origin of the expletive is a locative. For instance, like Jespersen (1937: 139), Butler (1980: 277-284) assumes the origin of the existential to be the locative adverb (cf. also Lyons 1967). The existential use of *it* cannot, according to him, have "had a history parallel to the history of existential *there*" because it occurs rather late (p. 285). However, as seen in (50) above, other forms can be expletives as well. It is also puzzling that the expletive would have third person features. How could the deictic features of a locative grammaticalize into an expletive that agrees in person? For the above chapter, noting hinges on the origin but I just want to point out an alternative to the locative.

This alternative is that the expletive derives from the demonstrative pronouns *þara* and *þære*, through a process of grammaticalization in which the pronoun gradually loses features. The development of *that*, also a demonstrative, is expected to run parallel to that of *there*. There are texts where *þæt* and *þere* both appear as relatives, e.g. in the Otho version of Layamon. They later lose their number and person features as relatives as the following observation by Anklam (1908: 83) indicates for Old English: "þara þe kam trotz des pluralen þara im Relativsätze den Singular oder Plural nach sich haben" [`Even though þara is plural þare þe can have a singular or plural verb following it']. It means that *þara* was well suited to become an expletive since it lacked some number features. Stoelke (1916: 55) and Visser (1963: 88) cite examples where *þara þe* brings about singular agreement on the verb. Grossman (1906: 56ff) provides many similar Old English examples as well as a few examples where the verb is in the plural.

Richards and Biberauer (2005: 149-150) raise the point that vP-expletives, “like German *da* and English *there*, are often morphological locatives, whereas CP-expletives are not (and, instead, tend to be third-person pronominals)”. They argue that “the T-associate Agree relation would be blocked by a pronominal expletive (e.g. *it, es, það*) since these elements, as pronouns, have a full set of φ-features (person and number…). In order for T-associate Agree to obtain across Expl (and thus for the associate DP’s Case feature to be valued), the intervening expletive must therefore be ‘φ-transparent’”.

**Chapter 6**

**Adjunct Incorporation and avoiding Pair Merge**

**1 Introduction**

Language change represents a balance between needs of sparseness (economy) and of expressiveness (renewal). Adjuncts typically add more information on location, time, reason, etc., and are a means to renew material that has been lost to economy. Adjuncts are optional, are loosely connected to the main clause, and are derived using pair-merge in Chomsky (2000). They can become incorporated over time as arguments or as functional heads possibly because the pair-merge operation, relevant to adjuncts, is `costly’ for the computation and the language learner employs ways to avoid pair-merge.

In this chapter, I examine changes involving a number of adjuncts, those modifying an NP, aspectual adjuncts, temporal VP adjuncts, and various CP adjuncts in the hope of seeing if language change provides insight into whether we can see the effect of avoiding the operation pair-merge. I make a distinction between clearly pair-merged VP and NP adjuncts, on the one hand, and adjuncts positioned in the specifiers of higher functional categories, on the other. The pair-merged adjunct are reanalyzed as specifiers and the latter, as we’ve seen in chapter 2, undergo other changes.

The division between VP adjuncts, undergoing pair-merge, and CP ones, not undergoing pair-merge is reminiscent of the division by e.g. Truswell (2011) that adjuncts come in two kinds, modifying the event, i.e. situated as part of the vP/VP, and providing discourse-related information, i.e. as part of the CP. The former are more integrated into the clause than the latter, which fits with Haegeman’s (2006) insights about CP-adverbials being more independent from the main clause than VP-adverbials. This means that pair-merge correlates with more integrated adjuncts, which is surprising given that they have no fixed position. There is also no direction of change from more to less integrated or vice versa suggesting that, although pair-merge is to be avoided, the degree of dependence on another clause is not relevant to it.

The outline is as follows. In section 2, I provide a brief sketch of how adjuncts have been represented in current Minimalism, the structure of the different kinds of adjuncts, and the questions these raise. Section 3 studies changes in pair-merged NP modifying adjuncts and section 4 examines the changes from VP adjunct to specifier of an aspectual adjunct to a head. Section 5 looks at the change from VP adjunct to specifier of the CP and to C head. Section 6 discusses how incorporated or not subordinate clauses are and if there is a preference for tighter or looser connections. Section 7 shifts the attention to adjuncts that are reanalyzed as arguments and section 8 is a conclusion.

**2 Issues surrounding adjuncts**

In this chapter, I raise a number of questions regarding the current analysis of adjuncts. The reason adjuncts have defied a uniform treatment (e.g. Cinque 1999 versus Ernst 2002) is that they are very diverse. There are base generated and moved adjuncts, adjuncts in different layers, CP, TP, or VP, and more or less integrated ones. There are even major questions surrounding how we can determine their position and if they have moved or not.

The term adjunct is used to cover both the function of adverbial/modifier, the category of adverb, and the more traditional concept of disjunct. I will alternate between adjunct, adverbial, modifier, and adverb where relevant but will subsume disjunct under adjunct. After introducing pair-merge in the current Minimalist framework, the current section raises two issues relevant to adjuncts: (a) the different types of adjuncts and their respective positions in the clausal spine and (b) their relative integration into the clause.

I first turn to the theoretical issues adjuncts pose. As mentioned in chapter 1, Chomsky (2000: 133; 2004: 118) distinguishes between arguments (subjects and objects) and adjuncts in terms of unordered set-merge and ordered pair-merge, respectively. Because adjuncts are typically islands for extraction and are impervious to c-command, as shown in Lebeaux (1991), they appear invisible to normal operations: elements that c-command the pair-merged <a, {b,c}> continue to c-command the set-merged {b,c}, as indicated by the arrow in (1), but ignore the adjoined element (Chomsky 2004: 118-9).

(1) VP (=a, {b,c})

ei = invisible

VP (=b,c) AP/PP (=a)

ei

DP (=b) VP (=c)

Quoting Chomsky (2008: 146-147): “The adjunct-island subcase follows if an adjunct is not in the search domain of the probe. That in turn follows from the approach to adjuncts in Chomsky (2004), taking them to be entered into the derivation by pair-merge instead of set-merge to capture the fundamental asymmetry of adjunction.” Pair-merge is invoked for adverbials and modfiers because they are less integrated into a clause and are distinct from arguments in, for instance, not allowing reconstruction of the modifying RC in (2).

(2) [Which picture of Billi [that Johnj liked]] did he\*i/j buy? (Chomsky 2004: 117)

In (2), the DP that *Bill* is part of can be reconstructed to its original position (indicated by the index) and Condition C says it has to be free of the pronoun *he*, which is the case. The RC does not reconstruct and *John* can therefore refer back to *he.*

Pair-merged structures have to undergo the operation Simplification, for which a definition is provided in (3).

(3) **Simplification (SIMPL)**

“converts <α, β> to {α, β}” at Transfer to Spell-Out (Chomsky 2004: 118-120).

It is not immediately clear what the status of (3) is: is it a first, second, or third factor? Merge is a first factor principle and both set and pair-merge are part of merge. However, the operation in (3) translates structures like (1) during Transfer for interpretation at the interfaces and, for both the S-M and CI interfaces, it will be relevant to know whether a syntactic object is an adjunct or not. At the CI interface, the interpretation will differ and, at the SM interface, the prosody will (see e.g. Kruger 2017; 2019).

Several other questions arise with pair-merge. Is the operation only relevant for base generated adjuncts, as in Kidwai and Mathew (2005), or also for moved adjuncts, as in Richards (2009), i.e. is there both external and internal pair-merge? As we saw in chapter 4, topics can be viewed as part of the clausal spine, occupying the specifier of the Topic Phrase, or as adjoined (through pair-merge). The same choice is possible with adjuncts but, in chapter 4, I positioned TMA adjuncts in the specifiers of functional categories through set-merge. These adjuncts share semantic features with their heads, e.g. *probably* shares a mood feature with its M head (cf Cinque 1999: 128-9). The same is true for CP adjuncts: either they are incorporated as specifiers of functional heads, in the way of Rizzi (1997), or they are not really part of the core sentence and are attached in another way. One argument for integrating them as specifiers of specific functional categories is that, in some languages, the head position of these functional categories is overtly filled by a particle or by something that has moved into it (e.g. there is verb-movement to the Focus head in English *wh-*movement).

In sections 3, 4, and 5, I show that base generated VP and NP adjuncts are reanalyzed as higher adjuncts and that that may point towards an avoidance of pair-merge. If true, that means pair-merge applies to VP and NP adjuncts, i.e. to externally merged adjuncts. It is also known from the literature that adjuncts incorporate as arguments (both DPs and CPs, see Hale 1976 and Kiparsky 1995 for the latter) and I show this in section 7. Again, this holds for VP adjuncts, showing their avoidance of pair-merge. Let’s turn to this avoidance.

On the basis of certain changes involving adjuncts, van Gelderen (2019) argues that (4) is an Economy Principle, at work in the acquisition process when the child constructs their grammar. It incorporates (innovative) adjuncts more tightly but the preference for set-merge arises not from the actual type of merge but from the obligatory use of (3).

(4) **Adjunct Incorporation Principle (AIP)**

Use set-merge rather than pair-merge (van Gelderen 2019).

(4) is a principle of efficient computations: set-merge is simpler because the output does not have to undergo the operation SIMPL.

Labeling approaches have also been suggested to account for the special status of adjuncts, e.g. Goto (2015) argues that adjuncts are not labeled and that they are therefore islands. The need to avoid adjuncts would remain under this approach but the rationale would be different namely labeling requirements instead the need of avoiding pair-merge.

I’ll now turn to the different positions of adjuncts. If pair-merge is restricted to just base generated adjuncts, even those adjuncts come in many shapes and kinds, as the four adjuncts in (5a) show. There is the CP adverb *allegedly*, the TP adverb *often*, and the VP adverbials *with great enthusiasm* and *until evening*. In (5b), I have added the adjunct *there,* which is ambiguous between a temporal VP adverb modifying the sentence or a modifier of the NP *elephants*. This ambiguity will be relevant in section 3.

(5) a. Allegedly, they often fed those elephants with great enthusiasm until evening.

b. Allegedly, they often fed those elephants there with great enthusiasm until evening.

As mentioned, CP and TP adverbials are typically seen as occupying specific positions in the clausal hierarchy, whereas VP adverbials - sometimes called circumstantial adverbials - are generally regarded as adjoined inside the VP (Cinque 1999: 29). This difference is shown in (6a) for the adjuncts in (5a). It is also possible, but less frequently seen, to integrate some of the VP adverbials into the functional structure, as in (6b).

(6) a. CP b. … TP

ei ei

AP TP DP T’

Allegedly ei they ei

DP T’ T’ PP

they ei ei until evening

T ASP T ASPP

ei ei

AP ASP’ AP ASP’

often ei often ei

ASP VP ASP’ PP

ei 4 with enthusiasm

VP PP fed the elephants

ei until evening

VP PP

4 with enthusiasm

fed those elephants

Regarding VP adjuncts, not all can be connected to a functional category, as is the case in (6b). For instance, locational adjuncts are definitely inside the VP. For PP adjuncts that are connected to manner and time, I remain agnostic as to which of the two analyses presented in (6) is more appropriate. That makes VP (and NP) adjuncts the only elements to be pair-merged, which makes them intransparent to syntactic operations like extraction.

The NP adjunct *there* in (5b) has a pair-merged structure, as in (7).

(7) DP

ei

D NP

Those ei

NP AP

elephants there

If there is a distinction between VP and NP adjuncts, which do not have a specific position in the structure, and TP and CP ones, which occupy specifiers, can this be noticed in how much the adjunct is integrated syntactically? Quirk et al’s criteria to distinguish between adjuncts (modifying the event) and disjuncts (higher level modification) will be helpful. Quirk et al (1985: 52, 813, 1070-1) make a distinction between adjuncts and disjuncts in terms of being part of the sentence or being superordinate to it, respectively. For instance, adjuncts can be questioned using `why’ in (8) and can be clefted, as in (9).

(8) a. She left because she was cold.

b. Why did she leave? Because she was cold.

(9) It was because she was cold that she left.

Disjuncts, providing the reason for my uttering the sentence not for what caused the event, as in (10a), cannot be questioned or clefted, as the incongruous answers in (10b) and (11) show.

(10) a. She left, because I was watching her.

b. Why did she leave? %Because I was watching her.

(11) %It was because I was watching her that she left.

Truswell (2007; 2011) divides clausal adjuncts into those modifying the event and those providing discourse information and these are roughly equivalent to the notions of adjunct and disjunct. The former can be extracted from whereas the latter are clear islands. Similarly, Haegeman (2003; 2006; 2012; etc) argues that VP-adverbial clauses, her central adverbials, are more integrated into the event structure of the main clause than CP-adverbial clauses, her peripheral ones. The CP-adverbials show more characteristics of main clauses, e.g. having an independent mood and a split CP, as in (12) and (13), respectively. They are more like insubordinate clauses, to be discussed in section 6.

(12) While his support for women priests **might** label him a liberal, this would be a misleading way to represent him. (Haegeman 2006: 29)

(13) While **earlier** his support for women priests might have labeled him a liberal, this would no longer be the case now.

In contrast, VP-adverbials do not allow modals or topics, as (14) and (15) show, and are therefore more dependent on the main clause, i.e. selected by it with less CP-structure.

(14) a. \*When he **may** have been president, he rewrote history.

b. When he was president, he rewrote history.

(15) a. \*While **this paper** I was revising, I thought of another argument.

b. While I was revising this paper, I thought of another argument.

Because VP-adverbials are more integrated, extraction is easier, as shown by Truswell. Thus, (16) is a temporal VP-adjunct and is not an island for extraction.

(16) a. This is **the watch** that I got upset when I lost. (Truswell 2011: 175, fn.1)

b. This is **the watch** that I got upset CP [when I lost <this watch>].

This issue of main clause dependence which differentiates between event and discourse modifying adjuncts will be relevant especially in sections 5 and 6.

In this section, I have discussed the difference assumed to exist between VP adjuncts that use pair-merge and adjuncts in specifier positions that are set-merged. The analysis of adjuncts using pair-merge needs an additional step, e.g. the operation SIMPL. Because of the added complexity, pair-merged objects undergo changes which I turn to in the remainder of the chapter. Pair-merge only applies to base generated adjuncts that are adjoined to the VP and NP, i.e. to non-agreeing adjuncts. Agreeing adjuncts, i.e. those in the specifiers of functional categories in the CP and TP layers, are not pair-merged. As for the integration of adjuncts into the clausal structure, VP adjuncts seem to be integrated the most tightly.

**3 Adjuncts as part of the DP**

In this section, I show that locational adjuncts can become reanalyzed as specifiers of a DP, where they provide deictic features to the DP, and I argue that the AIP in (4) is the underlying reason for this change. As we’ve seen in chapter 2 (section 5), specifiers in the DP can also become heads and this additional change can be tied to labeling pressures caused by the third factor principle Minimal Search.

As mentioned in chapter 2, Greenberg (1978) describes a cycle where demonstratives become articles (stage I) that in turn become non-generic markers (stage II) and then noun class markers (stage III) before finally disappearing. Greenberg emphasizes that “demonstratives are being constantly replaced by new demonstratives usually formed by older ones by the addition of new deictic elements, etc” (Greenberg 1978: 77). As in the case of other cycles, it is not clear what starts this cycle, refered to as the definiteness cycle by van Gelderen (2007), a weakened deictic D(P) or a pragmatic need for extra emphasis (see e.g. Vindenes 2018; Ordóñez, Bernstein, and Roca 2019). Greenberg's examples come from languages in the Niger-Congo family, and from Semitic and Indo-European. Here, I will just use examples from the latter family.

The structural changes involved in the demonstrative cycle are shown in (17) using English words for simplicity. As just mentioned, it is not clear what the chronological order of the following changes in that cycle is: the D head will be reanalyzed as noun class-marker (e.g. in French (18) where nouns have to appear with this marker), the demonstrative in the specifier of the DP will reanalyze as the D head (seen in chapter 2), and the NP adjunct will do so as the specifier of the DP (as in e.g. Afrikaans (19)), thereby renewing the deictic features.

(17) DP

ei

*that* D'

[i-loc] ei

D NP

reanalysis *the* ei

as head [u-F] NP AP

(cf. Ch 4) *man* *there* renanalysis

reanalysis [loc] as grammatical category

as n-class marker in the DP

(18) *Je pratique le tennis, le badminton, le squash, la natation.* French

`I play tennis, badminton, squash, and swimming.’

(19) ***Hierdie*** *plaatjie laat jou 'n gedetaileer boom van* ***hierdie*** *taal familie sien.* Afrikaans

This picture lets you a detailed tree of this language family see

`This picture lets you see a detailed family tree of this language family.’

(<http://home.unilang.org/main/families.php?l=af>)

In this section, I will mostly focus on the incorporation of the post-nominal adjunct, as in Afrikaans (13). When a demonstrative is renewed, it is often done through a locative adverb that modifies the head noun, as in English (20), where the proximal adverb is shown renewing the proximal demonstrative, and in Dutch (21) and French (22), where the distal adverbs and demonstratives are provided (cf. Brugè 1996; Vindenes 2018). So, both proximal and distal demonstratives are renewed by the relevant adverbs.

(20) the investigation is very much active an going on and zeroing in on **this man here**, Esteban Santiago. (COCA Spoken 2017)

(21) ***die man daar*** is mijn vader Dutch

that man there is my father

`That man there is my father.’ (book title)

(22) *mais ma femme elle vivait à* ***ce moment-là*** *encore* French

but my wife she lived at that moment-DEM still

`but my wife was still alive at that moment.’ (CdES corpus)

The deictic features in (20) to (22) are renewed in adjuncts that modify the noun through pair-merge, as in (23a), adapted from (17), where the deictic features of the demonstrative have already bleached. The change to a more integrated DP is shown in (23b).

(23) a. DP > b. DP

ei ei

D NP *There* D’

*that* ei [loc] ei

[u-phi] NP AP D NP

*man* *there* *that man*

[i-3S] [loc] [u-phi] [i-3S]

How does the adjunct in (23a) become reanalyzed as the specifier of the DP in (23b)? There are in fact ambiguous constructions where the adjunct is a sentential locative, as in (24), and this could lead the way for the adjunct to become reanalyzed as the specifier of the DP, as may already have happened in (25). These ambiguous structures are not infrequent in Dutch, for instance.

(24) *Ik dacht al wie is* ***hier die man*** *met zoveel ervaring.* Dutch

I thought PRT who is here that man with so much experience

`I was thinking who is that man with so much experience here.’

(https://www.onemorething.nl › ... › Afreageerdraadje)

(25) *Kijk,* ***hier die man*** *die van die flat afgesprongen is. Hoe zat that* Dutch

Look, here that man who from that apartment jumped has. How sat that

`Look, the man who jumped from that apartment. How did that go?’

(<https://www.toneeluitgeverijvink.nl/inkijkexemplaar.php?id=26192&file=26192%20Nachtvorst%20in%20Juni-webversie.pdf>)

English has an equivalent construction to (24), as in (26) and (27), where *here* is a sentential locative but at some point could be reanalyzed as a specifier for the DP. With the distal, there are also instances, as (28) shows.

(26) Well, there's a chance **here this thing** ain't running again. (COCA 2017 TV)

(27) By the time Beck gets back **here this thing** will be over and done with. (COCA 2008 TV)

(28) Yeah. throw it out **there that way**. (COCA 2015)

Thus, (Standard) Dutch and English show incipient stages of change but, as mentioned, Afrikaans (19) and (29) show that the deictic adverb, both proximal and distal, modifying the entire DP is now part of the DP.

(29) ***Daardie teenstrydighede*** *was egter nie soseer in die man Bram Fisher nie* Afrikaans

There.those contradictions were however NEG so.much in the man Bram Fisher NEG

`Those contradictions were however not so much in the man Bram Fisher not (but in ...)’ (Mandela speech, 1997, <http://www.anc.org.za/ancdocs/history/mandela/1997/sp971128.html>)

Other varieties of Germanic also show such incorporation, as (30) attests from German. Dutch and Belgian varieties show the same (cf. De Bont 1962; Pauwels 1959, Raith 1993), as in (31).

(30) ***Hier die*** */hi:di:/ Leute kann man leiden,* German variety (Saarbrücken)

Here that people can one guide

*aber* ***da denen*** *traut man nicht über den Weg*

but there those trusts one not across the road

`One can guide the people over here but over there one doesn’t trust them to cross the road.’

(Raith 1993: 282)

(31) ***Hier die*** *vrouw zal ons wel de weg wijzen* Dutch variety (Aarschots)

here that woman will us PRT the direction show

`This woman will show us the right direction.’ (Pauwels 1959: 1)

What is the trigger for the change from adjunct to specifier? Raidt (1993: 285) writes that the Afrikaans forms in (19) and (29) “emerge suddenly around 1880 without any noticeable period of transition.” So, suddenly, the more Dutch-like *dese* and *die* are replaced by *hierdie* and *daardie*, respectively and and *die* becomes restricted to the article. I argue that avoidance of pair-merge make a fast reanalysis possible. In Dutch and English, there is no evidence of the change yet.

In section 3, I have examined the renewal of the deictic features of the DP by the reanalysis of an adverb from an NP adjoined position to one as the specifier of a DP in varieties of Germanic. Given the AIP, the reanalysis is expected since pair-merge of the adverb *there* with the NP in (17) and (23a) is not economical. I have also provided a bridge-context so that a post-nominal element can be reanalyzed as a pre-nominal specifier.

**4 Towards ASP(P)**

I now turn to adverbials expressing aspectual information and examine two cases. One involves the perfective adverb *already* changing from a VP adjunct to a specifier in a Cinque-style functional category. This change can be seen as due to the AIP. The second change involves the incorporation of an adverb from the specifier position of a functional category to a head in the same functional category and then to an aspectual affix. The reason for this second change is similar to what has been discussed in chapter 2, namely, it can be seen as due to labeling requirements. Both types of change occur in a number of languages but will be exemplified through English, where some of the changes are incipient. The two changes can be schematized as in (32).

(32) ASPP

ei

ASP’

ei (2) (1)

VP ASP

ei

VP AP

As for the change from adjoined to positioned in a specifier, (33) and (34) are the first recorded uses of *already* as an adverb in the OED and MED. These constructions are ambiguous between containing a VP adverb and a TP adverb, which the translation reflects.

(33) *for* ***al redie*** *þare huy were.*

because all ready there they were

`Because they were all prepared there/there already.’

(MED c1300 St. Faith (Laud) l. 47, Horstmann Early S.-Eng. Legendary 83)

(34) *Wanne þay come to þe castel ȝate … þe porter* ***alredi*** *was þer-ate.*

`When they came to the castle gate … the guardian was all prepared there/there already.’

(OED, c1380 Sir Ferumbras l. 1117)

The earlier use of *already* in the OED has the meaning of `completely prepared’. So, the reanalysis proceeds from VP-internal in (35a) to part of the ASPP, as in (35b).

(35) a. VP (= (33)) > b. ASPP

ei ei

*huy* VP ASP’ AP (or specifier-initial)

ei ei 4

VP AP ASP VP *already*

ei 4 ei `by now’

V PP *al redie They* V’

*were* *þare* `all prepared’ ei

V PP

*were there*

In (35a), the AP *al redie* is also in principle ambiguous between adjectival predicate and adverb. I have represented only the latter use. In (35b), the adverb is no longer structurally ambiguous. The reason for the reanalysis, I would argue, is that (35a) uses pair-merge and (35b) set-merge.

A second type of aspectual change can be found in the changes from specifier to aspectual head. Cross-linguistically, perfective aspect goes through a cycle in which an aspectual prefix is reinforced and later replaced by an adverb or adposition stressing the telicity of the event. For instance, Lehmann (1993: 97) and Diessel (1999: 142) argue that aspectual preverbs derive from relational adverbs and adverbial demonstratives, e.g. *hin/her* `there/here’ in German *hinweisen* `point out’, *hinfahren* `drive to’, and *herbringen* `bring over’. Miller (1993: 118-124) provides instances of preposition incorporation in Ancient Greek and Latin and Booij and van Marle (2003) bring together a number of studies on many languages that show a development from adverb to preverb. These cycles from adverb to aspectual head occur in Indo-European, but also in the Amazonian language Nadëb (Weir 1986) and in Athabascan languages such as Dëne Sųłiné/Chipewyan (Li 1967). This happens as phrasal adverbs replace earlier affixes and themselves then become heads.

Old English shows stages of this cycle and follows its Germanic ancestors in having separable and inseparable prefixes on verbs to express aspectual nuances, as in (36). Later stages use adverbs, as in (37), which presumably are in the specifiers of aspectual phrases.

(36) *leofes mannes lic eall* ***for****swealg.*

dear man’s body all up.swallowed

‘He swallowed up the entire body.’ (*Beowulf* 2080)

(37) *&* ***duste*** *him* ***dun*** *riht to þer eorðe*

and threw him down right to the ground

‘and threw him right down to the ground’. (Elenbaas 2007: 219, St. Margarete 74.308)

Elenbaas (2007, chapter 4) argues that the adverb in (37) is phrasal in nature and that this situation continues into Modern English because the particles can be modified, as in (37), coordinated, and preposed. There are particles that combine with the verb, as in (38), from (late) Old English on; they combine with the verb and precede the object.

(38) *Hi … clumben upp to þe stepel, brohton* ***dune*** *þet hæcce þe þær wæs behid.*

`They climbed up to the steple, brought down that ..

(OED, *Peterborough Chronicle* 1170)

The two possibilities, (37) and (38), continue in Modern English, as in (39a) and (39b). The adverb *back* is a phrase in (31a) because it can be modified by a degree adverb, which it cannot in (39b).

(39) a. They received the book right back. = phrase

b. They received (\*right) back the book = head

Trees for these are provided in (40ab), respectively, with verb-movement to ASP in the case of (40b).

(40)

a. ASPP b. ASPP

ei ei

ASPP AP ASP VP

ei *(right) back* *back* ei

ASP VP V DP

ei *received the book*

V DP

*received the book*

The adverb in (40a) is not problematic for the AIC if the TMA categories are integrated in a Cinque-style tree. As shown for other structures in chapter 2, the structure is, however, problematic for the Labeling Algorithm because, when the AP is merged, there is always another phrase as its sister. The reanalysis of the AP as a perfective ASP head, as in (40b), is therefore expected.

If (36) and (39b) are more economical from a labeling point of view, why do we still have (39a) in English? It may be that, in order to go from adverb in the specifier position to the functional head, the category has to be salient in the language which perfective is not in Modern English.

In short, in this section, I have examined two cases of aspectual renewal, one where a VP adjunct is reanalyzed as specifier in a functional complex and another where it becomes a head. The former is due to the AIC and the latter to Minimal Search relevant to the LA.

**5 PP Adjuncts to C(P)**

Lehmann (1988), Givón (1991), Hopper and Traugott (2003), and various others have shown that subordinate clauses originate from independent clauses. In this section, I look at two changes that convert a PP into a C and, in the process, transform an independent clause into a subordinate one (most of the data are adapted from van Gelderen 2009). I then account for the changes using principles of efficient computation, namely the AIP and Minimal Search.

The adjunct incorporation discussed in this section involves adjuncts of place, time, purpose, and cause that initially function as VP adverbs. In this function, they can be topicalized before the verb in V2 constructions. Having been topicalized to the front of the clause, they are candidates to be reanalyzed as part of the CP domain, after which they eventually start to link one clause to another. Not only are they themselves then more incorporated, the clause in which they appear is too. In section 6, I return to some of the cases of clause incorporation discussed in the current section, namely the ones where a sentential adjunct, such as a *for*-clause, functions as both a VP and CP adjunct in turn.

*5.1* Changing *after*

The preposition and adverb *after* in Old English, according to the OED, indicate place, order, or time, as in (41) and (42), and the preposition also has meanings such as `following with an intent’ and `according to’, as in (43).

(41) *Fand þa ðær inne æþelinga gedriht swefan* ***æfter symble***

found then there in noble company sleeping after feast

`He found therein a company of nobles sleeping after their feast.' (*Beowulf* 118-9)

(42) *hu hit Hringdene* ***æfter beorþege*** *gebun hæfdon*

how it Ring-Danes after drinking lived had

`how the Ring-Danes were doing after their drinking.' (*Beowulf* 116-7)

(43) *He hæfde twegene sunu Ermenred & Ercenberht. & þer Ercenberht rixode* ***æfter his fæder.***

`He had two sons Ermenred and Ercenberht and Ercenberht ruled there after/following his father.'

(*Chronicle A*, entry for the year 640, Thorpe edition)

As far as the syntax of these constructions is concerned, in early texts such as *Beowulf*, *after* is mainly used as a preposition in a PP situated inside the VP, as in (41) and (41). Of the sixty-five instances of *after* in *Beowulf*, only two occur inside a fronted PP, as in (44). This is typical for Old English use.

(44) ***Æfter*** *þæm wordum Wedergeata leod efste mid elne*

after those words Weather.Geats chief hastened with courage

`After those words the Weather-Geats chief hastened with courage.’

(*Beowulf* 1492-4)

In later (prose) texts, the PPs are fronted more often, as in (45) to (47), and the object is a demonstrative, as in (48) and (49). This is typical for languages like Old English that use the initial position for pragmatic linking, as mentioned in chapter 5. These clauses are still independent, however, so that the PP has no subordinating function.

(45) *Her Leo se æþela papa & se halga forþferde, &* ***æfter him*** *Stephanus feng to rice.*

Here Leo the noble pope and the holy died and after him Stephen started to rule

`In this year, Leo the noble and holy pope died and after him, Stephen started to rule.'

(Chronicle A, anno 814 [816])

(46) *& þær wearþ Heahmund biscep ofslægen, & fela godra monna; &* ***æfter þissum gefeohte*** *cuom micel sumorlida.*

`And there was Bishop H. killed and many good men, and after this fight came many summer troops.' (Chronicle A, anno 871)

(47) *Her forðferde Wulfstan diacon on Cilda mæssedæge 7* ***æfter þon*** *forðferde Gyric mæsse preost.*

`In this year died Wulfstan deacon ... and after that died Gyric the mass-priest.' (Chronicle A, entry for the year 963)

(48) *Þa* ***æfter þam*** *for se here eall up.*

Then after that went that army all up

'Then after that went the army all there.' (Chronicle A, entry for the year 918)

(49) ***Æfter þysan*** *com Thomas to Cantwarebyri.*

after this came Thomas to Canterbury

`After this, Thomas came to Canterbury.'

(Chronicle A, entry for the year 1070)

In Table 6.1, figures are given for three stages of Old English, (a) the stage with a PP predominantly inside the VP, represented by Beowulf, (b) the stage with some topicalization, represented by the early version of *The Anglo Saxon Chronicle* up to 891, and (c) the stage with frequent topicalization where the adverb’s VP-origin is less obvious to the language learner, represented by the same chronicle in entries after 892.

|  |
| --- |
| Beowulf Chron A <892 Chron A >892  Topicalization 2/65 = 3% 7/26 = 27% 12/22 = 54.5%  Dem objects 2/65 = 3% 2/26 = 7.7% 17/22 = 77% |

Table 6.1. Numbers and percentages of demonstrative objects (Dem) with *after* and fronting.

Before 892, *after* is followed by a noun or pronoun and rarely (7.7%) by a demonstrative and the PP is preposed in 27% of the cases. In the later Chronicle (i.e. after 892), many of the objects of *after* are demonstratives, as in (108) and (109), namely 17 out of 22 (= 77%). The use of a demonstrative object indicates that the PP is starting to be seen as an adverb linking one sentence to another. This is confirmed by the frequent topicalization of the PP (12 out of 22 = 54.5%).

Topicalization makes it possible for the PP to ultimately be reanalyzed as a complementizer. In (50), the status of the PP is ambiguous. It could be a temporal adverb or a complex conjunction introducing a subordinate clause, as indicated in the translation. The same text has subordinate clauses headed by *æfter*, a demonstrative, and a complementizer, as in (51).

(50) ***Æfter þæm*** *Iulius for to Rome & bæd*

after that Julius went to Rome and asked

*þæt him mon brohte þone triumphan ongean.*

that him man brought that triumph meet

`After that/After Julius went to Rome, he asked that that triumph would be brought to meet him.’

(Alfred, Orosius, 126.11-2)

(51) ***Æfter þæm þe*** *he hie oferwunnen hæfde,*

after that C he them conquered had

*he for on Bretanie þæt iglond.*

he went to Britain the island

`After he had conquered them, he went to the island of Britain.’ (Alfred, Orosius, 126.3-4)

The first instances of reanalysis as part of the CP use include (51), from around 900, (52) from around 1000, and (53) and (54), from around 1200. These instances of *after* are not complementizers but PPs in the specifier of the CP, and indicate time. A structure is provided in (55) where a complementizer follows the PP.

(52) *Witodlice* ***æfter þam þe*** *ic of deaþe arise ic cume to eow on galilee*

Surely after that C I of death arise I come to you in Galilee

`Surely after I rise from the dead, I will come to Galilea.'

(OED, *West Saxon Gospel* Matthew 26.32 Hatton Ms, Skeat’s edition)

(53) *for* ***efter þan þet*** *þe mon bið dead me leið þene licome in þere þruh*

Because after that C the man is dead men lay the body in the tomb

`After the man is dead, they put the body in the tomb.' (*Lambeth Homilies* 51: 4-5, Morris edition)

(54) ***Affterr þatt tatt*** *he wass dæd Ne toc 3ho wiþþ nan oþerr*

after that C he was dead NEG took she with no other

`after he was dead, she didn't take another (man).' (OED, *Ormulum* 7667, Holt edition)

(55) CP

wp

PP C'

ei ei

P D C TP

after þæm þæt/þe

(50) and (51) occur very close to each other in the manuscript and are clearly variants. The same variation occurs in Middle English. For instance, in addition to (53) from the Lambeth Homilies (West Midlands, early thirteenth century), there are other constructions, such as (56) and (57), which represent earlier stages.

(56) ***Efter þon*** *he him sceawede þe sea of helle and innan þan sea weren …*

`After that he showed him the sea of hell and in that sea were.’

(*Lambeth Homilies* 43.2, Morris edition)

(57) *Sunnendei fond noe lond* ***efter þet*** *ure drihten hefde þet folc adreint.*

`On Sunday, Noah found land after our lord had drowned the people.’

(*Lambeth Homilies* 139-141, Morris edition)

In (56), the PP is clearly preposed and is not conjoining the sentence to another. The orientation of the clause, as in Diessel (2019), is backwards looking: it is refering to something that has happened. In (57), it is only possible to analyze the PP as a conjunction because the drowning occurs before finding the land. So, *after* loses its backward-looking orientation. The order of the two clauses doesn’t follow the chronological order of events.

The same shift from less embedded to more integrated can be seen between the different stages of the Gospel glosses. The (earlier) Lindisfarne gloss renders the relevant part of (52) as (58), without the complementizer.

(58) ***æfter ðon*** *uutedlice ic eft-ariso ic forlioro l iowih in galileam*

after that surely I again-rise I come\_before you in Galilee

`after that surely I arise again and come before you in Galilee.'

(*Lindisfarne Gospel*, Matthew 26. 32)

The glosses are not based on the Latin which lacks the complementizer but which the later West-Saxon version puts in. The complementizer-less stage represents an earlier variety. This is confirmed by data in Rissanen (2007: 61; 64) who examines the Helsinki Corpus Old English parts and finds an increase in complementizers following the PP. The two clauses in (58) are more independent of each other than those in (52) and the PP could be a regular adverb.

So far, the development shows that the PP with *after* is fronted and that its object is often a demonstrative, not a full noun. The demonstratives are still inflected for case (sometimes dative, other times accusative) which means the PP is still adverbial. The second stage, we have seen, is for a complementizer to follow the PP. This stage involves a change in the temporal orientation of the clause, from backwards looking to forwards looking.

The third stage, which we turn to now, is for the preposition to be reanalyzed as a complementizer. The first use of *after* as a clear head in the OED is in the Late Middle English (59). This is attributed to Wycliff and, as (59) also shows, *after that* and *after* are variants.

(59) ***After þat*** *Crist had ordeynid his apostlis, and sent hem to preche;* ***after*** *he assignid seuenty and two disciplis, and sent hem …*

`After Christ had ordained his apostles and sent them to preach; after he appointed 72 disciples and sent them …’ (MED, c1360 Wyclif *Apology for Lollard Doctrines V*)

The late Middle English period is indeed one with *after* as a frequent complementizer, as (60) and (61) show, from the middle of the fifteenth century. This set of letters also shows an occasional *that*, as in (62) and (63).

(60) ***after*** *I met wyth hym in þe strett and spak wyth hym*

`After I met him in the street and spoke with him …’ (1464, *Paston Letters* 119, Davis p. 204)

(61) *and* ***after*** *he had taried there a while he toke a promise*

`and after he had stayed there a while, he took a promise.’ (1480, *Paston Letters* 112, Davis p. 193)

(62) *Also Will, …, told me þat he,* ***after þat*** *ye told hym of þis matier lyke as ye wr[i]te, he comuned with Maister Will Swan, and …*

`Also, Will told me that he, after you told him of this matter as you write, he communicated with Master Will Swan, and.’ (1425, *Paston Letters* 3, Davis p. 5)

(63) *Plesse it 3ow to wett þat* ***after þat*** *I harde say þat þe parson of Blowfelde wasse com to town I went to hym to hys jn* …

`May it please you to know that, after I heard say that the parson of Blowfield had come to town, I went to him in his inn.’ (1464, *Paston Letters* 119, Davis p. 203)

In conclusion, the reanalysis of *after* from P to Cis triggered by a frequent preposing of the PP which plays a clause-connecting role, as in (122) and (123). The complete changes are indicated in Table 6.2.

|  |
| --- |
| a. PP PP pre 900 - present  b. PP C 900 - 1600  c. C 1360 - present |

Table 6.2. Renalyses involving *after.*

The development of *after* shows that, after an initial period of functioning both as VP adverb and sentence connector, the PP headed by *after* is reanalyzed as part of the CP and then as a temporal complementizer in the head C.

The position of the clause introduced by *after* changes from following the main clause, as in (57), to preceeding it, as in (60) and (61), but it always remains a VP-adjunct, as evidenced by the impossibility of modals and topicalization inside the clause, as shown in (64) and (65) for Modern English.

(64) a. \*After he **may** have left, she arrived.

b. After he had left, she arrived.

(65) a. \*After that day he left, she arrived

b. After he left that day, she arrived.

In this section, I have shown that an adjunct PP headed by *after* topicalizes from its VP-internal position to the specifier of the CP. In a V2 language, this preposing (especially with demonstratives) occurs for textual cohesion, as seen in the previous chapter (see also Los 2009). Topicalization could be aided by the AIP: children who encounter a preposed adjunct will analyze it in the specifier of the CP rather than as moved into that position from a pair-merged earlier position. In addition, if root CPs require no labeling (as argued by Ott 2012; Blümel 2017; Bošković 2018), this position is not one where features have to be shared. Subsequently, the PP reanalyzes as a head because the demonstrative is seen as part of the C element. This is due to labeling needs, similar to those encountered in chapter 2. The adjunct as a whole continues to function as VP adjunct.

*5.2 Changing* for *and variants*

As is well known, the earliest use in English of *for* is as preposition of location, and later as a complementizer expressing purpose and cause. In early Old English, e.g., *Beowulf’s* (66), the locational meaning can be observed. There is also an early temporal meaning for *for(e)*, e.g., in (67), but this is infrequent. More frequent, already at that point, is the use of *for(e)* as a reason or cause marker, as in (68).

(66) *hlynode* ***for hlawe***

made.noise before mound

`It made noise before/around the gravehill.' (*Beowulf* 1120).

(67) ***for long*** *in asca l in cilic & in asca hreownisse dydon l worhton.*

for long in ashes and in sackcloth and penitence did and made

`They would have repented long ago in sackcloth and ashes.’

(Lindisfarne Glosses, Matthew 11.21, Skeat edition)

(68) *wen ic þæt ge* ***for wlenco*** *nalles for wræcsiðum. ac* ***for higeþrymmum*** *Hroðgar sohton.*

expect I that you for daring not for misery/exile but for greatness-of-heart Hrothgar sought

'I expect you were seeking Hrothgar because of your daring and greatness of heart rather than because of being exiled.' (*Beowulf* 338-9)

The purpose meaning is often seen as predecessor of the cause meaning (Heine, Claudi, & Hünnemeyer 1991: 157) but this meaning is already present in (69). Note that, the PP is preposed to initial position.

(69) ***for*** *werefyhtum ... ond* ***for*** *arstafum usic sohtest*

for fighting and for support us sought

`You wanted us to help fight.' (*Beowulf* 457-8)

In later Old English, e.g., the *Peterborough Chronicle’s* (70), *for* is used as a preposition of causation, but no longer as a spatial preposition, an indication of further grammaticalization (Heine, Claudi, & Hünnemeyer 1991: 156). The passage from which (70) is taken is a twelfth century addition to the entry for the year 675 of the chronicle.

(70) *ouþer* ***for untrumnisse*** *ouþer* ***for lauerdes neode*** *ouþer* ***for haueleste*** *ouþer* ***for hwilces cinnes oþer neod*** *he ne muge þær cumon*

`either from infirmity or from his lord's need or from lack of means or from need of any other kind he cannot go there.' (*Peterborough Chronicle*, anno 675)

As with *after*, constructions in which the PP headed by *for* is topicalized, as in (132) and (133), are very relevant to the claim that movement precedes the grammaticalization of the P as a C head is. Topicalization continues into Middle English, as in (71) and (72).

(71) ***for*** *mine londe 7* ***for*** *mine feo. mine eorles fulle to mine cneo.*

`for my land and for my property my earls fell to my knees.’ (Layamon, Caligula

1733-4)

(72)***For*** *þan weorldes scome;* ***& for*** *þan muchele grome. þat Dardanisc*

for the wordly shame and for the great blame that Dardanian

*kun. þe we beoð of icomene. woneð in þisse londe … heo beoð to-gadere icumene*

tribes REL we are from come live in this land …. they are together come

`They have come together because of the worldly shame and great blame which our ancesters the Dardanian tribes live in.’ (Layamon, Caligula 226-230)

According to van Dam (1957: 6), this fronting occurs regularly in Old English. Once *for* is ambiguous between being part of a fronted PP and being base generated in the CP, the language learner ends up reanalyzing the P(P) as C. In Old and Middle English, *forðæm* and its variants also function as `because', as in (73). This shows that what was originally an entire PP is functioning as C.

(73) *Theodorus archiepiscopus hine gehalgode on Eoferwic þam forman Eastordæge to biscope to Hagustaldesham.* ***forþam*** *Trumbriht wæs adon of þam biscopdome.*

`Archbishop Theodorus hallowed him at York on easter to bishop of Hexham, because Trumbyrht had been deprived of his biscopric.' (*Peterborough Chronicle,* anno 685)

Table 6.3 shows the early and later situation. Because *for* is not frequent in the Chronicle I used with *after,* I have used the *Peterborough Chronicle* for the later stage. Different from the situation with *after* (cf. Table 6.1) is that fronting and demonstrative objects already occur in Beowulf; the use as complementizer is more advanced in later Old English with *for* in comparison to *after.*

|  |
| --- |
| *Beowulf Peterborough Chronicle*  Dem objects and  *forðan*  16/54 =30% 67/150 =45%  Fronting 18/54 =33% 80/150 =53% ­­­­­­­­­­­­­  Total *for(ðan)* as PP54 150  C 0 16  Total *for(ðan)* 54 166 |

Table 6.3. Numbers and percentages of demonstrative objects (Dem) with *for* and fronting.

The earliest instance of *for* as a finite complementizer in English seems to be in the *Peterborough Chronicle* and is from the entry for the year 1135, as in (74). There are two other examples from the entry for 1135, given in (75) and (76). Note that (74) is a CP adverbial (with a topicalized *þæt ilc gær*) and (75) and (76) are VP adverbials; I come back to this observation in the next section.

(74) *sua dide* ***for*** *þæt ilc gær warth þe king ded*

so did for that same year was the king dead

‘And so it (a great thing) did because in that same year the king died.’

(*Peterborough Chronicle*, 1135, 6)

(75) *Þa þestre sona þas landes,* ***for*** *æuric man sone ræuede oþer þe mihte*

then dark(ened) soon the land, because every man soon robbed another that could

`Then, there soon was tribulation in the land, because everyone that could robbed someone else.' (*Peterborough Chronicle*, 1135, 8)

(76) *On þis kinges time wes al unfrið & yfel & ræflac,*

In this king’s time was all strife, evil, and …

***for*** *agenes him risen sona þa rice men þe wæron swikes*

because against him rose the powerful men who were traitors.

(*Peterborough Chronicle*, 1135, 16-18)

This locates the first use of complementizer *for* with the second scribe, who starts adding information from 1132 on. Between 1135 and 1154, the complementizer use increases dramatically compared to the period before 1135, as (77) to (83) show for the next year that there is an entry. These are both CP and VP adjuncts providing a speaker perspective or a reason for the event in the main clause, respectively. (81) shows topicalization of *ouer siþon*, a syntactic sign of CP a adjunct.

(77)***for*** *he hadded get his tresor*

`because he had got his treasure.’ (*Peterborough Chronicle*, 1137, 3)

(78) ***for*** *æuric rice man his castles makede.*

`because every powerful man made his castles.' (*Peterborough Chronicle*, 1137, 13-4)

(79) ***for*** *ne uuæren næure nan martyrs swa pined alse hi wæron.*

`because never were martyrs as tortured as they were.' (*Peterborough Chronicle*, 1137, 20)

(80) ***for*** *nan ne wæs o þe land.*

`because none was in that land.' (*Peterborough Chronicle*, 1137, 42)

(81) *Wes næure gæt mare wreccehed on land ne næure hethen men werse ne diden þan hi diden,*

was never yet more wretchedness in land nor never heathen men worse NEG did than they did,

***for*** *ouer siþon ne forbaren hi nouther circe ...*

because ever since NEG forbore they neither church …

`Never yet had more wretchedness been in the land not did heathen men ever worse things than they did because afterwards they didn’t forbear a church ...' (*Peterborough Chronicle*, 1137, 42-6)

(82) ***for*** *hi uueron al forcursæd.*

because they were all accursed

`Because they were all cursed.’ (*Peterborough Chronicle*, 1137, 53)

(83) ***for*** *þe land was al fordon mid suilce dædes.*

because the land was all fordone by such deeds.

`Because the land was ruined by such deeds.’ (*Peterborough Chronicle*, 1137, 54-5)

So, as with PPs that are headed by *after,* the stages here are (a) preposing of the (causative) PP, (b) reanalysis of the PP as a CP specifier, and (c) reanalysis of *for* as a C head. A PP occupies the specifier position of the CP, whereas *for* on its own never does. In Old English, *for* occurs in combinations such as *for ðon ðe, for ði, for ðæm ðe*, as in e.g. (84). With *ðe* present, there is no verb-second, indicating *ðe* is in C and the PP *for þæm* in the specifier position, similar to (50) above.

(84) *ac* ***for þæm þe*** *hie us near sint, we ... ne magon ...*

but for that REL they us close are, we ... NEG may *...*

`but because they are near to us, we can't ...' (*Orosius*, Bately 122.18-9)

*For* has variants, *before* and *fore*. In Old English, (*be)fore* functions as an adverb and preposition of space and time. There is much variety, e.g. in the *Vespasian Psalter*, *fore* is used to indicate location, and it is preposed and precedes a demonstrative but this is not the case in some later texts. For some reason, *fore* is never used as a temporal complementizer. The first clearly complementizer use of temporal *before* in the OED is in (85), from the early Middle English *Ormulum*.

(85) *Full mikell fresst* ***biforenn*** *þatt Þatt Crist comm her to manne,*

very long time before that that Christ came here to humans

`a very long time before Christ came to humans.’ (*Ormulum* 261-2)

Only in the middle of the fourteenth century, in (86), is *before* used on its own as a complementizer. That is at least a hundred years after such use with temporal *after* and many centuries after the first use of the causal complementizer *for.* The clause that it heads always remains a VP-adjunct.

(86) *On oure* ***byfore*** *þe sonne go doun, He* seƷ *þer ydel men ful stronge*

`An hour before the sun goes down, he saw idle men there, very strong.' (*Pearl* IX, Gordon, p. 19)

In conclusion to sections 5.1 and 5.2, the prepositions *after,* *for,* and *before* grammaticalize into complementizers in predictable patterns but at different rates of change. They start as adverbial PPs in the VP, are then preposed, and reanalyzed as the specifiers and then the heads of the CP. An explanation for the stages from PP to C are as follows. (a) The topicalization of the VP adjunct as part of the CP is due to avoidance of pair-merge, the AIP. The new position in the left periphery is one that avoids pair-merge; it is also selected by the information structural needs of a V2 language. (b) The base generation of the PP in the specifier of the CP is not problematic because labeling is either through the temporal or spatial features of the PP and the C or the highest root phrase is not labeled (see Ott 2012, Blümel 2017, and Boškovič 2018). (c) If we assume that labeling is through feature-sharing, the change from specifier to head shows a preference of Minimal Search over feature-sharing, as seen in chapter 2.

As a result of the change from PP to C, two clauses are now joined and that means another pair-merged structure is created if the embedded *(be)for(e)*- or *after-*clause is a VP adjunct. The *after*- and *before-*headed CPs remain temporal clauses so remain VP adjuncts; *for*-headed CPs are used as both VP and CP adjuncts, and will therefore be discussed more in the next section for what that tells us about the AIP and the possible preference of more or less integration.

**6 Clause integration**

As becomes clear from the previous section, once a PP grammaticalizes as the C head of a CP, this CP becomes dependent on another clause and this can result in an AIP violation if it is pair-merged. Section 6.1 discusses these changed dependencies for *for* clauses and also provides data on changes in dependency in clauses with *since* as C. Both *for* and *since* head clauses that are used as VP (central) and CP (peripheral) adjuncts, possibly showing the hand of the AIP.

A second way for a clause to increase its dependency on another clause is to be reanalyzed from insubordinate to subordinate. Insubordination employs a dependent clause in independent ways. In section 6.2, I first give some examples of insubordination, showing they do not (always) arise from ellipsis, and then I provide evidence that, over time, clauses can either go from subordinate to insubordinate. This shows that an increase in integration is not as relevant as the avoidance of pair-merge.

*6.1 For* and *since*

In this section, I discuss the cases of *for* and *since*. Although *for* PPs start as central adverbials (in Haegeman’s sense), when they become Cs and start linking to another clause, this link is both of a central and peripheral nature. If peripheral adjuncts are less integrated, this change is unexpected from the point of view of increase of integration but expected if central adjuncts are adjoined to the VP through pair-merge and CP adjunction avoids that. It therefore seems that integration is not as relevant of a driving force, as we’ll also see in section 6.2.

As has been shown in section 5, when *for* and *after* are part of PPs that function as adjuncts, the latter are VP adjuncts, as in (41) to (50) and (60) to (72), respectively. The reason is that they provide background on place, time, purpose, and cause. When *after* is reanalyzed as a C, its clause always functions as a VP adjunct, so there is no avoiding pair-merge in that case. More interesting Cs are *for* and *since* because they are the heads of both VP and CP adjuncts, as I show in the remainder of section 6.1. This may be due to the AIP.

Causal sentential adjuncts introduced by *for* start in the late Old English period. The last part of the *Peterborough Chronicle* has many instances and, right from the beginning, i.e. from 1130 on, they can be (central) VP adjuncts, as in (87), and (peripheral) CP ones, as in (88), both repeated from the previous section.

(87) *Þa þestre sona þas landes,* ***for*** *æuric man sone ræuede oþer þe mihte*

then darkened soon the land, because every man soon robbed another that could

`Then, there soon was tribulation in the land, because everyone that could robbed someone else.' (*Peterborough Chronicle*, 1135, 8)

(88) *Wes næure gæt mare wreccehed on land ne næure hethen men werse ne diden þan hi diden,*

was never yet more wretchedness in land nor never heathen men worse NEG did than they did,

***for*** *ouer siþon ne forbaren hi nouther circe ...*

because over since NEG forbore they neither church …

`Never yet had more wretchedness been in the land not did heathen men ever worse things than they did because afterwards they didn’t forbear a church ...' (*Peterborough Chronicle*, 1137, 42-6)

(87) provides a cause for the event, i.e. answers the question of why there was darkness on the land and, in (88), the speaker provides their perspective on the event but does not provide a reason for the event. (88) also shows topicalization of the adverb *ouer siþon*, a criterion used by Haegeman to determine the presence of a peripheral adjunct.

Turning to *since*, three Old English forms are listed in the OED, namely *sith, sithen,* and *since.* Unlike *for*, its main use in OE is as C although it looks in form like a preposition with a reduced demonstrative. The OED and Skeat (1892: 430) put the origin of it as from a temporal preposition *sið* and demonstrative *ðam*. So, the history of the complementizer *since* is similar to that of *after* and *for*: a preposition that was part of a VP adjunct is reanalyzed as a complementizer that is either a VP or CP adjunct, as I now show. As in the case of *for,* this demonstrates that CP adjuncts may arise because of the AIP.

The use of *syþþan* as temporal complementizer is very frequent in Old English. For instance, in Beowulf, there are 78 variants of *syþþan/siþþan,* as in (89).

(89) ***Syððan*** *ærest wearð feasceaft funden, he þæs frofre gebad*

since first was helpless found, he that help awaited

`Since he was found helpless early on, he awaited that help.’ (Beowulf, 6-7)

These clauses precede and follow the main clause, as (90) to (92) show. They are central adverbials because of V-last and very close integration into the clause, as (93) shows.

(90) ***Sydðe*** *iohannes geseald wæs com se hælend on galileam*.

After John imprisoned was came the saviour to Galilee

`After John had been imprisoned came the savior into Galilee.’ (OED, Hatton Mark 1.14)

(91) *Hu lang tid is* ***syððan*** *him þis gebyrede.*

How long is since him this came

`How long since this came to him?’ (OED, Corpus Mark 9.21)

(92) *nu synde þreo gear* ***seððan*** *ich come wæstme secende on þissen fic treowe*

now are three years since I came fruit seeking on this figtree

`Three years since I came to pick fruit on this figtree.’ (Hatton Gosp. Luke 13.7)

(93) *þeos* ***seððe*** *ich inn eode ne geswac þæt hyo mine fet ne kyste.*

this since I in went not ceased that she my feet not kissed

`This woman hasn’t ceased kissing my feet since I came in.’ (OED, Hatton Gosp. Luke 7.45)

In Old English, *syþþan* also heads peripheral adjuncts, as in (94) and (95). The use is “rare in this causal sense” (OED s.v. *sithen* B 2a).

(94) *Ac [ic] þe wille nu giet getæcan ðone weg ðe ðe gelæt to þære heofonlican byrig...,* ***siððan*** *ðu ongitst [þ]urh mine lare hwæt sio soðe gesælð bið.*

`But I want to show you the way which leads you to the heavenly city … given that you understand through my learning what truth will be given.’

(OED, Alfred, Boethius I. xxvi)

(95) *Fela wæron forbodene Godes folce on ðære ealdan æ þe nu syndon clæne æfter Cristes tocyme,* ***siððan*** *Paulus cwæð to þam Cristenum ðus, Omnia munda mundis.*

`Many (things) were forbidden to God’s people in the law that now are clean after Christ’s coming because Paul said to the Christians thus “All things are clean”’

(OED, Ælfric Lives of Saints, Maccabees, 25.74)

Central (temporal) uses of *since* continue into Middle English and into Modern English, as in (96) to (98), as do peripheral ones, as in (99) to (103).

(96) *Seynt iohan is þe beste þat euer wes iwrouht* ***Seoþþe*** *god makede Middelerd.*

`Saint John is the best that ever was created since God created Earth.’

(OED, Serving Christ 52 in Old Eng. Misc. 92)

(97) ***For sith*** *charite haþ be chapman ... Many ferlis han fallen.*

`Since Charity has (proved) a peddler … many marvels have occurred’.

(OED, Langland Piers Plowman B. Prol. 64)

(98) ***Seþþe*** *þat þe see was first i-ordeyned … hit chaungeþ neuere his place.*

`Since the see was first ordained, it never changed its place.’

(OED, Trevisa tr. Higden Polychron. II. 117)

(99) *But* ***sythe*** *it is so, ... What were now thy beste consayle?*

`But because it is so, what would now be your best counsel?’

(OED, Le Morte Arthur 1744-6)

(100) ***Siþ*** *þei alle been deed in bodi, Cristis wordis may be taken of hem.*

`Because they are all dead in body, Christ’s words may be taken from them.’

(OED, Wyclif Sel. Wks. III. 339)

(101) ***Sith*** *yee be in company of honest men & good, Worchith somwhat aftir.*

`Because you are in the company of honest and good men, honor somewhat afterwards.’

(OED, Tale of Beryn Prol. l. 159)

(102) *Hue is hit uoul dede* ***zeþþe*** *hit is kendelich?*

`How is it a foul deed, because it is natural?’ (OED, Ayenbite Gradon 1965: 47)

(103) *What neodeþ hit þanne a newe lawe to brynge,* ***Sutthe*** *þe furste suffisede.*

`Why is it then necessary to put out a new law, since the first suffised.’

(OED, Langland, Piers Plowman C. xx. 33)

In conclusion to section 6.1, once *for* is used as a complementizer, it introduces both VP and CP adjuncts, i.e. central and peripheral ones, although as preposition, it only introduces VP adjuncts. *Since* is a complementizer in Old English (based on a preposition and a demonstrative) and also heads both VP and CP adjoined clauses. The shift from the preposition heading just VP adjuncts to the complementizer heading both VP and CP adjuncts is expected if the latter are less costly. The AIP would predict that.

*6.2 Insubordination*

In this section, I first provide some examples of insubordination and then outline work that argues insubordination originates in subordination. Within the framework I have sketched in this chapter, that change would be expected because insubordination avoids the pair-merge of VP adjunction. These insubordinate structures indeed derive from VP adjuncts. Finally, I provide evidence that English *because*-clauses also start out as subordinate clauses and turn into insubordinates later. The motivation for the change is possibly pragmatic as well as in accordance with the AIP.

Insubordination is the use of a dependent clause in an independent way. Traugott (2017) lists the characteristics of insubordination as the use of, on the one hand, a subordinator, subjunctive (i.e. dependent) mood, and subordinate word order and, on the other hand, an independent syntactic use. A Dutch example of insubordination is given in (104), where not only the complementizer *als* is present but the word order is Verb-final, typical of a subordinate clause, as the difference between (104a) and (104b) shows, with V2 word order in the latter.

(104) a. *Als ik dat doen kon!* Dutch, subordinate word order

If I that do could[[6]](#footnote-6)

b. \*Als ik kon dat doen!Dutch, main clause word order

If I could that do

`If only I could do that.’

Insubordinates come in many kinds, and some can be argued to arise from ellipsis, as (105) shows for (104a), where the main clause is assumed to be elided.

(105) [*Ik zou zo blij zijn] als ik dat doen kon!* Dutch

I would so glad be if I that do could

`I’d be very happy if I could do that.’

If they arise from ellipsis, leaving out the main clause counts would be pragmatically significant and the appearance of insubordinates would probably not be due to economy effects. Evans (2007: 387-422) provides a typologically-rich list of the functions that the insubordinate has. Indirection, control, polite requests, warnings, and admonitions are among the typical uses of insubordinates. So, in order to warn someone, it is more effective to utter (106) than its non-elided counterpart in (107) where the meaning is the same.

(106) *Als je dat doet!* Dutch

if you that do

(107) *Hij vermoordt je als je dat doet!*

He kills you if you that do

`He’ll kill you if you do that.’

Traugott distinguishes answers to earlier questions, as in (108), where ellipsis is obvious from those where the main clause is not recoverable, as in the exclamative in (109).

(108) *Satanas: And why þat tree, þat wold I witte, Any more þan all other by?*

And why that tree, that would I know Any more than all others near?

*Eua:* ***For*** *oure lord God forbeedis vs itt, The fruit þerof, Adam or I To neghe it nere.*

For our lord God forbids us it The fruit thereof, Adam or I To approach it near

‘S: Why that tree, I want to know, any more than other trees nearby? E: Because our lord forbids Adam or me its fruit or to approach it.’ (c.1470 Fall of Man, York Plays 5: 34, from Taugott 2017: 297)

(109) *Angelus Deficiens: O,* ***what*** *I am fetys and fayre and figured full fit*

Oh, wh. I am handsome and fair and shaped fully fit

‘Oh, how handsome and fair and truly becomingly I am shaped!’ (c. 1470 Fall of the Angels York Plays I: 63, from Taugott 2017: 297)

Insubordination emphasizes degree, which is often expressed in the highest level of the clause, the CP. For instance, in Old English (110), the adverb adds degree modification to the modal.

(110) ***Hu*** *ne meaht þu gesion þæt ælc wyrt & ælc wudu wile weaxan on þæm lande ...*

How not might thou see that every herb and every tree will grow on that land ...

`How can’t you see that every herb and tree will grow (best) in that land ...

(DOE, Boethius, 91.13)

The difference between (106) and (110) is that the latter has main clause word order and therefore is clearly independent, although both are emphatic in function. Thinking about this in terms of cyclical change, the use of an emphatic is a conscious choice by the language user to renew the language and not a change towards a more economical structure.

If insubordinates are underlyingly subordinate, their appearance doesn’t tell us very much about the direction of the change from dependent to more independent. Abraham (2016) notes that modal particles are useful in distinguishing illocutionary independent clauses from dependent ones. That shows that, even though the word order is Verb-last, the C must have illocutionary force for an utterance like (104a) but not in (105). This is shown in (111), where *soms* and *nog* express mood in the insubordinate clause in (111a) but are temporal/aspectual adverbs in the subordinate one in (111b).

(111) a. *Als Je Dat* ***Soms Nog*** *Niet Dacht* (song title)

If you that PRT PRT not thought

`If you hadn’t thought of that.’

b. *Ik zou zo blij zijn als ik dat* ***soms nog*** *doen kon!*

I would so glad be if I that PRT PRT do could

`I’d be very happy if I could do that.’

(5a) is therefore not a case of ellipsis but a genuine insubordinate.

In short, insubordinate sentences, such as (104a) and (106), are ambiguous between dependent and independent clause. An utterance like (111a) is not, if we use Abraham’s argument about modal particles, and functions as an independent clause where the complementizer *als* blocks Verb-second. What do we know about the diachrony of insubordination?

Mithun (2008) shows in great detail that Navajo and Yup’ik are using an erstwhile subordinator in independent clauses. Rather than arguing that it is a case of ellipsis, Mithun gives reasons that this change is one of extension, i.e. “the extension of the scope of grammatical dependency markers from the domain of the sentence to larger discourse and pragmatic contexts” (Mithun 2008: 113). Navajo (112) shows the use of the clitic –(*g)o* as a subordinator and (113), which is the beginning of an anecdote, includes the use of –(*g)o* in independent sentences.

(112) *áko jineezjéé’=****o*** *shį́į́* Navajo (Dolly Hermes Soulé)

so recline=GO perhaps

*da’jiłhxaazh.*

all.PF.sleep

`And then apparently [when everybody was in bed], they all went to sleep.’ (Mithun 2008: 71, glosses adapted)

(113) a. *Hádą́ą́léi’ya, hastiin léí’ nihaanííáya=****ǫ́*** *akwe’é*

one\_day man some us.visit=GO here

‘One day a man came to visit us here.’

b. *haashį́į́ t’áao nhik’éí=****go****.*

somehow PRT our.relative=GO

`He’s our relative somehow.’ (Mithun 2008: 71, glosses adapted)

Mithun demonstrates that earlier stages of Navajo and other Athabaskan languages do not use –*go* in this independent function and that therefore the direction has gone from dependent, as in (112), to insubordinate, as in (113). The clause marked by –*go* modifies the event, so is a VP adjunct.

Higashiizumi (2006) argues the same for English, namely that there is a (slight) increase in the cases of insubordination and, in terms of the framework that I have sketched, both her and Mithun’s data would circumvent the VP adjunction of (112) to avoid pair merge, the AIP, in (113) by generating a sentence separately.

In the OED, there is one early form that seems to be insubordinate, namely (114). It could be an alternative form of the question word `why’ as the OED suggests (“*because why* used interrogatively”).

(114) *Þen seide þe prest. sone bi þi leue. I. most seye forþ my seruise. I. prey þe take hit. nouht in greue. For Þou hast herd al my deuyse.* ***Bi cause whi.*** *hit is clerkes wise.*

`Then, said the priest “son, with your permission, I must say my service. I ask you take it not in grief because you have heard my story. Because it is the clerk’s way.’

(OED, c1305, Deo Gratias 33-7, Early English Poems & Lives Saints, 1862: 125)

The majority of clauses, although loosely adjoined, modify the VP of another clause, so are not insubordinate. For example, (115) to (119) modify the VP.

(115) *And* ***for because*** *that Saturne is of so late sterynge þerfore the folk of þat contree þa ben vnder his clymat han of kynde no will for to meve ne stere to seche strang places.*

`And because Saturn is so little stirring therefore the people of that contry that are under his influence have in character no will to move or stir to find strange places.’

(OED, Mandeville's Travels xv. 162)

(116) *But, sires,* ***by cause*** *I am a burel man, At my bigynnyng first I yow biseche, Have me excused of my rude speche.*

But, sires, because I am an unlearned man, at my beginning, first I ask you to excuse me of my rude speech.’ (MED, Chaucer CT, Franklin’s Tale 716)

(117) *This seneca, of which that I devyse,* ***By cause*** *nero hadde of hym swich drede, For he fro vices wolde hym ay chastise Discreetly, as by word and nat by dede, --*

`This Seneca of whom I tell, because Nero was so afraid of him, because he would always chastise him for vices discretely as by word and not by deed (MED, Chaucer CT, Monk’s Tale, 3694)

(118) *But* ***by the cause that*** *they sholde ryse Eerly, for to seen the grete fight, Unto hir reste wenten they at nyght*.

`But because they must rise early to see the great fight, they went to rest at nightfall.’

(MED, Chaucer CT, Knight’s Tale, 2488-90, see Higashiizumi 2006: 73)

(119) *She gropeth alwey forther with hir hond, And foond the bed, and thoghte noght but good,* ***By cause that*** *the cradel by it stood.*

`She gropes further with her hand, and found the bed and thought all was good, because the cradel stood there.’ (MED, Chaucer CT, Reeve’s Tale 4224)

Traugott (2017: 297-8) notes a frequent use of insubordinate *because* in Shakespeare, as in (120) and (121). The switch between the pronouns `I’ and `thou’ in (121) argues for a real insubordinate, with a switch of perspective.

(120) Adriana: Why should their liberty than ours be more?

Luciana: **Because** their business still lies out o’ door.

Adriana: Look, when I serve him so, he takes it ill.

(Comedy of Errors II, i, 11, from Traugott 2017: 297)

(121) Biron: Well followed: Judas was hanged on an elder.

Holofernes: I will not be put out of countenance.

Biron: **Because** thou hast no face.

Holofernes: What is this? (Love’s Labors Lost V, ii, 610, Traugott 2017: 298)

So, the data in (115) to (121) suggest that, as in Navajo, *because* is a complementizer and only later in subordinate uses emerge. The reason may be a combination of pragmatic renewal and an avoidance of a pair-merged structure.

In section 6, I have examined what happens when *for*- and *since-*clauses start to function in a subordinate function. Although the PPs they are part of are originally VP adjuncts, the subordinate clauses they head as C are both VP and CP adjuncts. Insubordinate clauses start as subordinate ones, according to Mithun and Higashiizumi, and this is to be expected if VP adjuncts avoid pair-merge and the data like (114) support that. The next case where avoidance of pair-merge is relevant is in the reanalysis of PP adjuncts into predicates and arguments.

**7 Adjunct to predicate and to complement**

Visser (1963) argues a massive transitivization process has taken place from Old to Modern English. Most of this change is due to the loss of prefixes and suffixes (loss of transitivizing *ge*- and causativizing *–i*) so that intransitive and transitive verbs end up with the same shape. Other factors are the use of auxiliary *be* for both perfective and passive so that the perfective of the intransitive *was shrunk* could be reanalyzed as the passive of a transitive and the use of what is now known as reaction objects, with verbs such as *bellow* and *smile* (see e.g. Bouso 2019). These do not involve incorporating an adjunct, however, and I will instead examine two specific cases of adjunct incorporation.

In section 7.1, I will first outline some of the general factors affecting argument structure in the history of English. In section 7.2, I discuss VP adverbials that are reanalyzed as predicates (where the data are mainly from van Gelderen 2018b) and, in section 7.3, I examine VP adverbials reanalyzed as complements. The latter two changes are due to avoidance of pair-merge, I argue.

*7.1 Changes in Argument Structure*

Visser (1963: 97-138) offers a detailed argument that there is a decrease in verbs that are exclusively intransitive towards Modern English. Van Gelderen (2018b: 58-9) examines 81 of the 223 intransitives Visser considers to have changed and finds that half become obsolete and 18 remain unchanged. There are several changes affecting the others. (a) some unaccusatives (e.g. (*a)latian* `become slow’) acquire a light verb or particle; (b) there is an increase in labile verbs; and (c) some unergatives acquire a theme. Typical examples are given in (122) to (124), with Modern English examples (see van Gelderen 2018b: 56-66 for a full discussion).

(122) a. *slow > become slow* light verb added

b. *burst > burst out* particle added

(123) Y *drops > X drops Y* change to labile

(124) *X chided > X chided Y* change to transitive

The changes in (122) to (124) involve “filling out” the vP/VP: the unaccusatives in (122) by adding a light verb and telic particle, the unaccusatives in (123) by adding a Causer in the specifier of v\*P, and the unergatives in (124) by adding a Theme as complement in the VP.

Bouso (2017; 2019) provides similar data for reaction objects, where new DP objects appear. The verb *smile* is first used as intransitive starting around 1300, as in (125) to (127), and then gains cognate objects, as in (128) and (129), with the first use found in Shakespeare.

(125) *Philip held him stille, & bigan to* ***smyle****.*

`Philip kept still and began to smile.’ (OED, 1338, Mannyng Chron. 185)

(126) Achilles ... upon himself to **smyle** Began, when he was so besein.

(OED, 1390, Gower Confessio Amantis II. 228)

(127) This lady **smylith** at his stedefastnesse.

(OED, c1385, Chaucer Legend Good Women Ariadne. 2123)

(128) He does **smile** his face into more lynes, then is in the new Mappe.

(OED, Shakespeare Twelfth Night iii. ii. 74)

(129) Thou **smil'st** my smiles: when I a teare let fall, Thou shedd'st an other.

(OED, 1621 Sandys tr. Ovid First Five Bks. Metamorphosis iii. 76)

In what follows, I examine two changes in argument structure that involve adjuncts. The first is when unaccusatives are reanalyzed as copulas and VP adjuncts as subject predicates (e.g. *appear*). The second occurs when the VP adjunct is reanalyzed as an argument. Examples are given in (130) and (131), respectively, and will be discussed in the next two subsections.

(130) *It appears (in an evil way) > It appears evil* unaccusative to copula

(131) *They climb (to the top) > They climb the top* unergative to transitive

*7.2 Adjuncts to Predicates*

In this section, I discuss two intransitives that become copulas, namely *appear* and *remain* (cf. Visser 214-5; van Gelderen 2018b: 122-8).

The unaccusative verb *appear* comes into the language from French as an intransitive with the meaning of `be visible’, as in (132), and ‘become visible, come forth, be clear’, as in (133).

(132) *This Sterre ... that wee clepen the Lode Sterre, ne* ***apperethe*** *not to hem*

This star that we call the Lode Star, not appears not to them

`This star, which we call the Lode Star, is not visible to them.’

(OED, 1366 Mandeville's Trav. xvii. 180)

(133) ***Aperede*** *an ongel of heuene in here slepe.*

appeared an angel of heaven in her sleep

`There appeared an angel from heaven in her sleep.’

(OED, *c*1250 *Kent. Serm.* in *Old Eng. Misc.* 27)

It becomes a copula in the 14th century, as in (134), with the meaning `appear/be’.

(134) a. *And the Lord siȝ, and it* ***apperide*** *yuel in hise iȝen.*

‘And the Lord saw and it appeared/was evil in his eyes.’

(OED, *a*1425 *Wycliffite Bible* L.V. Royal Isa. lix. 15)

b. Our greatness will **appear** Then most conspicuous.

(OED, 1667 Milton *Paradise Lost* ii. 257)

With the adjective *yuel* `evil’ in (134a), Visser argues that the sentence is ambiguous between modifying the (intransitive) verb or the subject nominal (Visser 1963: 183). However, even with a PP, as in (133), the function is ambiguous and, because *in here slepe* in (132) can be an adjunct or adjectival subject predicate, the construction can reanalyze, as in (135).

(135) a. VP > b. ?P

ei ei

VP PP DP PredP

ei 4 *an ongel* ei

DP V *in here slepe* Pred PP

*an ongel aperede*  *aperede* 4

*in here slepe*

In (135a), the PP is pair-merged which is replaced by set-merge in (135b). Although the labelling of the highest node in (1435) cannot not be achieved through Minimal Search, the DP *an ongel* can move to a higher position (as we’ve seen in chapter 1). The theta-roles of the single DP of the unaccusative and copula verbs is, of course, the same (Theme) and this helps the reanalysis.

Another instance of an intransitive that turns into a copula is the verb *remain.* This verb is also borrowed as an intransitive from French in the 14th century. Its meaning in Latin is ‘stay behind’. The first instance that the OED provides is given in (136a), with a meaning of ‘continue to belong, stay with’. The first instances given in the MED are from 1425, as in (136b), with the same ‘stay behind’ meaning.

(136) a. *To the part of this endenture* ***remaynand*** *to the forsaid Alexander.*

`As for the part of this agreement remaining to the already mentioned Alexander.’

(OED, 1388, Robertson Illustr. Topogr. & Antiq. Aberdeen & Banff 1857)

b. *Onely oo cow she hadde a-lyue* ***remaynyng*** *of that pestilence.*

‘Only one cow she had alive remaining of the plague.’

(MED, 1425, Found.St.Barth. 60/15)

The first instance of *remain* as a copula is hard to give. Visser’s clearest example as a copula with an adjective is from 1528 and given in (137). Others, dating from 1513 are given in (138) and (139).

(137) the hole body of Christes holy church **remaine** pure.

(Thomas More Works 183 F8, Visser 1963: 195).

(138) Where **remained** behynd, the Lorde Ryuers the Kynges vncle

(Thomas More, Richard III, <http://www.luminarium.org/renascence-editions/r3.html>)

(139) those lordes of her honorable kinne, which as yet **remained** vnder arrest should vpon the matter examined, do wel ynough. (Thomas More, Richard III, idem).

The scenario provided by Visser (1963: 195) on how the intransitive reanalyzes into a copula is, as in the case of *appear*, structural ambiguity. In the intransitive use, Visser notes, there is often an apposition, as with *prisoners* is in (140). The intended meaning is that `they remained’ with a secondary predicate telling us how they remained, namely ‘as prisoners’. This nominal is not clearly separate from the rest of the sentence and hence reanalyzable as the complement to the copula.

(140) *the Factour with the others did* ***remaine*** *prisoners*

‘the perpetrator with the others remained, prisoners.’

(Visser 1963: 195, Lichefield translation, 1582)

Since *remain* is often used in the conclusion of letters, a name would be following it as well, again reanalyzable.

Apart from the appositive uses of nouns after intransitives, there is another reason for the instability of intransitives that was mentioned in connection to *appear*, namely, if an adjective follows the verb, the adjective is ambiguous between modifying the (intransitive) verb or complementing the copula. Visser (1946: 65) notes that, even in the 16th century, certain adjectives could be used as adjective or adverb. Sentences (141) to (143) are such ambiguous cases.

(141) All goodes ... brought to the seid Fayre ... **remaynyth** vnsoold

(MED, 1463, GRed Bk.Bristol, pt.2.p.61)

(142) Since which she was removed to Kimbolton, Where she **remains** now sick.

(Visser 1963: 195, Shakespeare, Henry VIII, 4.1)

(143) the great primar, whiche before daies I gave to my wif, **remayn** styll to her. (OED, 1513 *Will of Robert Fabyan* Pref. p. vii)

Even in Modern English, the sentences in (144) are ambiguous although usually the intonation will tell whether it is a copula with no break, as in (145), or an intransitive with secondary predication, as in (24).

(144) a. They **lived** happy. copula

b. She **returned** rich.

(145) a. They **lived**, happy. intransitive

b. She **returned**, rich

Many speakers feel uncomfortable putting an adjective next to an intransitive verb and have trouble deciding whether or not to put an *–ly* in (146ab) or not.

(146) a. Does the clutch **feel** any different/differently?

b. Do not **go** gentle/gently into that good night.

If the postverbal element (AP in (137), DP in (140), and PP in (143)) is ambiguous, it is possible to reanalyze the structure and the direction of this reanalysis provides some insight on what is economical/third factor. A sentence like (146) could be reanalyzed as in (147): from pair-merge to set-merge. As in (135), the label of highest phrase in (147) cannot be found through Minimal Search but needs movement (or feature sharing).

(147) a. VPP > b. ?P

ei ei

VP PP DP PredP

ei 4 *the primar* ei

DP V *to her*  Pred PP

*the primar* *remayn*  *remayn to her*

This section has shown how copulas may evolve from unaccusatives through avoiding pair-merge. This has been quite frequent, witness the set of unaccusatives that are also copulas (*stay, drift, go, come, fall, loom, break, stand, lie, blush*, and *rest*).

*7.3 Adjuncts to objects*

In this section, I examine the incorporation of adjuncts as objects to unergative verbs. I’ll start with some of the verbs that Rohdenburg (2009; 2018b) identifies as showing a transitivizing trend.

Rohdenburg (2009; 2018b) shows that manipulative verbs, as in (148), and verbs of leaving, as in (149), select PPs rather than DPs in earlier stages of English, e.g. in (150) and (151), the PP is now awkward.

(148) *advise*, *compel*, *counsel*, *encourage*, *enjoin*, *entitle, entreat*, *incite,* *induce*, *inspire*, *invite*, *solicit*, *stimulate*, *threaten, urge, win*.

(149) *flee, resign, escape, depart*

(150) He incited (to) a rebellion. (Rohdenburg 2018b: 79-80)

(151) He fled (from) war.

Body-part instruments have also changed a lot. Examples appear in (152) where the earlier instrumental adjunct is replaced by an object. Other such instrumental objects are listed in (153).

(152) a. She clicked with her tongue.

b. She clicked her tongue. (Rohdenburg 2018: 81)

(153) *beat–wing, blink–eye, clap–hand, clack–tongue, click–tongue, cluck–tongue, flap–wing, gnash–tooth, grind–tooth, kick–leg, loll–shoulder, nod–head, pout–lip, point–finger, shrug–shoulder, shuffle–foot, snap–finger, stamp–foot, tap–finger/foot, wave–hand/arm, wink–eye,* etc.

Another group that Rohdenburg categorizes as increasing in transitivity are the the external possessorss incorporating the PP, as in (154).

(154) a. A wasp stung me on the finger.

b. A wasp stung my finger.

These changes are instances where pair-merged adjuncts are reanalyzed as set-merged objects, in accordance with the AIP.

In addition to the verbs in (148) to (154), there are others, mainly unergatives, such as those shown in Table 6.4, that `gain’ objects from reanalyzing adjuncts. The trend in Modern English is for the object to become less peripheral, as Visser (1963: 355) notes.

|  |
| --- |
| lament for/over him > lament him  climb to the top > climb the top  won on the pools > won the pools  protest against taxes > protest taxes  bow with our heads > bow our heads  shop at IKEA’s > shop IKEA’s  visit with friends > visit friends  graduate from college > graduate college |

Table 6.4: Adjunct to object reanalysis (from Rohdenburg 2018b and Callies 2018)

I’ll provide two examples of the change from unergative to transitive for the top two verbs listed in Table 6.4. The Old English *heofan* `lament’ has no object in (155) but is rare. When *lament* is introduced in the 16th century, it is both as intransitive and transitive, as in (156) and (157), but then settles on a transitive use in (158).

(155) *Nænig ne sie se ðe ne sarige his synna, & wepan he sceal*

nobody not be DEM REL not grieve his sins and weep he shall

*& hreowsian þæt he ne scyle on ecnesse* ***heofan****.*

and repent that he not should on eternity lament

`There is nobody who is not sorry for his sins and he shall weep and be sorry that he doesn’t lament for ever.’ (DOE, *Vercelli Homilies* 22.74-5, Scragg 1992: 371)

(156) All the house of Israel lamented after the Lord. (OED, 1611 Bible (King James) 1 Sam. vii. 2)

(157) There folowed him a greate multitude of people and of wemen, which bewayled and **lamented him**. (OED, 1535 Bible (Coverdale) Luke xxiii. 37)

(158) No. I **lament it** - the disappearances, but I can't feel angry about it. (COCA Spoken 2018)

Another verb that changes its transitivity during the history of English is *climb.* In Old English, it is intransitive in (159) or has a PP adjunct in (160). By early Middle English, the PP has changed to a DP, as in (161), as evidenced by the fact that it can be passivized, as in (162).

(159) *Gif hit unwitan ænige hwile healdað butan hæftum,*

If it (light) unwise any time holds without fetters

*hit ðurh hrof wædeð, bryceð and bærneð boldgetimbru,*

it through roof wades, breaks and burns timbers

*seomað steap and geap, stigeð on lenge,****clymmeð*** *on gecyndo*

hangs steep and high, rises in length, climbs in nature.

`If an unwise person holds it (light) without bounds, it will go through the roof and break and burn the timbers (of a house); it hangs steep and high and rises and climbs in nature.’ (DOE, Solomon and Saturn 412-6, Dobbie, 1942)

(160) *ac hi ... geodon into þe mynstre,* ***clumben*** *upp* ***to þe halge rode***

but they ... went into the monastery, climbed up to the holy cross (to take the crown of the head of Jesus) (Peterborough 1070).

(161) a. *To* ***climbe*** *þe cludes all þe sunn sal haf þe might.*

`To climb the clouds the sun shall have the power.’

(OED, Cursor Mundi, Vesp. 16267)

b. *Thai stoutly* ***clam*** *the hill.*

`They courageously climbed the hill.’

(OED, Barbour Bruce, St. John's Cambr. x. 63)

(162) How the Garden-wall was climbed (COHA Fiction 1854)

In addition to the preposition getting lost, there are also prepositions that reanalyze as part of the verb. Miller (2019: 270) provides the minimal pairs in (163) and (154), from Old English. In (163), the PP is a VP adjunct whereas, in (164), the preposition is part of the verb and the prepositional object is now object of the verb. This is an alternative to the reanalysis of the entire PP and DP object (with loss of the preposition).

(163) *þonne mot he feohtan* ***on hine***

then can he fight on him

‘then he can fight against him’ (Laws of Ælfred 76 §42.4, Miller 2019)

(164) *gif hine mon on wōh* ***onfeohteð***

if him man wrongly on.fights

‘if a man fights against him wrongly’ (Laws of Ælfred 76 §42.6, Miller 2019).

Because there is doubling of the preposition and the prefix in other languages, as in (165) from Gothic, it is likely that the preposition incorporated first.

(165) *jah* ***miþinn****galaiþ* ***miþ***  *Jesua* ***in***  *rohsn þis gudjins*

and with.in.go with Jesus in palace the high.priest

‘and (he) went with Jesus into the palace of the high priest’ (John 18.15, Eythorsson 1995: 39)

This section has provided examples where VP adjuncts are reanalyzed as DP predicates and objects, in accordance with the AIP.

**8 Conclusion**

In this chapter, I first raise some questions about the pair-merge operation that’s involved in adding adjuncts to the computation and the accompanying rule of SIMPL. I then examine differences between two types of adjuncts, those that are adjoined through pair-merge and those that are in the specifier of a functional category. Pair-merged NP and VP adjuncts often reanalyze as higher specifiers: locational NP modifying adverbs (`here’ and `there’) as specifiers of DPs, manner VP modifying adverbs (*already*) as specifiers of aspectual categories, and locational/causal adverbs as specifiers of CPs. This is argued to be due to the AIP, i.e. to avoid pair-merge, reanalysis takes place as a higher specifier.

As shown in chapter 2 (sections 5 and 7), adjuncts in specifier positions of higher functional phrases reanalyze as the heads of these phrases. Examples provided in this chapter involve aspectual AdvPs and PPs in the specifier positions of a CP that become ASP and C heads, respectively, after being frequent in a preposed position. The preposing of a VP adjunct to the specifier position of the CP is instigated by a pragmatic reason that puts topical/connecting information in sentence-initial position in certain languages.

As VP adjuncts are reanalyzed as complementizers, the clauses they head become dependent on other clauses and function as both VP and CP adjuncts to these clauses. This shows that there may be a preference for CP adjuncts and it also shows that there is no preference for a more integrated clause (i.e. the VP adjunct) over a less integrated one (i.e. the CP adjunct). Insubordinate clauses start as subordinate ones, according to Mithun and Higashiizumi, and this is to be expected if VP adjuncts avoid pair-merge and the data I add support that.

Finally, adjuncts are integrated as predicates and objects. This means that unaccusatives are reanalyzed as copulas and unergatives as transitives. This fits the transitivizing tendency in the later history of English and is to be expected from an AIP perspective.

**Chapter 7**

**Conclusion**

In this book, I have argued that efficient computation is key to language change. Third factor principles such as Minimal Search and Determinacy are implicated in the way languages change and in how paradoxes are resolved. For instance, the change from phrase to head, chronicled in chapter 2, is a move towards using Minimal Search.

Avoiding determinacy violations by selecting either just a TP or just a CP is relevant to language variation and change as well, as argued in chapter 3. They explain differences between languages and stages that show *that-*trace effects, have subject-less relatives, and complementizer-less CP complements and those that do not. Determinacy is also relevant to avoiding topics and reanalyzing copulas, as shown in chapter 4. Chapter 5 examines tension between TP expletives, which are hard to label, and the presence or absence of a TP.

Chapter 6 looks at another aspect of efficient computation, namely the avoidance of pair-merge. I claim that adjuncts come in two kinds, base generated as specifiers of functional heads or adjoined. Neither is efficient and the former reanalyze as heads (as also seen in chapter 2) and the latter in specifiers of higher functional heads. There are many other applications of the idea that adjuncts are inefficient, e.g. Gibert-Sotelo (to appear).

I summarize the main conclusions reached in the book in Table 7.1.

|  |
| --- |
| **Minimal Search**: language learners reanalyze phrases as heads and this enables labeling using Minimal search.  **Features**: (a) the uninterpretable features of the phase head minimally involve person because pronouns are reanalyzed as T once they’ve lost all features except person. Linguistic change is sensitive to different person features: first person is the first to start the subject cycle while third person starts the object cycle.  (b) <phi, phi> feature sharing is not stable but <Q, Q> may be.  **The status of T**: need not be weak or strong, as in Chomsky (2015). It can label the phrase it heads but needs feature-sharing to label the phrase that is the result when the DP subject merges.  **Determinacy:** (a) violations arise in the clausal area where the CP and TP meet. These violations can be resolved by either having TP but no CP. The TP/T can be skipped in German, Dutch, and earlier English.  (b) Determinacy favors the change from more movement to less movement and therefore from a topic to a subject and from a verb to an auxiliary.  **Feature Inheritance**: is either from C to T (in languages with obligatory T, such as modern English) or from C to v/v\* (in languages with optional T, such as Dutch or Old English).  **Pair-merge**: is avoided in favor of incorporation as a specifier of a functional category. |

Table 7.1: The relevance of Third Factor and other principles in language variation and change

**References**

Abraham, Werner. 2016. Types of autonomous subordination: Notably the case of German STOV. Unpublished MS.

Anklam, Ernst 1908. *Das englische Relativ im 11. und 12. Jahrhundert*. Berlin.

Adli, Aria 2015. What you like is not what you do: Acceptability and frequency in syntactic variation. In Aria Adli, Marco García García & Göz Kaufmann (eds.), *Variation in language*: *System- and usage-based approaches*, 173–200. Berlin: De Gruyter.

Akkuş, Faruk, Mohammed Salih, & David Embick 2019. Alignment and argument indexing in the Standard and Garmiani varieties of Sorani Kurdish. NACIL 2 talk.

Allen, Cynthia 1977. Topics in Diachronic English Syntax. Univ of Mass PhD.

Alsaeedi, Mekhlid 2015. The Rise of New Copulas in Arabic. ASU MA thesis.

Andrew, M. & R. Waldron 1978. *The Poems of the Pearl Manuscript*. University of Exeter.

Ascham, Roger 1570. *The scholemaster*. Menston: Scolar Press [1967].

Auger, Julie 1996. Subject-clitic inversion in Romance: A morphological analysis. *Aspects of Romance linguistics.* C. Parodi et al., eds. Washington: Georgetown University Press.

Axel, Katrin 2009. Die Entstehung des *dass*-Satzes – ein neues Szenario. In Veronika Ehrich, Christian Fortmann, Ingo Reich, and Marga Reis (eds), *Koordination und Subordination im Deutschen*, 21-41. Hamburg: Buske.

Axel-Tober, Katrin 2017. The development of the declarative complementizer in German. *Language* 93.2.

Bácskai-Atkári, Júlia & Éva Dekány 2014. From non-finite to finite subordination. In Katalin É. Kiss (ed), *The Evolution of Functional Left Peripheries in Hungarian Syntax,*148-223. Oxford: Oxford University Press.

Bahtchevanova, Mariana and Elly van Gelderen 2016. The French subject cycle and the role of objects. In Elly van Gelderen (ed.), *Cyclical Change Continued*, 113-135. Amsterdam: John Benjamins.

Baker, Mark. 2008. *The syntax of agreement and concord*. Cambridge: Cambridge University Press.

Baltin, Mark 1978. Toward a theory of movement rules. Ph.D. thesis, MIT.

Bartnik, Artur 2011. *Noun Phrase Structure in Old English*. Lublin: Catholic University of Lublin.

Bately, Janet 1980. *The Old English Orosius*. Oxford: Oxford University Press [EETS S.S. 6].

Bayer, Josef 1984. Comp in Bavarian Syntax. *The Linguistic Review* 3: 209-274.

Bayer, Josef and Ellen Brandner 2008. On wh-head-movement. In Charles Chang and Hannah Haynie (eds), *Proceedings of the 26th West Coast Conference on Formal Linguistics*, 87-95. Somerville, MA: Cascadilla.

Benveniste, Emile 1966. *Problèmes de linguistique générale*. Paris: Gallimard.

Benson, Larry 1987. *The Riverside Chaucer*. Boston: Houghton Mifflin Company.

Bergh, Gunnar & Aimo Seppänen 1994. Subject extraction in English: The use of the *that-*complementizer.In Francisco Fernández, Miguel Fuster, and Juan José Calvo (eds), *English Historical Linguistics 1992,* 131-143. Amsterdam: John Benjamins.

Berman, Ruth 1978. *Modern Hebrew Structure.* Tel Aviv: University Publishing Projects.

Biber, Douglas, Susan Conrad, & Geoffrey Leech 2002. *Longman Student Grammar of Spoken and Written English*. London: Longman.

Biberauer, Theresa. 2017. Factors 2 and 3: A principled approach. *Cambridge Occasional Papers in Linguistics* 10. 38–65.

Blockley, Mary 1989. Old English Coordination, Apposition, and the Syntax of English Poetry. *Modern Philology* 87.2: 115-131.

Blümel, Andreas 2017. *Symmetry, Shared Labels and Movement in Syntax.* De Gruyter.

Boeckx, Cedric 2011. *Approaching parameters from below*. In Anna-Maria Di Sciullo and Cedric Boeckx (eds), The biolinguistic enterprise, 205–221. Oxford: Oxford University Press.

Boeckx, Cedric 2012. *Syntactic Islands*. CUP.

Bont, A.P. de 1962. *Het Dialect van Kempenland I*. Assen.

Booij, Geert & Jaap van Marle (eds) 2003. *Yearbook of Morphology*. Dordrecht: Kluwer.

Bopp, Franz 1816. *Über das Conjugationssystem der Sanskritsprache in Vergleichung mit jenem der griechischen, lateinischen, persischen und germanischen Sprachen*. Frankfurt-am-Main.

Bošković, Željko 2004. Be careful where you float your quantifiers. *Natural Language and Linguistic Theory* 22: 681-742.

Bošković, Željko 2018. On the Syntax and Prosody of Verb Second and Clitic Second. ms.

Bouso, Tamara 2017. Muttering contempt and smiling appreciation: Disentangling the history of the Reaction Object Construction in English. *English Studies* 98/2: 194-215.

Bouso, Tamara 2019. The growth of the transitivising Reaction Object Construction. ms.

Bowers, John. 1993. The syntax of predication. *Linguistic Inquiry* 24: 591-656.

Breivik, Leiv Egil 1977. A note on the genesis of existential there. *English Studies* 58.4: 334–48.

Breivik, Leiv Egil 1983. *Existential There*. University of Bergen.

Bresnan, Joan & Sam Mchombo 1987. Topic, Pronoun, and Agreement in Chichewa. *Language* 63: 741-82.

Broekhuis, Hans 1992. Chain-Government. University of Amsterdam dissertation.

Broekhuis, Hans 2005. Extraction from subjects: Some remarks on Chomsky’s On phases. In Hans Broekhuis, Norbert Corver, Riny Huybregts, Urusula Kleinhenz, and Jan Koste (eds.), *Organizing grammar*, 59-67, Berlin: Mouton de Gruyter.

Brook, G. & R. Leslie 1963. *Layamon: Brut*. Oxford: Oxford University Press [EETS 250].

Brugè, Laura 1996. Demonstrative Movement in Spanish. *University of Venice Working Papers in Linguistics* 6.1: 1-53. <http://dspace-unive.cilea.it/bitstream/10278/436/1/6.1.1.pdf>

Brugè, Laura 2002. The position of demonstratives in the extended nominal projection. In Guglielmo Cinque (ed.), *Functional structure in DP and IP*, 15–53. Oxford: Oxford University Press.

Buchstaller, Isabelle & Elizabeth Traugott 2006. The Lady Was Al Demonyak: Historical Aspects of Adverb All. *English Language and Linguistics* 10, 345 - 370. 10.1017/S136067430600195X.

Butler, Jonny 2003. A minimalist treatment of modality. *Lingua* 113: 967–996.

Butler, Milton 1980. Grammatically motivated subjects in Early English. UT Austin, PhD.

Bybee, Joan 1985. *Morphology*. Amsterdam: John Benjamins.

Byrne, Francis 1988. Deixis as a noncomplementizer strategy for creole subordination marking. *Linguistics* 26.3: 335-64.

Callies, Marcus 2018. Patterns of direct transitivization and differences between British and American English. In Mark Kaunisto et al. (eds), *Changing Structures: Studies in constructions and complementation*, 151–16. Amsterdam: John Benjamins.

Carstens, Vicki, Norbert Hornstein, & Daniel Seely 2013. Head Movement in *Problems of Projection.* ms (ling.auf.net/lingbuzz/001892/v1.pdf‎)

Chomsky, Noam 1964. *Current Issues in Linguistic Theory*. The Hague: Mouton.

Chomsky, Noam 1965. *Aspects of a Theory of Syntax*. The Hague: Mouton.

Chomsky, Noam 1970. Remarks on Nominalization. In Jacobs, Roderick A. and Rosenbaum, Peter S. (eds.), *Readings in English Transformational Grammar*, 184-221. Boston: Ginn.

Chomsky, Noam 1973. Conditions on Transformations. In Stephen Anderson and Paul Kiparsky (eds.). *A Festschrift for Morris Halle*, 232-286. New York: Holt, Rinehart & Winston.

Chomsky, Noam 1975. *Reflections on Language*. New York: Pantheon.

Chomsky, Noam 1977. *Essays on form and interpretation*. New York: North-Holland.

Chomsky, Noam. 1981. *Lectures on government and binding.* Dordrecht: Foris Publications.

Chomsky, Noam 1986. *Barriers.* Cambridge: MIT Press.

Chomsky, Noam 1995. *The Minimalist Program*. Cambridge: MIT Press.

Chomsky, Noam 2000. Minimalist Inquiries: The Framework. *Step by Step: Essays in Minimalist Syntax in Honor of Howard Lasnik* ed. by D. Michaels, R. Martin & J. Uriagereka, Cambridge: MIT Press.

Chomsky, Noam 2001. Derivation by Phase. In Michael Kenstowicz (ed), *Ken Hale. A Life in Language*, 1-52. Cambridge: MIT Press.

Chomsky, Noam 2004. Beyond Explanatory Adequacy. In Adriana Belletti (ed.), *Structures and Beyond*, 104-131. Oxford: Oxford University Press. [published in 2001 in *MIT Occasional Papers in Linguistics* 20].

Chomsky, Noam 2005. Three factors in language design. *Linguistic Inquiry* 36.1: 1-22.

Chomsky, Noam 2007. Approaching UG from below. In Uli Sauerland and Hans-Martin Gärtner (eds), *Interfaces + Recursion = Language*, 1-29. Berlin: Mouton de Gruyter.

Chomsky, Noam 2008. On phases. In Robert Freidin, Carlos Otero and Maria Luisa Zubizarreta (eds), *Foundational issues in linguistic theory: Essays in honor of Jean-Roger Vergnaud*, 291-321. Cambridge: MIT Press.

Chomsky, Noam 2013. Problems of Projection. *Lingua* 130: 33-49.

Chomsky, Noam 2015. Problems of Projection: Extensions. In: *Structures, Strategies, and Beyond*, ed. Elisa Di Domenico et al, 3-16. Amsterdam: John Benjamins.

Chomsky, Noam 2016. Puzzles about Phases. ms.

Chomsky, Noam 2017. Three lectures at the University of Arizona. (<https://arizona.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=7be79007-580e-4ce3-be6b-86e15ec1d31f>)

Chomsky, Noam 2019. <https://linguistics.ucla.edu/noam-chomsky/>

Chomsky, Noam 2020. The UCLA Lectures. <https://ling.auf.net/lingbuzz/005485>.

Chomsky, Noam, Ángel J. Gallego, and Dennis Ott 2019. Generative Grammar and the Faculty of Language: Insights, Questions, and Challenges. *Catalan Journal of Linguistics* Special issue, 229-261. <https://doi.org/10.5565/rev/catjl.288>

Chomsky, Noam & Howard Lasnik 1977. Filters and Control. *Linguistic Inquiry* 8-3: 425-504.

Cinque, Guglielmo 1999. *Adverbs and Functional Heads*. Oxford: Oxford University Press.

CLMET. The Corpus of Late Modern English texts, a 34 million word corpus from between 1710 and 1920. <https://lirias.kuleuven.be/handle/123456789/517304>.

COCA. The Corpus of Contemporary American English, a 520 million word corpus from between 1990-2015. <http://www.americancorpus.org/>

COHA. The Corpus of Historical American English, a 400 million corpus from between 1800-2009. <http://www.americancorpus.org/>

Coleman, W. 1975. Multiple modals in southern States English. PhD Indiana University.

Corpus d’entretiens spontanés, <https://www.llas.ac.uk/resourcedownloads/80/mb016corpus.pdf>.

Comrie, Bernard 1989. *Language Universals and Linguistic Typology*. Oxford: Blackwell. (2nd edition).

Costa, João, Inês Rodrigues Duarte, and Cláudia Silva 2006. Construções de redobro em portguês brasileiro. Revista leitura.

Craig, Colette 1977. *The Structure of Jacaltec*. Austin: University of Texas Press.

Culbertson, Jenny & Géraldine Legendre 2008. Qu’en est-il des clitiques sujet en français oral contemporain? In J. Durand, B. Habert, & B. Laks (eds), *Actes du 1er Congrès Mondial de Linguistique Française*, 2651-2662. Paris : EDP Sciences.

Dahl, Osten 2001. Inflationary Effects in Language and Elsewhere. In Joan Bybee and Paul Hopper (eds), *Frequency and the Emergence of Linguistic Structure,* 471-480. Amsterdam: John Benjamins.

Dam, Johannes van 1957. *The Causal Clause and Causal Prepositions in Early Old English Prose*. Groningen: Wolters.

d'Ardenne, S. T. R. O., ed. 1977. *The Katherine Group*. Paris: Les Belles Lettres.

Deal, Amy 2009. The Origin and Content of Expletives: Evidence from ‘‘Selection’’. *Syntax* 12.4: 285–323. DOI: 10.1111/j.1467-9612.2009.00127.

Deal, Amy 2019. Raising to Ergative: Remarks on Applicatives of Unaccusatives. *Linguistic Inquiry* 50.2: 388-415.

Derbyshire, Desmond C. 1985. *Hixkaryana and Linguistic Typology*. Dallas: Summer Institute of Linguistics.

Diessel, Holger 1999. *Demonstratives*. Amsterdam: John Benjamins.

Diessel, Holger 2019. Preposed Adverbial Clauses: Functional adaptation and diachronic inheritance. In: Karsten Schmidtke-Bode, Natalia Levshina, Susanne Maria Michaelis & Ilja A. Seržant (eds.), Explanation in typology: Diachronic sources, functional motivations and the nature of the evidence, 97–122. Berlin: Language Science Press. DOI:10.5281/zenodo.2583812

*Dictionary of Old English (DOE*) texts. <http://www.doe.utoronto.ca>.

Di Paolo, Marianna 1989. Double modals as single lexical items. *American Speech*, 64(3): 195–224.

Doherty, Cathal 2000. *Clauses without `that’*. New York: Garland.

Dryer, Matthew 2013. Expression of Pronominal Subjects. In: Dryer, Matthew S. & Haspelmath, Martin (eds.) *The World Atlas of Language Structures Online*.  Leipzig: Max Planck Institute for Evolutionary Anthropology. (Available online at http://wals.info/chapter/101, Accessed on 2014-08-10.)

Duarte, Maria Eugênia. 2000. The loss of the “avoid pronoun” principle in Brazilian Portuguese. In Mary Kato and Esmeralda Negrão (eds),*The Null Subject Parameter in Brazilian Portuguese*, 17–36. Frankfurt & Madrid: Vervuert-Iberoamericana.

Edwards, Malcolm 2006. Pronouns, agreement and focus in Egyptian Arabic. *SOAS Working Papers in Linguistics* 14: 51-62.

Eid, Mushira 1983. The Copula Function of Pronouns. *Lingua* 59: 197-207.

Elenbaas, Marion 2007. The Synchronic and Diachronic Syntax of the English Verb-Particle Combination. Utrecht: LOT Publications.

ELICOP Corpus, includes the Orléans, Tours, and Auvergne corpora. The Orléans Corpus (ESLO)contains 902,755 words of transcribed spoken French from 1966 to 1970; <http://bach.arts.kuleuven.be/pmertens/corpus/search/t.html>

Epstein, Samuel, Hisatsugu Kitahara, and Daniel Seely 2016. Phase cancellation by external pair-merge of heads. *Linguistic Review* 33.1: 87-102.

Erlewine, Michael Yoshitaka 2014. Anti-locality and Kaqchikel Agent Focus. *Proceedings of the 31st West Coast Conference on Formal Linguistics*, ed. Robert E. Santana-LaBarge, 150-159. Somerville, MA: Cascadilla Proceedings Project.

Erlewine, Michael Yoshitaka 2016. Anti-locality and optimality in Kaqchikel Agent Focus. *Natural Language & Linguistic Theory* 34.2: 429-479.

Erlewine, Michael Yoshitaka 2020. Anti-locality and subject extraction. ms.

Ernst, Thomas 2002. *The Syntax of Adjuncts*. Cambridge: Cambridge University Press.

Evans, Nicholas 2007. Insubordination and its uses. In Irina Nikolaeva (ed.) *Finiteness: Theoretical and empirical foundations*. Oxford: University Press. 366– 431.

Faltz, Aryeh 1973. Surrogate Copulas in Hebrew. ms.

Fischer, Olga, Ans van Kemenade, Willem Koopman and Wim van der Wurff 2000. *The Syntax of Early English*. Cambridge: Cambridge University Press.

Fischer, Olga, Hendrik de Smet, and Wim van der Wurff 2017. *A brief history of English Syntax*. Cambridge: Cambridge University Press.

Fischer, Susann, Mario Navarro, & Jorge Vega Vilanova 2019. The clitic doubling parameter. In *Cycles in Language Change*. In Anne Breitbarth, Miriam Bouzouita, Lieven Danckaert, and Elisabeth Witzenhausen (eds), 52-70. Oxford: Oxford University Press.

Fonseca-Greber, Bonnibeth 2000. The Change from Pronoun to Clitic and the Rise of Null Subjects in Spoken Swiss French. University of Arizona Diss.

Forshall. J. & F. Madden, eds. 1850. *The Holy Bible containing The Old and New Testaments with the Apocryphal Books in the Earliest English Versions, made from the Latin Vulgate by John Wycliffe and his Followers, 4 Vols*. Oxford: Oxford University Press.

Foulet, Lucien 1919 [1961]. *Petite Syntaxe de L'ancien Français*. Paris: Honoré Champion. 3rd edn.

Fowler, Henry 1926. *A Dictionary Of Modern English Usage*. Oxford: Clarendon.

Franco, Jon Andoni 1993. On Object Agreement in Spanish. University of Southern California Dissertation.

Fulk, R.D., Robert Bjork, and John Niles (eds) 2008. *Klaeber's Beowulf.* Toronto: University of Toronto Press.

Fuß, Eric 2005. *The Rise of Agreement.* Amsterdam: John Benjamins.

Gabelentz, Georg von der 1891[1901]. *Die Sprachwissenshaft. Ihre Aufgaben, Methoden und bisherigen Ergebnisse*. Leipzig: Weigel. [reprint Tübingen: Narr 1972].

Gelderen, Elly van 1993. *The Rise of Functional Categories.* Amsterdam: John Benjamins.

Gelderen, Elly van 1997. Verbal Agreement and the Grammar behind its "Breakdown": Minimalist Feature Checking. Tübingen: Niemeyer.

Gelderen, Elly van 2004. *Grammaticalization as Economy.* Amsterdam: John Benjamins.

Gelderen, Elly van 2007. The Definiteness Cycle in Germanic, *Journal of Germanic Linguistics* 19.4: 275-305.

Gelderen, Elly van 2009. Renewal in the Left Periphery: Economy and the Complementizer Layer, *Transactions of the Philological Society* 107.2 (2009): 131-195.

Gelderen, Elly van 2011. *The Linguistic Cycle*. Oxford: Oxford University Press.

Gelderen, Elly van 2013. *Clause Structure*. Cambridge: Cambridge University Press.

Gelderen, Elly van 2015a. *How*. In Josef Bayer et al. (eds), *Discourse-oriented Syntax,* 159-174. Amsterdam: John Benjamins.

Gelderen, Elly van 2015b. The Copula Cycle, special issue on Copulas in Lingue e Linguaggio XIV.2: 287-301. DOI: 10.1418/81753.

Gelderen, Elly van 2016. Features and Affix-hop. *Acta Linguistica Hungarica* 63.1(2016): 1-22. DOI: 10.1556/064.2016.63.1.1.

Gelderen, Elly van 2018a. Problems of Projection: The Role of Language Change in Labeling Paradoxes. *Studia Linguistica* 72.1: 113-127. https://doi.org/10.1111/stul.12041

Gelderen, Elly van 2018b. *The Diachrony of Verb Meaning.* Routledge.

Gelderen, Elly van 2019. Cyclical Change and Problems of Projection. In Cycles in Language Change. In Anne Breitbarth, Miriam Bouzouita, Lieven Danckaert, and Elisabeth Witzenhausen (eds), 13-32. Oxford: Oxford University Press.

Gibert-Sotelo, Elisabeth. to appear. Cyclical change in affixal negation. In *Points of Convergence in Romance Linguistics*, edited by Gabriela Alboiu and Ruth King. Amsterdam/Philadelphia: John Benjamins.

Girard, Francine 2010. Le statut des clitiques sujets cadiens <https://www.linguistiquefrancaise.org/articles/cmlf/pdf/2010/01/cmlf2010_000209.pdf>

Giusti, Giuliana 1997. The categorical status of determiners. In Liliane Haegeman (ed.) The New Comparative Syntax, 95–124. London: Longman.

Giusti, Giuliana 2002. The functional structure of noun phrases. A base phrase structure approach. In Guglielmo Cinque (ed.) Functional structure in DP and IP, 54–90. Oxford: Oxford University Press.

Givón, Talmy 1976. Topic, pronoun, and grammatical agreement. In Charles Li (ed.) *Subject and Topic*: 151-188. New York: Academic Press.

Givón, Tom 1979. From Discourse to Syntax. In *Syntax and Semantics* 12, 81-112. Academic Press.

Givón, Tom 1991. The evolution of dependent-clause syntax in Biblical Hebrew. In Elizabeth Traugott & Bernd Heine (eds), *Approaches to Grammaticalization*, 257-310. Amsterdam: John Benjamins.

Givón, Tom 2015. *The Diachrony of Grammar.* Amsterdam: John Benjamins.

Givón, Tom 2018. *On understanding Grammar; revised edition*. Amsterdam: John Benjamins.

Glinert, Lewis 1989. *The Grammar of Modern Hebrew*. Cambridge: Cambridge University Press.

Goto, Nobu 2015. On Labeling: In Search of Unconstrained Merge. <https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbnxnb3RvdW5vYnV8Z3g6YzY2MGQzNDUzMWUxZTQy>

Goto, Nobu & Toru Ishii 2019. The Principle of Determinacy and Its Implications for MERGE. In *Proceedings of the 12th GLOW in Asia & 21st SICOGG*, 91-110. [available at: <http://sicogg.or.kr/GLOW-Asia-12-2019/proceedings/>]

Gradon, Pamela 1965. *Dan Michel's Ayenbite of Inwyt*. Oxford: Oxford University Press.

Greenberg, Joseph 1966. Some Universals of Grammar with Particular Reference to the Order of Meaningful Elements. In *Universals of Language, \*\**. Cambridge: MIT Press.

Greenberg, Joseph 1978. How does a language acquire gender markers. In Joseph Greenberg (ed.), *Universals of Human Language*, 3, 47-82. Stanford University Press.

Grimshaw, Jane 1997. Projection, Heads, and Optimality. *Linguistic Inquiry* 28.3: 373-422.

Groot, Herre de (ed). 1959. *Wyclif's Translation of the Gospel of John (as extracted from his sermons), II, The Text*. Montréal, PhD.

Grohmann, Kleanthes 2003. *Prolific Domains: On the Anti-Locality of Movement Dependencies.* Amsterdam: John Benjamins.

Grohmann, Kleanthes 2011. Anti-Locality: Too-Close Relations in Grammar. In Cedric Boeckx (ed.), *The Oxford Handbook of Linguistic Minimalism*, 260–290. Oxford: Oxford University Press.

Hacquard, Valentine 2010. On the Event-Relativity of Modal Auxiliaries. *Natural* *Language* *Semantics*. 18.1: 79-114.

Haden Elgin, Suzette and Rebecca Haden. 1991. *A celebration of Ozark English: A collection of articles from the Lonesome Node–1980 to 1990*. Huntsville: OCLS Press.

Haeberli, Eric 2002a. Observations on the loss of Verb Second in the history of English. *Studies in Comparative Germanic Syntax: Proceedings from the 15th Workshop on Comparative Germanic Syntax*, 245-72. Edited by C. Jan-Wouter Zwart and Werner Abraham. Amsterdam: John Banjamins.

Haeberli, Eric. 2002b. Inflectional morphology and the loss of V2 in English. In *Syntactic Effects of Morphological Change*, David Lightfoot (ed.), 88–106. Oxford: Oxford University Press.

Haegeman, Liliane 2003. Conditional Clauses: External and Internal Syntax. *Mind & Language* 18.4: 317–339.

Haegeman, Liliane 2006. Argument Fronting in English, Romance CLLD, and the Left Periphery. In Rafaella Zanuttini et al (eds), *Crosslinguistic Research in Syntax and Semantics*, 27-52. Washington: Georgetown University Press.

Haegeman, Liliane 2012. *Adverbial Clauses, Main Clause Phenomena, and the Composition of the Left Periphery*. Oxford: Oxford University Press.

Haegeman, Liliane and Marjo van Koppen 2012. Complementizer Agreement and the Relation between Co and To. *Linguistic Inquiry* 43.3: 441-454.

Haeringen, C.B. van 1956. *Nederlands tussen Duits en Engels.* Den Haag: Servire.

Haider, Hubert 1986. V-Second in German. In Hubert Haider and Martin Prinzhorn (eds.), *Verb Second Phenomena in Germanic Languages*, 49-76. Dordrecht: Foris.

Haider, Hubert 1991. Null Subjects and Expletives in Romance and Germanic languages. *Issues in Germanic Syntax* ed. by Werner Abraham, Wim Kosmeijer and Eric Reuland, 49-66. Berlin, Mouton de Gruyter.

Haider, Hubert 2010. *The Syntax of German*. Cambridge: Cambridge University Press.

Haig, Geoffrey 2015. Ergativity in Iranian. <https://www.academia.edu/15321950/Ergativity_in_Iranian>

Haig, Geoffrey 2018a. The grammaticalization of object pronouns. *Linguistics* 56.4: 781-818.

Haig, Geoffrey 2018b. Grammaticalization and inflectionalization in Iranian. In Heiko Narrog & Bernd Heine (eds), *Grammaticalization from a Typological Perspective,* 57-78. Oxford: Oxford University Press.

Haiman, John 1974. *Targets and Syntactic Change*. Den Haag: Mouton.

Hale, Ken 1973. Person marking in Warlbiri. Stephen Anderson & Paul Kiparsky (eds), *A Festschrift for Morris Halle*, 308-44. New York: Holt, Rinehart and Winston.

Hale, Ken 1976. The adjoined relative clause in Indo-European. In *Grammatical Categories in Australia,* edited by R. Dixon. Canberra.

Halila, Hafedh 1992. Subject Specificity Effects in Tunisian Arabic. USC PhD.

Harris, Martin 1977. `Demonstratives', `articles' and `third person pronouns' in French: changes in progress. *Zeitschrift für romanische Philologie* 93: 249-261.

Harris, Martin 1978. *The Evolution of French Syntax*. London: Longman.

Haspelmath, Martin 2018. Revisiting the anasynthetic spiral. <https://pure.mpg.de/rest/items/item_3008134/component/file_3008135/content>

Haspelmath, Martin and the APiCS Consortium. 2013. Expression of pronominal subjects. In: S. Michaelis, & P. Maurer & Martin Haspelmath & M. Huber (eds.), *The atlas of pidgin and creole language structures*. Oxford: Oxford University Press. (<https://apics-online.info/>)

Hasty, J. Daniel 2012. We might should oughta take a second look at this: A syntactic re-analysis of double modals in Southern United States English. *Lingua* 122.14: 1716-1738.

Haugen, Jason 2008. *Morphology at the Interfaces.* Amsterdam: John Benjamins.

Heine, Bernd, Ulrike Claudi, & Friederike Hünnemeyer 1991. *Grammaticalization.* Chicago: University of Chicago Press.

Heine, Bernd & Tania Kuteva 2002. *World Lexicon of Grammaticalization*. CUP.

Higashiizumi, Yuko 2006. From a subordinate clause to an independent clause. Tokyo: Hituzi Syobo Publishing.

Hinterhölzl, Roland 2018. V2 in the split CP: the case of German. <http://demines.del.auth.gr/files/Hinterhoelzl_V2_in_the_split_CP_Handout.pdf>

Hinterhölzl, Roland & Ans van Kemenade 2012. The Interaction between syntax, information structure, and prosody in word order change. In Terttu Nevalainen and Elizabeth Closs Traugott, eds. 2012. *The Oxford Handbook of the History of English*. New York: Oxford University Press.

Hopper, Paul & Elizabeth Traugott 2003. *Grammaticalization*. Cambridge: Cambridge University Press.

Huang, James 1982. Logical relations in Chinese and the theory of grammar. MIT PhD.

Humboldt, Wilhelm von 1836. *Über die Verschiedenheit des menschlichen Sprachbaues und ihren Einfluß auf die geistige Entwicklung des Menschengeschlechts*. Berlin.

Jackendoff, Ray 1977. *X-bar syntax.* Cambridge MA: MIT Press.

Jackson, Dan 2006. The historical origins of the “that-trace effect”. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.53.8378&rep=rep1&type=pdf>

Jaeggli, Osvaldo 1982. *Topics in Romance Syntax*. Dordrecht: Foris.

Jansen, Bernd & Klaus-Jürgen Schlenck 1991. Subjectless relative clauses in Early Modern English: Ellipsis of Relative Pronoun or Contact Clauses? *Neuphilologische Mitteilungen* 92.1: 47-61

Jelinek, Eloise 1984. Empty categories, case, and configurationality. *Natural Language and Linguistic Theory* 2: 39-76.

Jelinek, Eloise 2001. Pronouns and Argument Hierarchies. Utrecht talk.

Jespersen, Otto 1917. *Negation in English and Other Languages.* Copenhagen: Munksgaard.

Jespersen, Otto 1921. *Language*. London: Allen & Unwin.

Jespersen, Otto 1927. *A Modern English Grammar* III. London: George Allen and Unwin.

Jespersen, Otto 1937. *Analytic Syntax*. London.

Jespersen, Otto 1942. *A Modern English Grammar VI.* London: George Allen and Unwin.

Jäger, Agnes 2005. Negation in Old High German. *Zeitschrift für Sprachwissenschaft* 24.2: 227-262.

Jäger, Agnes 2010. Der Komparativzyklus und die Position der Vergleichspartikeln. *Linguistische Berichte* 224: 467-493.

Kareem, Rabeen Abdullah 2016. The Syntax of verbal inflection in central Kurdish. PhD Newcastle University.

Katz, Aya 1996. Cyclical Grammaticalization and the Cognitive Link between Pronoun and Copula. Rice Dissertation.

Kayne, Richard 1975. *French Syntax*. Cambridge : MIT Press.

Kayne, Richard 1989. Facets of Romance Past Participle Agreement. *Dialect Variation and the Theory of Grammar* edited by P. Benincà, 85-103. Dordrecht: Foris.

Kayne, Richard 1994. *The Antisymmetry of Syntax*. Cambridge: MIT Press.

Kemenade, Ans van 1987. *Syntactic Case and Morphological Case in the History of English*. Dordrecht Foris.

Kemenade, Ans van 2009. Discourse relations and word order change. In Roland Hinterhölzl & Svetlana Petrova, Information Structure and Language Change, 91-120. De Gruyter Mouton.

Kemenade, Ans van & Bettelou Los 2006. Discourse adverbs and clausal syntax in Old and Middle English. In Ans van Kemenade & Bettelou Los (eds), *The Handbook of the History of English*, 224-48. Malden, MA: Blackwell.

Kidwai, Ayesha & Rosmin Mathew 2001. Relating to Relatives: The Cyclicity of SIMPL. <https://www.academia.edu/5142395/Relating_to_Relatives_The_Cyclicity_of_SIMPL_with_Rosmin_Mathew_>

Kiparsky, Paul 1995. Indo-European Origins of Germanic Syntax. In *Clause Structure and Language Change,* edited by Adrian Battye & Ian Roberts, 140-169. Oxford: Oxford University Press.

Kiparsky, Paul 2011. Grammaticalization as Optimization. In Dianne Jonas, John Whitman, and Andrew Garrett, *Grammatical Change Origins, Nature, Outcomes*, 15-51. Oxford: Oxford University Press.

Kiparsky, Paul & Cleo Condoravdi 2006. Tracking Jespersen's Cycle. In Mark Janse, Brian Joseph & A. Ralli (eds), *Proceedings of the 2nd International Conference of Modern Greek Dialects and Linguistic Theory.* Mytilene: Doukas.

Knorrek, Marianne 1938. *Der Einfluß des Rationalismus auf die englische Sprache*. Breslau: Paul Plischke.

Koeneman, Olaf & Hedde Zeijlstra 2017. *Introducing Syntax*. Cambridge: Cambridge University Press.

Kortmann, B. & K. Lunkenheimer (eds.) 2013. *The Electronic World Atlas of Varieties of English*. Leipzig: Max Planck Institute for Evolutionary Anthropology. (Available online at http://ewave-atlas.org, Accessed on 2019-10-07)

Krapp, G.P. & E.V. Kirk Dobbie 1936. *The Exeter Book*. New York: Columbia University Press.

Krivochen, Diego 2020. On workspaces in syntax. ms.

Kroch, Anthony & Ann Taylor 1997. Verb Movement in Old and Middle English: Dialect Variation and Language Contact. In Ans van Kemenade & Nigel Vincent (eds), *Parameters of Morphosyntactic Change*, 297-325. Cambridge: Cambridge University Press.

Kruger, William 2017. Free Merge, Agree, & Phase-Cancellation: An Account of (Anti-)That-Trace Effect. Proceedings of the 47th Meeting of the Northeast Linguistics Society (NELS47).

Kruger, William 2019. Isomorphy and Syntax-Prosody Relations in English. ASU PhD.

Kural, M. 1993. V-to(I-to)C in Turkish. *UCLA Occasional Papers in Linguistics* 11: 1-37.

Kytö, Merja 1993. *Manual to the diachronic part of the Helsinki corpus of English texts*. 2nd. edition. Helsinki: Department of English.

Lambrecht, Knud 1981. *Topic, Antitopic, and Verb Agreement in Non Standard French*. Amsterdam: John Benjamins.

Lambrecht, Knud & Kevin Lemoine 1996. Vers une grammaire des compléments zéro en francais parlé. In Jean Chuquet et Marc Fryd (eds), *Travaux linguistiques de CERLICO* 9, 279—309. Rennes : Presses universitaires de Rennes.

Larjavaara, Meri 2000. Présence ou absence de l’object. <http://ethesis.helsinki.fi/julkaisut/hum/romaa/vk/larjavaara/presence.pdf>

L’Arrivée, Pierre 2010. The pragmatic motics of the Jespersen Cycle: Default, activation, and the history of negation in French. *Lingua* 120 (9): 2240-2258.

L’Arrivée, Pierre & Richard Ingham (eds) 2011. *The evolution of negation. Beyond the Jespersen cycle.* Berlin: de Gruyter Mouton.

Lebeaux, David. 1991. Relative clauses, licensing and the nature of the derivation. Syntax and Semantics 25: Perspectives on phrase structure, ed. by S. Rothstein. New York: Academic Press. 209-239.

Legate, Julie 2014. Under-Inheritance. NELS 42 talk.

Lehmann, Winfred 1976. From Topic to Subject in Indo-European. In Charles Li, (ed.), *Subject and Topic,* 445-456. New York: Academic Press.

Lehmann, Winfred 1993. *Theoretical bases of Indo-European linguistics.* New York : Routledge.

Li, Fang Kuei 1967. *Chipewyan*. Viking Fund Publications in Anthropology 6.

Li, Charles, and Sandra Thompson. 1977. A mechanism for the development of copula morphemes. In Charles Li (ed.), *Mechanisms of syntactic change*, 414-444. Austin: University of Texas Press.

Lindberg, C. 1978. *The Middle English Bible. Prefatory Epistles of St Jerome*. Oslo: Universitetsforlaget.

Lockwood, W.B. 1968. Historical German Syntax. Oxford: Clarendon.

Longobardi, Giuseppe 2005 A Minimalist Program for Parametric Linguistics? In Hans Broekhuis, Norbert Corver, Riny Huybregts, Ursula Kleinhenz, and Jan Koster (eds.), *Organizing Grammar: Linguistic Studies for Henk van Riemsdijk*, 407-414, Berlin: Mouton de Gruyter.

Loprieno, Antonio 1995. *Ancient Egyptian*. Cambridge: Cambridge University Press.

Los, Bettelou 2009. The consequences of the loss of verb-second in English. *English Language and Linguistics* 13.1: 97-125. DOI: 10.1017/S1360674308002876

Los, Bettelou 2012. The loss of verb-second and the switch from bounded to unbounded systems. In Meurman-Solin, Anneli et al. (eds), *Information Structure and Syntactic Change in the History of English*, 21-46. Oxford: Oxford University Press.

Los, Bettelou 2015. *A Historical Syntax of English*. Edinburgh: Edinburgh University Press.

Los, Bettelou 2018. Permissive subjects and the decline of adverbial linking in the history of English. In Hubert Cuyckens, Hendrik De Smet, Liesbet Heyvaert, & Charlotte Maekelberghe (eds.), *Explorations in English Historical Syntax,* 23-50. Amsterdam: John Benjamins.

Los, Bettelou & Gea Dreschler 2012. The loss of local anchoring: From adverbial local anchors to permissive subjects. In Terttu Nevalainen & Elizabeth C. Traugott (eds.), *The Oxford Handbook of the History of English*, 859–871. Oxford: Oxford University Press.

Los, Bettelou & Ans van Kemenade 2018. Syntax and the morphology of deixis. The loss of demonstratives in the history of English. In Marco Coniglio, Andrew Murphy, Eva Schlachter, Tonjes Veenstra et al. (eds), *Atypical demonstratives: syntax, semantics and pragmatics*, 127-158. Berlin: de Gruyter.

Lyons, John 1967. A note on possessive, existential and locative sentences. *Foundations of Language* 3.4: 390-396.

Maddox, Matthew 2019. Cycles of Agreement: Romance clitics in Diachrony. Dissertation, University of Illinois at Urbana-Champaign.

Maling, Joan & Annie Zaenen. 1978. The Non-Universality of a Surface Filter. *Linguistic Inquiry* 9: 475-497.

McCloskey, Jim 1991. Verb Fronting, Verb Second and the Left Edge of IP in Irish. Stuttgart workshop on Comparative Germanic Syntax.

McConvell, Patrick 2006. Grammaticalization of Demonstratives as Subordinate Complementizers in Ngumpin-Yapa. *Australian Journal of Linguistics* 26.1: 107-137.

McWhorter, John 1997. *Towards a new model of creole genesis*. New York: Peter Lang.

McWhorter, John 2005. *Defining Creole*. Oxford: Oxford University Press.

Meillet, Antoine. (1921 [1912]) "L'évolution des formes grammaticales". In: *Linguistique historique et linguistique générale* (ed. Édouard Champion). Paris: Librairie Ancienne Honoré Champion, 130-148. [reprint 1958]

Miller, D. Gary 1993. *Complex verb Formation*. Amsterdam: John Benjamins.

Miller, D. Gary 2019. The Oxford Gothic Grammar. Oxford: Oxford University Press.

Miller, Thomas 1890-1898. *The Old English version of Bede's Ecclesiastical history of the English people*. London: Trübner and Co.

Mikkelsen, Line 2005. *Copular Clauses: Specification, predication and equation*. Amsterdam: John Benjamins.

Mitchell, Bruce 1985. *Old English Syntax II*. Oxford: Clarendon.

Mithun, Marianne 1991. The Development of Bound Pronominal paradigms. In Winfred Lehmann & Helen-Jo Jakusz Hewitt (eds), *Language Typology 1988*, 85-104. Amsterdam: John Benjamins.

Mithun, Marianne 2000. The reordering of morphemes. In Spike Gildea (ed.) *Reconstructing Grammar*, 231-55. Amsterdam: John Benjamins.

Mithun, Marianne 2008. The extension of dependency beyond the sentence. Language 84.1: 69– 119.

Mithun, Marianne 2016. What cycles when and why? In Elly van Gelderen (ed.), *Cyclical Change Continued*, 19-45. Amsterdam: John Benjamins.

Mizuguchi, Manabu 2017. Labelability and Interpretability. *Studies in Generative Grammar* 27.2: 327-365.

Mizuguchi, Manabu 2019. Ambiguous labeling and full interpretation. *Studia Linguistica*. \*\* doi.org/10.1111/stul.12109.

Moro, Andrea 1995. Small Clauses with Predicative Nominals. Small Clauses. In Anna Cardinaletti & Maria Teresa Guasti (eds.), *Syntax and Semantics 28,* 109-132. San Diego: Academic Press.

Müller, Gereon 2009. Ergativity, accusativity, and the order of Merge and Agree. In Kleanthes Grohmann (ed), *Explorations of phase theory*, 269-308. Berlin: De Gruyter.

Mufwene, Salikoko 1994. Double Modals in American Southern English: How Peculiar Are They? In Contemporary Linguistics, University of Chicago, 1, 89-104.

Murphy, Elliot & Shim, Jae-Young 2018. Copy Invisibility, (Non-)Categorial Labeling and Feature Embedding. *Journal of Linguistics* \*\*.

Mustanoja, Tauno 1960 [2016]. *A Middle English Syntax*. Helsinki: Societe Neophilologique. [reprinted by John Benjamins].

Nakao, Chizuru & Miki Obata 2007. Parametric Variations in NPI-Licensing and the Role of LF X0 movement. <https://www.semanticscholar.org/paper/Parametric-Variations-in-NPI-Licensing-and-the-Role-Nakao-Obata/91f7650978a1e846faa36c33a2d0b653439d1c81>

Nevalainen, Terttu 1997. Recycling Inversion. *Studia Anglica Posnaniensia* 31: 203-214.

Noailly, M. 1997. Les mystères de la transitivité invisible. *Languages* 127: 96-109.

Obata, Miki, Samuel Epstein, Marlyse Baptista 2015. Can crosslinguistically variant grammars be formally identical? Third factor underspecification and the possible elimination of parameters of UG. *Lingua* 156: 1-16.

OED, Oxford English Dictionary 1933. Oxford: Oxford University Press, and OED online.

Ordóñez, Francisco, Judy Bernstein, and Francesc Roca 2019. Emphatic pronouns and the development of definite articles. DIGS 21 paper, Tempe, AZ.

Oseki, Yohei 2015. Eliminating Pair-Merge. In Ulrike Steindl et al. (eds), *Proceedings of the 32nd West Coast Conference on Formal Linguistics*, 303-312. Somerville, MA: Cascadilla Proceedings Project.

Ott, Dennis 2012. *Local Instability*. Berlin: de Gruyter.

Pauwels, J.L. 1959. Afrikaans *hierdie daardie. Leuvense Bijdragen* 48.1-2: 1-3.

Perlmutter, David 1971. *Deep and Surface Structure Constraints in Syntax*. New York: Holt, Rinehart, and Winston.

Pesetsky, David 1982. Complementizer-trace phenomena and the Nominative Island Condition. *The Linguistic Review* 1.3: 297-343.

Pinker, Steven 1984. Language Learnability and Language Development. Cambridge: Harvard University Press.

Pintzuk, Susan 1993. Verb Seconding in Old English. *The Linguistic Review* 10: 5-35.

Pintzuk, Susan & Ann Taylor 2004. Objects in Old English. *York Papers in Linguistics* 1137-50.

Platzack, Christer 1983. Germanic Word Order and the COMP/INFL Parameter. *Working Papers in Scandinavian Syntax* 2.

Platzack, Christer 1987. The Emergence of a word order difference in Scandinavian subordinate clauses. *McGill Working Papers in Linguistics:* 215-238.

Platzack, Christer & Anders Holmberg 1989. The Role of AGR and Finiteness. *Working Papers in Scandinavian Syntax* 43: 51-76.

Pustet, Regina. 2003. *Copulas: Universals in the Categorization of the Lexicon*. Oxford: Oxford University Press.

Quarezemin, Sandra 2020 Brazilian double subjects and sentence structure. In Roberta Pires De Oliveira, Ina Emmel, and Sandra Quarezemin (eds), *Brazilian Portuguese, Syntax and Semantics*, 107-133. Amsterdam: John Benjamins.

Quirk, Randolph 1951. Expletive or existential there. *London Mediaeval Studies* 2.1: 32.

Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik 1985. *A Comprehensive Grammar of the English Language*. London: Longman.

Quirk, Randolph & Wrenn, C.L. 1955. *An Old English Grammar*. London: Methuen. [1977 reprint]

Radford, Andrew 2000. Children in Search of Perfection: Towards a Minimalist Model of Acquisition. *Essex Research Reports in Linguistics* 34.

Radford, Andrew 2019. *Relative Clauses.* Cambridge: Cambridge University Press.

Raidt, Esther 1993. Linguistic variants and language change: deictic variants in some German and Dutch dialects vis-à-vis Afrikaans. In Jaap van Marle (ed.), *Historical Linguistics 1991*, 281-294. Amsterdam: John Benjamins.

Reinhardt, Janina 2019. Regularity and Variation in French Direct Interrogatives. Konstanz dissertation.

Reinhart, Tanya 2006. *Interface strategies: Optimal and costly computations*. Cambridge: MIT Press.

Richards, Marc 2007. On Feature Inheritance: : An Argument from the Phase Impenetrability Condition. *Linguistic Inquiry* 38.3: 563-72. doi.org/10.1162/ling.2007.38.3.563

Richards, Marc 2009. Internal Pair-Merge: the missing mode of movement. *Catalan Journal of Linguistics* 8: 55-73.

Richards, Marc & Theresa Biberauer 2005. Explaining *Expl.* In Marcel den Dikken and Christina Tortora (eds), The Function of Function Words and Functional Categories, 115-153. Amsterdam: Benjamins.

Rizzi, Luigi 1980. Violations of the WH island constraint in Italian and the Subjacency Condition. Graffi 1980b.157-195. (Reprinted in Rizzi 1982.49-76).

Rizzi, Luigi 1982. *Issues in Italian Syntax.* Dordrecht: Foris Publications.

Rizzi, Luigi 1997. The Fine Structure of the Left Periphery. In Liliane Haegeman (ed.), *Elements of Grammar*, 281-337. Dordrecht: Kluwer.

Rizzi, Luigi 2001. On the position `Int(errogative)' in the Left Periphery of the Clause. In: Guglielmo Cinque et al. (eds), *Current Studies in Italian Syntax*, 287-296. Amsterdam: Elsevier.

Rizzi, Luigi 2006. On the Form of Chains. In Lisa Cheng & Norbert Corver (eds), *On Wh Movement*, 97-133. Cambridge, MIT Press.

Rizzi, Luigi 2014. Cartography, criteria, and Labeling. ms.

Rizzi, Luigi & Ur Shlonsky 2007. Strategies of Subject Extraction. In Uli Sauerland and Hans-Martin Gärtner (eds), *Interfaces + Recursion = Language*, 115-160. Berlin: Mouton de Gruyter.

Roberge, Yves 1990. *The Syntactic Recoverability of Null Arguments*. Kingston : McGill-Queen’s University Press.

Roberts, Ian 2010. A deletion analysis of null subjects. In Theresa Biberauer, et al (eds), *Parametric Variation*, 58-87. Cambridge: Cambridge University Press.

Roberts, Ian & Anna Roussou 2003. *Syntactic Change*. Cambridge: Cambridge University Press.

Robertson, John 1980. *The Structure of Pronoun Incorporation in the Mayan Verbal complex*. New York: Garland.

Rohdenburg, Günter 2009 Nominal complements. In *One Language, Two Grammars? Differences between British and American English*, Günter Rohdenburg & Julia Schlüter (eds), 194–211. Cambridge: Cambridge University Press.

Rohdenburg, Günter 2018a. Patterns of direct transitivization and differences between British and American English. In *Changing Structures: Studies in constructions and complementation,* by Mark Kaunisto, Mikko Höglund and Paul Rickman (eds), 129-149. Amsterdam: John Benjamins.

Rohdenburg, Günter 2018b. On the differential evolution of simple and complex object constructions in English. In Cuyckens et al (eds), *Explorations in English Historical Syntax*, 77-104. Amsterdam: Benjamins.

Ross, John R. 1967. Constraints on variables in syntax. Doctoral dissertation, Massachusetts Institute of Technology.

Ross, John R. 1969. Auxiliaries as Main Verbs. In William Todd (ed.), *Studies in Philosophical Linguistics*, 77-102. Evanston: Great Expectations.

Ross, Malcolm 2004. The Morphosyntactic Typology of Oceanic Languages. *Language and Linguistics* 5.2: 491-541.

Rothstein, Susan 2001. *Events and Grammar*. Dordrecht: Kluwer.

Rydén, Mats 1966. *Relative constructions in early sixteenth century English*. Stockholm : Almqvist & Wiksell.

Schnell, Stefan 2018. Whence subject-verb agreement? Investigating the role of topicality, accessibility, and frequency in Vera’a texts. *Linguistics* 56.4: 735-780. DOI:10.1515/ling-2018-0010

Sedgefield, Walter John (ed.) 1899. *King Alfred’s Old English version of Boethius*. Oxford: Clarendon.

Shaul, Dave 1986. *Topics in Nevome Syntax*. Berkeley: UC Berkeley Press.

Shibatani, Masayoshi 1991.Grammaticalization of Topic into Subject. In Traugott, Elizabeth & Bernd Heine, *Approaches to Grammaticalization* II, 93-133. Amsterdam: Benjamins.

Shim, Jae-Young 2018. <φ, φ>-less labeling. *Language Research* 54.1: 23–39.

Shlonsky, Ur & Rizzi, Luigi 2019. Criterial Freezing and the cartography of copular constructions. ms.

Siewierska, Anna 2004. *Person*. Cambridge: Cambridge University Press.

Siewierska, Anna 2008. Verbal Person Marking. In Martin Haspelmath, Matthew Dryer, David Gil & Bernard Comrie (eds.) *The World Atlas of Language Structures Online.* Munich: Max Planck Digital Library, chapter 102. Available online at <http://wals.info/feature/102>.

Siewierska, Anna 2013. Verbal Person Marking. In: Dryer, Matthew S. & Haspelmath, Martin (eds.)   
The World Atlas of Language Structures Online. Leipzig: Max Planck Institute for Evolutionary Anthropology. (Available online at http://wals.info/chapter/102, Accessed on 2014-08-10.)

Siewierska, Anna & Dik Bakker 2005. The agreement cross-reference continuum. In Casper de Groot & Kees Hengeveld (eds.), *Morphosyntactic expression in Functional Grammar*, 203–248. Berlin: de Gruyter Mouton.

Silva-Corvalán, Carmen 1994. *Language contact and change: Spanish in Los Angeles*. Oxford: Oxford University Press.

Silverstein, Michael 1976. Hierarchy of features and ergativity. In: Dixon, R.M.W. (ed.) *Grammatical categories in Australian languages.* New Jersey: Humanities Press, 112-171.

Skeat, Walter 1881-7. (ed.) *The Gospel according to St. Matthew, St. Mark, St. Luke and St. John*. Cambridge. Reprint: Darmstadt: Wissenschaftliche Buchgesellschaft.

Smessaert, Hans, Joop van der Horst, & Freek van de Velde 2017. Another look at the Germanic Sandwich. Leuvense Bijdragen 101: 77-81.

Soltan, Usama 2007. On formal feature licensing in minimalism: Aspects of Standard Arabic mor-phosyntax. University of Maryland PhD.

Souza, Elizete Maria 2007. O uso do pronome `eles’ como recurso de indeterminação de sujeito. MA, Belo Horizonte.

Sportiche, Dominique 1988. A Theory of Floating Quantifiers and its Corollaries for Constituent Structure, *Linguistic Inquiry* 19.2: 425-451.

Sportiche, Dominique 1996. Clitic Constructions. In Johan Rooryck and Laurie Zaring (eds), Phrase structure and the lexicon, 213-276. Dordrecht: Springer.

Stepanov, Arthur. 2007. The end of CED? Minimalism and extraction domains. *Syntax* 10: 80-126.

Stockwell, Robert 1977. Motivations for Exbraciation in Old English. In Charles Li (ed), *Mechanisms of syntactic change*, 291-314. Austin: University of Texas Press.

Stoelke, H. 1916. *Die Inkongruenz zwischen Subjekt und Prädikat im Englischen und in den verwandten Sprachen*. Marburg diss.

Stowell, Tim 1978. What was there before there was there? In D. Farkas et al. (eds.) Papers from the Fourteenth Regional Meeting of the Chicago Linguistics Society, 457-471.

Sullens, I., ed. 1983. *Robert Mannyng's Handlyng Synne*. Medieval & Renaissance Texts & Studies. Binghampton.

Suñer, Margarita 1988. The Role of Agreement in Clitic-Doubled Constructions. *Natural Language and Linguistic Theory* 6.3: 391-434.

Sweet, Henry 1871 [1934]. *King Alfred's West-Saxon Version of Gregory's Pastoral Care*. London: Oxford University Press.

Takita, Kensuke 2019. Labeling for linearization. TLR 37.1: 75-116.

Takita, Kensuke, Nobu Goto, & Yoshiyuki Shibata 2016. Labeling through Spell-Out. *The Linguistic Review* 33.1: 177-98.

Taraldsen, Tarald 1980. On the NIC, vacuous application and the that-trace filter. Indiana University Linguistics Club.

Tauli, Valter 1958. *The Structural Tendencies of Languages*. Helsinki.

Thompson, W. M., ed. 1958. *Þe Wohunge of Ure Lauerd*. London: Oxford University Press, EETS 241.

Thorpe, Benjamin 1861. *Anglo-Saxon Chronicle I and II.* London: Longman.

Toribio, Jacqueline 2000. Setting parametric limits on dialectal variation in Spanish. *Lingua* 110: 315-341.

Traugott, Elizabeth 1972. *A History of English Syntax*. New York: Holt, Rinehart, and Winston.

Traugott, Elizabeth 2017. ‘Insubordination’ in the light of the Uniformitarian Principle. *English Language and Linguistics* 21.2: 289-310. doi:10.1017/S1360674317000144

Traugott, Elizabeth Closs and Ekkehard König 1991. The semantics-pragmatics of grammaticalization revisited. In Elizabeth Traugott and Bernd Heine (eds), *Approaches to Grammaticalization I*, 189-218. Amsterdam: Benjamins.

Travis, Catherine E. 2007. Genre effects on subject expression in Spanish: Priming in narrative and conversation. *Language Variation and Change*, 19: 101-135.

Travis, Lisa 1984. Parameters and effects of word order variation. MIT PhD.

Truswell, Robert 2007. Locality of Movement and the Individuation of Events. Doctoral dissertation, University College London.

Truswell, Robert 2011. Events, phrases and questions. Oxford: Oxford University Press.

Valian, Virginia 1991. Syntactic subjects in the early speech of American and Italian children. *Cognition* 40. 21-81.

Van der Auwera, Johan & Frens Vossen 2016. Jespersen cycles in the Mayan, Quechuan and Maipurean languages. In Elly van Gelderen (ed.), *Cyclical Change Continued*, 189-218. Amsterdam: John Benjamins. doi.org/10.1075/la.227.07auw

Veenstra, Tonjes 2014. The copular system in Surinamese creoles. Workshop on Copulas, Bologna.

Venneman, Theo 1974. Topics, Subjects, and Word Order. In J.M. Anderson & C. Jones (eds), Historical Linguistics I, 339-376. Amsterdam: John Benjamins.

Vindenes, Urd 2018. Cyclic renewal of demonstratives. *Studies in Language* 42.3: 641-668.

Visser, F. 1963 1973. *An Historical Syntax of the English Language, 3 Volumes*. Leiden: Brill.

Vogelaer, Gunther de, Annemie Neuckermans 2002. Subject Doubling in Dutch. *STUF* 55.3: 234-258.

Vossen, Frens & Johan van der Auwera 2014. The Jespersen cycles seen from Austronesian. In Maj-Britt Mosegaard Hansen and Jacqueline Visconti (eds), *The Diachrony of Negation*, 47-82. Amsterdam: John Benjamins.

Warner, Anthony 1982. *Complementation in Middle English and the Methodology of Historical Syntax*. London: Croom Helm.

Weir, Helen 1986. Footprints of yesterday’s syntax: Diachronic development of certain verb prefixes in an OSV language (Nadëb). *Lingua* 68: 291-316.

Weiß, Helmut 2005. Inflected Complementizers in Continental West Germanic Dialects. *Zeitschrift für Dialektologie und Linguistik* 72: 148-166.

Weiß, Helmut 2007. A question of relevance: Some remarks on standard languages. In Martina Penke, Anette Rosenbach (eds), *What Counts as Evidence in Linguistics: The case of innateness*, 181-208. Amsterdam: Benjamins.

Weiß, Helmut 2019. Rebracketing and the Early Merge Principle. *Diachronica* 36.4: 509-545.

Willis, David 2007. Specifier-to-Head Reanalyses in the Complementizer domain: evidence from Welsh, *Transactions of the Philological Society* 105.3, 432-480.

Willis, David, Christopher Lucas, & Anne Breitbarth (eds) 2013. *The History of Negation in the language of Europe and the Mediterranean*. Oxford: Oxford University Press.

Wilson, Daniel 2018. *Copular and Existential Sentences in Biblical Hebrew.* Dissertation, University of the Free State.

Wind, Maarten de 1995. Inversion in French. Groningen: Groningen Dissertations in Linguistics.

Wood, Johanna. 2007. Is there a DP in Old English? In *Historical linguistics 2005: Selected papers fromthe 17th International Conference on Historical Linguistics*, ed. Joseph C. Salmons & Shannon Dubenion-Smith, 167–87. Amsterdam: John Benjamins.

Woods, Rebecca & Sam Wolfe (eds) 2020. *Rethinking Verb Second.* Oxford: Oxford University Press.

Yanagi, Tomohiro 2008. On the Position of the OE Quantifier *Eall* and PDE *All*, *English Historical Linguistics 2006, Volume I: Syntax and Morphology*, ed. by Maurizio Gotti et al., 109-124. Amsterdam: John Benjamins.

Yanagi, Tomohiro 2012. Some Notes on the Distribution of the Quantifier *All* in Middle English, *Middle and Modern English Corpus Linguistics: A Multi-Dimensional Approach*, ed. by Manfred Markus, et al., 141-156. Amsterdam: John Benjamins.

Zdrojewski, Pablo & Liliana Sánchez 2014. Variation in accusative clitic doubling across three Spanish dialects. *Lingua* 151: 162-176.

Zepeda, Ofelia 1983 [1994]. *A Papago Grammar*. Tucson: University of Arizona Press.

Zwart, Jan-Wouter 2005. Verb second as a function of Merge. In Marcel den Dikken and Christina Tortora (eds), The Function of Function Words and Functional Categories, 11-40. Amsterdam: Benjamins.

1. Because the status of the Modern French markers is debated, I use 1S, 2S, etc. to gloss them. [↑](#footnote-ref-1)
2. Akkuş, Salih, & Embick use IND(cative) and PROG(ressive) as a gloss for *de* where Kareem (2016: 39) uses IND for both. I follow the latter’s use. [↑](#footnote-ref-2)
3. In this corpus, the doublings are always transcribed with a comma. [↑](#footnote-ref-3)
4. Native speakers of American English, in syntax and grammar classes. [↑](#footnote-ref-4)
5. <https://www.ling.upenn.edu/hist-corpora/PPCME2-RELEASE-4/index.html> [↑](#footnote-ref-5)
6. The reverse order of the verbs is also possible in (1) and (2), i.e. *kon doen*, as is typical for subordinates. [↑](#footnote-ref-6)