Clausal Modification in Old English:
The Case of the Correlative

A Forum Paper by

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Abbreviations

x.y.z.	gender.case.number
m.	masculine
f.	feminine
n.	neuter
n.	nominative
a.	accusative
d.	dative
g.	genitive
FRC	free relative clause
IHR	internally headed relative
MC	matrix clause
ME	Middle English
NRC	non-restrictive relative clause
OE	Old English
PDE	Present Day English
RC	relative clause
RRC	restrictive relative clause

Chapter One

Introduction and Issues

1.0 Aims and Issues

This study has two goals. The first is a simple one: to provide a syntactic and semantic analysis of correlative constructions in Old English (OE). The analysis proposed here carries with it, however, interesting implications, such as the existence of internally headed relatives in OE, the long-distance relationship of elements across clauses, and the way in which clauses are combined. The second—and much broader—goal of this work, then, is to investigate the nature of clausal modification and clause combining in the history of English.

It has long been noted that a major syntactic characteristic of OE is the amount of repetition across clauses. That is, subordinate clauses appear to be connected to their matrix clauses by the repetition of certain elements. In traditional grammatical studies (e.g. Mitchell 1985; Carkeet 1976), constructions of this type are termed *correlatives* when the subordinate clause is an adverbial. In modern generative grammar, the term *correlative* has been used to describe certain relative clause constructions in which the modifying clause is not adjacent to its head, or antecedent (Hale 1976; Keenan 1985; Dayal 1988; Srivastav 1995; Bianchi 2001). The central topic of this study is the latter type of correlative; I will use the term *correlative adverbial* when referring to the former. However, I will show that the distinction is merely descriptive—correlatives of both type have uniform syntactic and semantic properties, and their adverbial or adjectival (relative) status is derived independently.

The OE correlative has received very little attention in the generative literature, although very similar constructions have been examined in Vedic and Indo-European (Kiparsky 1995), Latin and Greek (Bianchi 2001), Indic languages such as Hindi (Dayal 1988; Srivastav 1995), and Australian languages such as Walpiri (Hale 1976).[1] I will show that these seemingly exotic constructions played a central role in the syntax of the earliest forms of English.

A typical correlative construction is given in (1). Here we see that a relative-like clause appears on the left-periphery of the sentence. In this case *þone stan* is the head of the relative, appearing clause initially. It is interpreted as the internal argument of the verb *awurpon*, which I indicate, temporarily, by an empty category *e* in this position. This clause is followed by a matrix clause; the two clauses are divided by a comma in most textual editions of OE, which I interpret as an intonation break. Crucially, the first element in the subordinate clause is co-referential with a resumptive element in the matrix clause. There are no conditions on the structural position of the resumptive element.

(1)	þone	stan$_1$	þe	ða	wyrhtan	e$_1$	awurpon,
	the.*m.a.s*	stone	Comp	the	workers		rejected
	þes$_1$	is	becomen	on	heofod		
	this.*m.n.s.*	has	become	on	head		

'The stone that the workers rejected, (this) has become the corner stone.'

We can be easily fooled by the English translation, which has a reasonably straightforward structure: a complex DP, containing a relative (*that the workers...*), serves as a topic, followed by the matrix clause which allows an optional resumptive

[1] Keenan (1985) offers correlatives from other languages.

pronoun. The OE construction is subtly but crucially different. The head of the relative clause, *þone stan*, is case-marked according to its role as the internal, accusative-marked object of the relative clause predicate (*awurpon*). Thus, by all appearances, the head of this relative is generated internally to the relative clause. I will provide several arguments for this conclusion throughout this study. Suffice to say, once we accept the internally headed analysis, the syntax and semantics of the correlative becomes a much more interesting problem.

Several questions arise immediately concerning the basic syntax and semantics of the correlative. First, how is the internal head related, both semantically and syntactically, with the rest of the correlative (subordinate) clause? Second, is there any formal relationship between the correlative and the resumptive element in the matrix clause? Third, what is the relationship between the correlative and matrix clause—is the correlative embedded within the matrix clause or outside of it?

These three main questions bear on larger issues. The first has to do with the interpretation of the internal head. We might suspect that its movement to the left edge of the correlative clause is similar to the movement of relative operators in canonical RCs. I will show, however, that this is not the case. Instead, it will be proposed that the internal head moves for purely syntactic reasons, but that the surface position of the head is crucial to determining its relationship with the resumptive element in the matrix clause. Under this proposal, a semantic analysis of correlatives is put forward that derives semantic relationships between elements across clauses.

The syntactic nature of these clauses also raises questions about the way clauses combine in OE. I will show that subordination in the earliest forms of OE—and its

Common Germanic predecessor—is limited to the correlative construction, which involves the adjunction of a CP, unvalued for certain features, to the matrix clause. The rise of embedded subordinate clauses—such as embedded RCs and CP arguments—involves the concomitant emergence of relative operators and the V2 phenomenon. I will show that by the time of extant OE texts, the language had both non-embedding CPs, as well as embedding CPs, each with their own unique feature specifications. This historical change finds motivation in the replacing of the OE complementizers *þe* and *swa* with the modern *that/þæt* complementizer. Moreover, this account of the properties of Comp in the history of early English adds new evidence to the long-standing debate on the rise of hypotaxis from parataxis.

1.1 Summary

In Chapter 2, I present a typology of OE relative clause constructions. There I provide several parameters along which to classify OE RCs: sentential position, headedness, and relativization strategy. We will see there are implications found among such parameters. For instance, the headedness of correlatives can predict its sentential position as well as its relativization strategy. In Chapter 2 we will investigate embedded as well as non-embedded RCs, with a focus on the syntax of correlatives.

Chapter 3 begins with an account of the generative literature on the nature of headedness in OE RCs. There I will outline the proposals of Harbert (1983), who argues for an externally headed analysis of correlatives, as well as Hirschbühler and Rivero (1983), who adopt the *Matching Hypothesis* of Grimshaw (1977) to account for correlatives. I will critique both accounts, and show that the additional mechanisms and

principles they require are unnecessary. In doing so, I present a syntactic analysis of my own for correlatives, determining their macro- and internal structure, especially in relation to the matrix clause.

Chapter 4 provides a semantic analysis of correlatives. We will see that attempts at accounting for the semantics of similar constructions in Hindi (Srivastav 1991) are not sufficient for OE. I present two logical options for the interpretation of OE correlatives. The first option construes the correlative as an independent clause at LF, much like PDE appositives. This proposal requires a mismatch between semantic and syntactic representations. The second option develops a semantic function for the OE, non-embedded complementizers (*þe/swa*) which connects the internal and the resumptive element semantically, and composes the subordinate and matrix clauses together at LF.

I conclude the study in Chapter 5 with a diachronic analysis of Comp from pre-OE to late OE. As noted above, this analysis will connect various simultaneous innovations in the syntactic functions of Comp in OE. There I suggest that the OE available to us today represents an intermediate stage in the development of clause combining strategies in English—when both embedded and non-embedded CPs are fully productive in the language's grammar.

Chapter Two

A Typology of Old English Relatives

2.0 Introduction

Old English (OE) relative clauses (RCs) take many forms, far more than modern English (PDE). The constellation of relative and relative-like constructions includes those familiar to PDE and those which display different properties. It is, of course, the latter which are the focus of this study. This chapter provides an overview of RCs in OE, paying special attention to the parameters which define RCs in the language:

(1) *OE RC parameters*

(i) sentential position: matrix-internal vs. peripheral

(ii) headedness: external vs. internal head

(iii) relativization: operator movement vs. no operator movement

I give explicit criteria for these parameters below. For much of the typology I will be relying on the work of Allen (1977; 1981), the most thorough investigations of these data to date. In addition, I offer data of my own and provide an updated description of these observations. More importantly, I will demonstrate implications of these observations and give an analysis in the remainder of the study.

Some terminological clarification is in order at this point. I reserve the term *relative clause* (RC) to refer to the modifying element—that is, the CP which contains the modifying sentence (IP), some type of Comp, and in some instances a relative operator.

Crucially, *RC* does not include the head—at least when that head is external. I will use *complex DP* to describe the constituent that contains both the external head and the RC.

2.0.1 *A note on restrictiveness*

This typology includes restrictive relative clauses (RRCs) and non-restrictive relative clauses (NRCs, or *appositive relatives*), although it should be made clear that the distinction is difficult to determine from OE data. Mitchell (1959; 1985) concludes that none of the various types of RCs are exclusively restrictive or non-restrictive. That is, there are no syntactic cues for restrictiveness. Allen (1977) confirms this conclusion. I will assume, then, that all RC constructions can limit their heads semantically. Since there appears to be no syntactic distinction between restrictives and appositives, I include both in the data sets.

2.1 The parameters

In this section I briefly outline the parameters which will serve as a descriptive basis for the typology of OE RCs presented in this chapter. I will illustrate some of these parameters using PDE. However, since PDE does not exhibit the full range of parametric options, I will give examples of such parameter settings when the OE typology is presented in §2.3.

2.1.1 *RC position: matrix-internal vs. left-peripheral*

RCs in OE are found in three basic positions with respect to the matrix clause (MC): embedded within the matrix clause, modifying an adjacent nominal (2a); in right-

peripheral position (2b); and in left-peripheral position, which as we will see is the correlative (2c). In the latter two types, the RC is not adjacent to the matrix internal nominal (labeled NP), which it modifies at surface structure.

(2) a. $[_{MC} \ldots [[NP][\ldots RC \ldots]] \ldots]$ *Matrix-internal (embedded)*

b. $[_{MC} \ldots [NP] \ldots]$ $[\ldots RC \ldots]$ *right-dislocated*

c. $[\ldots RC \ldots]$ $[_{MC} \ldots [NP] \ldots]$ *left-peripheral (correlative)*

2.1.2 *Headedness: external vs. internal*

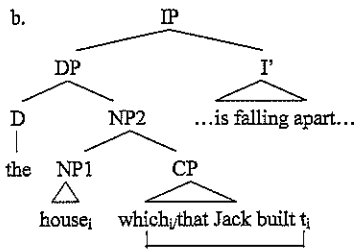
The second parameter relevant to OE relative clauses is the location of the head, whether it is external or internal to the RC or not. This question is odd in the first place, since it is generally not assumed that Germanic languages, let alone English and its predecessors, had internally-headed relatives (IHRs). However, a close examination of the characteristics of OE left-peripheral RCs raises this surprising possibility. In this section I note a few background assumptions about headedness in general, based on standard treatments of RCs (for instance Demirdache (1991), McCawley (1988), et al.; for different approaches see Kayne (1994) and Bianchi (2001); for discussion of these approaches see Chapter 3).

The head (or *antecedent*) of a (restrictive) RC is the nominal element which is being modified by the RC itself, which is a sentence of some sort. In this study, the term *head* will refer to the element modified by the RC, not to the X-bar theoretic term referring to the *head of a projection*. When the latter use is relevant, the distinction will be made clear.

Taking PDE RRCs as an example, the head of the RC in (3a) is *house*, and the RC is *which/(that) Jack built*; this RC restricts, or limits, the referent of the head. Standard analyses of RRCs argue for the structure below, where the head noun is sister to a CP adjunct, which contains the modifying sentence (see Demirdache 1991 for this proposal).

(3) a. $[_{DP}$ The $[_{NP}$ house $[_{CP}$ which/that Jack built $]]]$ is falling apart.

b.



In this analysis, the RRC is an adjunct to the noun. The dominating NP2 is then further headed by a definite marker that identifies one individual that has this intersection of properties—i.e. the unique x in the intersection of the predicates *[house]* and *[that Jack built]*. I will turn to the CP-internal mechanics of this intersection in the next section on relative operators.

Crucially in PDE, the headedness parameter is set so the nominal head is external to the RC—the CP which modifies the head (see Kayne 1994 for an alternate proposal on headedness in English RCs). The relative operator, *which*$_i$, while co-referent with the head, carries only agreement features (i.e. [+animate], etc.) and binds a semantic variable, which receives its interpretation under assignment (Heim and Kratzer (1998)). Thus the lexical item being modified by the RC is external to the CP. There is, of course, another

logical option, whereby the head nominal is internal to the RC IP, in which case there is no external head for the CP to adjoin to. We will turn to such RCs in OE after examining externally headed RCs in the language.

2.1.3 *Relativization: operator movement vs. no operator movement*

The internal structure of the relative clause CP can involve the movement of an operator or not. In PDE, it is often assumed that either an overt or null operator moves from a RC internal position to $[\text{Spec, C}]_{RC}$ where, in the semantic component, it converts the RC into a predicate which can thereby intersect, via predicate modification, with the NP head. For instance, in the PDE sentence in (4a), the relative pronoun *which* (an overt operator) leaves a variable in the RC IP. Further rules at LF then interpret this RC IP as an open sentence, a predicate (see Heim and Kratzer 1998 for one approach). Syntactically, the relative pronoun (RP) must agree in certain phi-features with the external head, thus (4b) is out since the animacy of the RP conflicts with that of the head.

(4) a. $[_{DP}$ The $[_{NP}$ house$_i$ $[_{CP}$ which$_i$ $[_{c'}$ Jack built t$_i$ $]]]]$ is falling apart

b. *The house who Jack built is falling apart.

It is also argued, for reasons such as subjacency violations, that PDE allows null operators in RCs such as (5), which has an overt C^0, *that*.

(5) $[_{DP}$ The $[_{NP}$ house$_i$ $[_{CP}$ Op$_i$ $[_{c'}$ that Jack built t$_i$ $]]]]$ is falling apart

Crucially, a relative operator (whether overt or null) is a moved element, landing in [Spec, C]. As we will see, OE exhibits a relativization strategy involving movement of RPs, but I will show that another analysis is needed for certain matrix-internal RCs and the correlative construction.

2.2 The typology

This section describes the various types of relative clauses in OE, dividing them according to their sentential position—matrix-internal (§2.2.1), right-peripheral (§2.2.3), and left-peripheral (§2.2.5). Within each of these sections I will describe the RCs with respect to the parameters of headedness and relativization.

2.2.1 *Matrix-internal (embedded) relatives*

The OE relative clause most familiar to speakers of PDE is that which modifies an adjacent nominal, where the CP is embedded within the MC. In this section I will also introduce and explain some basic properties of OE syntax that relate to RC formation. Matrix-internal relatives have three basic configurations, which depend on the material that appears in C^0 and [Spec, C]: *þe*-RCs, *se*-RCs, and *se-þe* RCs. I will discuss these in turn.

2.2.1.1 *þe*-RCs

The primary OE complementizer is the indeclinable *þe* 'that.' Following Kiparsky (1995) and van Gelderen (1997) I place *þe* as head of CP. *þe*-RCs appear simply with the complementizer *þe*, much like PDE *that*-RCs (Allen 1977:76). These are

the most common OE relatives (Allen 1977: 75; Traugott 1992). In the examples that follow, the head of the RC is in bold, and the RC itself is bracketed. In OE I represent the gap, or relativized position, in the RC with an empty category *e* co-indexed with the head.

(6) *PDE that-RCs*

The house [$_{CP}$ Op$_1$ [$_{C'}$ that Jack built t$_1$]] is falling apart

(7) *OE þe-RCs*[2]

a. Gemyne he ðæs **yfeles$_1$** [ðe he e$_1$ worhte]
remember he the.*gen.sg.* evil-*gen.sg.* C he wrought

'Let him remember the evil that he wrought'
[CP 25.54]

b. ...be ðam **ðrim ðingum$_1$** [ðe se Hælend e$_1$ sæde]
about those three things.*d.p* C the saviour said

'...about the three things that the saviour said.'

c. Hi getacniað ða geleafullan on godes **geldunge$_1$**
They betoken the faithful in God's congregation

[ðe e$_1$ mid geleafan underfoð ða eladan gecyðnysse]
C with faith receive the old testament

'They betoken the faithful in God's congregation that with faith receive the Old Testament.'
[Alc.S.XV.56]

The gap in the *þe*-RC can also be the object of a preposition. However the preposition always appears as though it is stranded:

(8) a. Ac he sylf asmeade ða **up-ahefednysse$_1$** [ðe
But he self devised the presumption C

[2] All data, unless cited otherwise, is from Allen (1977).

he	ðurh	e_1	ahreas]
he	through		fell

'But he himself thought up the presumption that he fell through'
[Alc.Rh.XIIIp.192]

b. …ðam	**burgum**$_1$	[ðe	he	on	e_1	geworhte	his	wundra]
those	cities	C	he	in		wrought	his	wonders

'…those cities that he wrought his miracles in'
[Alc.P.XVII.54]

Allen shows that it is not possible for *þe* to be preceded by a preposition in *þe*-RCs. Preposition stranding, however, was not possible in OE (Allen 1977). Therefore, these can be cases of apparent preposition stranding only, and therefore we cannot propose the movement of a null relative operator in *þe*-RCs as is proposed in PDE *that*-RCs. Allen also shows that *þe*-RCs violate other conditions on movement, such as crossing a subject and moving through multiple tensed clauses. Thus Allen proposes a rule of *deletion under identity*, whereby a nominal is generated in the RC gap, and deleted when it is co-indexed with the head, as shown in (8a'):

(8) a.' Ac	he	sylf	asmeade	ða	**up-ahefednysse**$_1$		[ðe
But	he	self	devised	the	presumption		C
he	ðurh		~~ða~~	~~**up-ahefednysse**$_1$~~		ahreas]	
he	through		the	presumption		fell	

Relativization, then, is not established through operator movement in *þe*-RCs.[3] This fact will bear on our semantic analysis correlatives in Chapter 4 and on our discussion of the historical development of RCs in early English in Chapter 5.

[3] van Kemenade (1987) argues that *þe*-RCs do involve operator movement of a phonologically null counterpart of the personal pronoun.

2.2.1.2 *se*-RCs

The second type of matrix-internal RC is the one in which a simple demonstrative pronoun is used as a relative pronoun. The use of demonstratives as relative pronouns, instead of *wh*-words as in PDE, is very common across Germanic languages. Below, (9) shows the paradigm of demonstrative pronouns in OE:

(9)

	Singular			*Plural*
	Masc.	*Neut.*	*Fem.*	*All genders*
Nom.	se	þæt	seo	þa
Acc.	þone	þæt	þa	þa
Gen.	þæs	þæs	þære	þara, þæra
Dat.	þam	þam	þære	þam
Inst.	þy	þy		

Like the PDE relative pronouns *who*, *whom*, and *which*, OE relative pronouns (RPs) move from a position within the RC to the left-periphery of the RC. These are traditionally labeled *se*-RCs. Examples are given below, with the head in bold and the movement of the RP shown by a trace:

(10) *Se*-relatives

a. Ac	ge	onfoð	ðæm		**mægene**$_i$	**Halges**
but	you.*s.*	receive	the.*n.d.s.*		power-*n.d.s.*	holy-*m.g.s.*
Gastes	[se$_i$			t_i	cymed ofor	eow]
Ghost-*m.g.s*	DEM.*m.n.s.*				comes over	you.*p*

'But you receive the power of the Holy Ghost, who comes over you.'
[Blicking p.119]

b. Her feng to Dearne rice **Osric**$_i$
here succeeded to Deira kingdom Osric-*n.*

[ðone$_i$ Paulinus ær t_i gefullode]
DEM.*m.a.s.* Paulinues earlier baptized

'In this year Osric, whom Paulinus had earlier baptized, succeeded to the kingdom of Deira.'
[PC 643]

c. Ða man ofsloh ðes Caseres **gerefan**$_i$ [se$_i$
then one killed the emperor's reeve-*m.a.s.* DEM.*m.n.s.*

was Labienus gehaten t_i]
was Labienus called

'Then the king's reeve, who was called Labienus, was killed.'
[PC Prologue]

Evidence for movement follows standard tests, as shown by Allen (1977; 1981). Case marking will be the primary diagnostic. As can be seen in (10), the demonstrative pronoun is case marked appropriate to the gapped position in the RC, represented by a trace above. That is, in (10a) the gap position is the subject of the RC. The head of the RC is a genitive, *Halges Gastes*. The demonstrative, however, is in the nominative case, which is the case it is assigned in the lower clause. Allen notes, along with Harbert (1981) and Hock (1988), that there are a few counterexamples of *se*-relatives in which the relative pronoun is found with case appropriate to the matrix clause—that is, the same case as the head. This is known as *attraction*. I will return to the matter when I discuss *inverse attraction* in Chapter 3. I will continue to gloss the moved element as DEM, while now distinguishing its function in RCs as a *relative pronoun* (RP).

It should be noted that the RC in (10a) could simply be a separate sentence, since there is no overt complementizer signaling it as a subordinate clause. There is clearer

evidence of the fronting of the relative pronoun out of the RC in (10b), where the RP has accusative case but does not appear in object position in the RC. Recall that OE often has SOV order in subordinate clauses, so that the object would appear adjacent to the verb. However, in (10b) it is fronted to the beginning of the RC; I assume that this position is [Spec, C], an assumption that will be motivated when we look at *se-þe* RCs. SOV order is not clear in (10a,c), since the inflected verb does not appear clause-finally. However, there is much variation of word order in OE clauses, a fact that does not pose serious arguments against the movement analysis of RPs.

Allen (1977; 1981) makes an important argument for a movement analysis of the demonstrative in *se*-relatives that relies on pied-piping in OE. As noted, preposition stranding was not available in OE with moved overt NPs, wh-constituents, or RPs.[4] When an object of a preposition was fronted, the entire PP was raised (Allen 1977; van Kemenade 1987; Fischer et al. 2000). While negative evidence is not available for OE, no *se*-RCs have been found with preposition stranding (Allen 1977; 1981):

(11) *Pied-piping in se-relatives*

a. Weorðian we eac **ða** **claðas his** **hades**
Honor we also the clothes his person-*m.g.s.*

[[of ðæm]$_i$ wæs ure gekind t_i geedneowod]
by DEM.*m.d.s.* was our race renewed

'Let us also honour the clothes of his person, by which our race was renewed.' [Blickling; Allen p83]

[4] Fischer et al. (2000) note that stranding was possible with the locative pronoun *þær*.

b. ðæt he us ðingigewið **ðone**
that he us.*d* intercede with the.*m.a.s.*

Heofonlican **Cyning,** [[for ðæs]$_i$ naman
heavenly.*m.a.s.* king for DEM.*n.g.s.* name

he t_i ðrowode]
he suffered

'That he intercede for us with the Heavenly King, for whose name he suffered.' [Alc.Tg.XXIX; Allen p83]

The base structure of the RC in (11b) would appear as in (11c), where the PP *of ðæm* is a constituent of the subordinate IP:

(11) c. [$_{IP}$ he [$_{VP}$ [$_{PP}$ for ðæs naman] ðrowode]]]
he for DEM.*n.g.s.* name suffered

= 'for whose name he suffered' [Hypothetical]

Given that preposition stranding is unattested in these contexts, pied-piping is conclusive evidence for movement in *se*-RCs.

2.2.1.3 *Se-þe* RCs

The last type of matrix-internal RC in the language combines the relative pronoun (*se* and its declensions) with the invariant complementizer *þe*. This construction is traditionally termed a *se-þe* RC. The same movement and case facts apply here as with *se*-RCs, only that both C^0 and [Spec, C] are lexically filled. Note that PDE does not allow

a "doubly-filled' Comp when C^0 is a complementizer, while OE does.[5] The following are some examples of *se-þe* RCs in OE:

(12) a. ure Drihten araerde **anes** **ealdormannes**
our Lord raised a.*gen* alderman's

dohtor [seo$_1$ þe t_1 laeg dead]
daughter.*f.a.s.* DEM.*f.n.s.* C lay dead

'Our Lord resuscitated an alderman's daughter who lay dead'
[Allen 1977:87]

b. and sendon to **domiciane,** ðam deoflican cæsere
and sent to Domitian.*d.* the devilish cæsar

[se$_i$ ðe t_i æfter Nero genyrwed ða cristenan]
DEM.*m.n.s.* C after Nero oppressed the Christians

'...and sent to Domitian, that devilish Cæsar, who oppressed the Christians after Nero.'
[Allen 87]

In each of these examples the head of the RC carries different case marking from the relative pronoun. For instance, in (12a), the head *dohtor* is in the accusative case, while the co-referent relative pronoun is the nominative demonstrative, *seo*. Nominative, of course, is the case required by the syntactic function of the demonstrative in the RC in (12a). So just as with *se*-RCs, the relative pronoun has case appropriate for the RC gap. Allen notes that *se-þe* RCs may also exhibit case attraction; in these instances, the relative pronoun has the same case as its antecedent. I will return to the implications of this in Chapter 3, when I discuss previous accounts of OE relatives.

[5] PDE does, of course, allow moved elements in both C^0 and [Spec, C] in one derivation giving such sentences as *Who has Bill seen?*. However **The man [who that Bill saw] left* shows that a complementizer cannot co-occur with an operator in [Spec, C].

Just as with *se*-RCs, *se-þe* RCs exhibit pied-piping, which Allen (1977) adduces as evidence for the demonstrative having undergone movement:

(13) a. Eala **ðu** **wundorlice** **rod,** [$_{CP}$ [$_{PP}$ on ðæra]$_1$ [$_{C'}$ ðe
Hail thou wondurful cross on DEM.*f.d.s.* C

[$_{IP}$ Christ wolde t_1 ðrowian]]]
Christ would suffer

[Allen 88]

b. Wa **ðam** **men** [$_{CP}$ [$_{PP}$ ðurh ðone]$_1$ [$_{C'}$ ðe byð
Woe the.*d* men.*d.* through DEM.*m.d.s.* C is

[$_{IP}$ mannes sunu t_1 belæwed]]]
man's son betrayed

'Woe to the man through whom the son of man is betrayed'
[Allen 88]

In each case, the PP in [Spec, C] has moved from the lower IP as a result of being pied-piped along with the relative pronoun. The relative pronoun carries the case appropriate for the RC naturally, since it is the object of the moved P head.

2.2.3 *Right-peripheral relatives*

The second surface position in which OE relative clauses are found is at the right-edge of the sentence, as in (14). Again, the nominal head is shown in bold, and brackets indicate the RC. In these RCs, the head is not adjacent to the RC since matrix-clause material intervenes.

(14) *Right-peripheral RCs*

a. [$_{CP}$ ða ongan ic **ða** **boc** wendan on Englisc]
then began I the book read in English

[$_{RC}$ ðe is genemed on Læden Pastoralis]
C is named in Latin *Pastoralis*

'Then I began to read in English the book that is called *Pastoralis* in Latin.'
[CP 7.17; my translation]

b. [$_{IP}$An Ælmihtig **God** is], [ðone$_i$ ðe Bartholomeus t_i bodað]
An almighty God is DEM.*m.a.s.* C Bartholomew bid

'God, whom Bartholomew bid, is almighty'
[ÆCHom i.464]

c. [$_{CP}$ wolde eac **ðone** **cyning** swilce mid ðissum
would also the.*a* king.*a.* so with these

wilwendlicum earum wuldrigan], [$_{RC}$ ðæm$_i$ ðe
temporal disitinctions glorify DEM.*m.d.s.* C

he ðæs heofonlican rices wuldor t_i openede]
he the heavenly kingdom's glory opened

'He would also glorify the king, to whom he opened the glory of the kingdom of heaven, with temporal distinctions.'

I will not provide a detailed analysis for right-peripheral RCs, except to note the following characteristics. In (14), the RCs are completely external to the matrix IP, and main clause material intervenes between the head and the RC. As we can see, this configuration is possible with restrictive as well as non-restrictive RCs: (14a) limits the referent of *ða boc* to the book called *Pastoralis*. (14b) on the other hand is a NRC as it does not limit the referent, *God*. Moreover, both *þe*-RCs (14a) and *se-þe* RCs (14b,c) can

be found in right-peripheral position. I have not found extraposed se-RCs, but these would essentially appear as separate sentences when the RP is nominative, since their surface structure is ambiguous as to a matrix or relative clause analysis. The aim of this study is not to analyze right peripheral RCs, so I will assume that these structures arise through late- or post-syntactic extraposition, whereby the RC CP is right-adjoined. Kiparsky (1995) and Carkeet (1976) note that extraposition is a common phenomenon in OE, and likens the process to heavy-NP shift whereby large phonological phrases are dislocated rightwards for prosodic reasons. Given this assumption, right-peripheral (or *extraposed*) RCs are simply PF variants of matrix-internal RCs. Note that extraposed RCs share all the same relevant properties with CP-internal relatives; they are externally headed and exhibit RP-movement in the cases of extraposed *se-þe* RCs. Crucially, we will see that right-peripheral RCs differ from left-peripheral RCs.

2.2.4 *Headedness and conclusion*

We have just reviewed the characteristics of matrix-internal and right-peripheral RCs in OE. In terms of their position: the MC-internal RC is adjacent to the head nominal and thus embedded in the matrix clause; the right-peripheral is adjoined to the head as well, and is interpreted there, but moved in the PF component rightwards. In terms of the relativization parameter, an overt RP moves to [Spec, C] in *se-* and *se-þe* RCs. In *þe*-RCs, there is no evidence for a null operator, and I have assumed a rule of deletion under identity following Allen (1977; 1981). I have not addressed the parameter of headedness. However, it is clear from all the examples adduced so far that the nominal head is external to the RC: a quick examination shows that the head always has case appropriate to the matrix clause, and shows no evidence of originating within the RC.

(15) *OE externally-headed relatives*

a. *þe-RCs*

Gemyne he	ðæs	**yfeles**$_1$	[$_{CP}$ ðe	[$_{IP}$ he	e_1	worhte]]]
remember he	the	evil.*g.s.*	C	he		wrought

'He remembers the evil that he wrought.'
[*gemyne* selects genitive]

b. *se-RCs*

Ac	ge	onfoð	ðæm	**mægene**	**Halgas**
but	you.*s.*	receive	the.*n.d.s.*	power-*n.d.s.*	holy-*m.g.s.*

Gastes	[$_{CP}$ se$_1$	[$_{C'}$ [$_{IP}$ t_1	cymed	ofor	eow]]]
Ghost-*m.g.s*	DEM.*m.n.s.*		comes	over	you.*p*

'But you receive the power of the Holy ghost, which comes over you.'
[*onfoð* selects dative]

c. *se-þe RCs*

ure	Drihten	araerde	**anes**	**ealdormannes**
our	Lord	raised	a.*gen*	alderman's

dohtor	[$_{CP}$ seo$_1$	[$_{C'}$ þe	[$_{IP}$ t_1	laeg	dead]
daughter.*f.a.s.*	DEM.*f.n.s.*	C		lay	dead

'Our lord raised an alderman's daughter who lay dead.'
[*aræde* selects accusative]

d. *se-þe right-peripheral RCs*

[$_{IP}$An	Ælmihtig **God**	is],	[ðone	ðe	Bartholomeus	bodað]
An	almighty God.*n.m.s.*	is	DEM.*m.a.s.*	C	Bartholomew	bid

'God, whom Bartholomew bid, is almighty'
[ÆCHom i.464]

In each example, the head occupies an argument position in the matrix clause, with case appropriate to that clause . In (15c), for instance, the head ***dohtor*** is the accusative

marked object of the matrix verb (the verb *araerdan* takes the accusative (Bosworth and Toller)), while the relative pronoun carries RC case, nominative, since the gap in the RC is the subject. The head is always inflected with case appropriate to the main clause, which Allen (1977) takes as prima facie evidence that these RCs are externally headed. In chapter 3, I will provide more arguments for this conclusion, based on inherent case in OE.

2.2.5 *Left-peripheral relatives: the correlative*

The final surface location in which RCs are found in OE is the left-periphery of the sentence. In the following examples, I omit brackets indicating structure, since it is precisely the structure of these constructions that is the topic of the remainder of this study. I will also leave a precise definition of *left-peripheral* for chapter 3, where I will show that such RCs are indeed outside the matrix clause. For this reason I call these constructions *correlatives*, using this term to describe an RC which appears at the beginning of the sentence, with a resumptive element, often a pronoun, elsewhere in the sentence:

(16) a. **þone** **stan**$_1$ þe ða wyrhtan awurpon,
the.*m.a.s.* stone C the workers rejected

þes$_1$ is geworden on þære hyrnan heofod
that.*m.n.s.* is become on the corner head

'The stone that the workers rejected, this has become the cornerstone.' [Bianchi (2001)]

b. and **þone**$_1$ ðe ðu nu hæfst, nis
and him.*a* C you now have, not-is

se$_1$ þin wer
he.*n.* your husband

'And him$_1$ that you now have, he$_1$ is not your husband'

c. Eft, **se** **man**$_1$ ðe went his earan þæt he ne gehyre
Again the man C turned his ear that he not hear

godes æ, his$_1$ gebed Gode andsæte
God's law his bid God.DAT

'Again the man that turned his ear so that he could not hear God's law' [ÆChom ii.528.9]

d. **ealle** **ða** **wundra**$_1$ þe he worhte, on eallum$_1$
all.*a.p.* those miracles.*a* C he wrought, on all.*n.d.p.*

he herede and wuldrode his Fæder naman
he praised and glorified his Father's name

'All those miracles that he wrought, on all those (things) he praised and glorified his father's name.' [ÆHom i.214.19]

First, the sentences in (16) are indeed one sentence not two, since there is a subordinate clause (an RC), followed by a main clause. Take, for example, (16a). The head noun, *þone stan*, is followed by the invariant complementizer *þe* and then an embedded sentence. A main clause then follows an intonation break, signaled by the comma. Below in (17) I summarize these facts in purely linear terms, since the constituency and structure of these constructions has yet to be determined.

(17) a. **head** [C [IP$_{embedded}$]] [IP/CP$_{matrix}$]

b. **þone stan** [þe [ða wyrhtan awurpon] [þes$_1$ is geworden on þære hyrnan heofod]

The resumptive element occupies a position in the matrix IP, and is co-referential to the nominal head.[6] However, the resumptive element can occur in any structural position: nominative subject (16a,b); genitive possessor (16c); or a prepositional object (16d). As noted in Chapter 1, the schema in (17) leaves several questions unanswered. First, there is the question of the relation between the head and the CP: is the head external to the CP or internal to it, i.e. in [Spec, C]? Next there is the issue of the structural configuration of the whole sentence: is the RC CP contained within the matrix IP, or somewhere external to it? In the next sections I will determine the basic structure. Chapter 3 will provide an analysis.

2.2.5.1 *Headedness*

In diametric contrast to matrix-internal and right-peripheral RCs, the correlative exhibits different case facts. The nominal head is always case-marked according to its syntactic function in the RC, never in the matrix clause. Recall that the correlative constructions show a resumptive pronoun in the MC which, in contrast to the head, *does* exhibit matrix appropriate case. So in (16a), repeated below, *þone stan* and the resumptive *þes* are in a intuitive sense both being modified by the RC since they are co-referential.

[6] The term *resumptive* is ambiguous in the literature as to whether it refers to a RC-internal pronoun (filling the gap in the RC), or a resumptive element in the matrix clause corresponding to some element external to the main clause. The latter definition is relevant here, although OE exhibits both kinds of resumptives. In this study, the distinction will be made clear by context.

(16) a. **þone** **stan**$_1$ þe ða wyrhtan awurpon,
the.*m.a.s.* stone C the workers rejected

þes$_1$ is geworden on þære hyman heofod
that.*m.n.s.* is become on the corner head

'The stone that the workers rejected, this has become the cornerstone.'
[Bianchi (2001)]

Crucially, we have defined *head* as the nominal which is being modified. So of the two candidates for head, *þes* and *stan*, the latter is the more likely. The hypothesis—which forms the basis of the analysis in Chapter 3—is that the resumptive serves to identify this nominal as an entity in the matrix clause. However, it is also the case that in certain correlative constructions, the resumptive element consists of an NP as well, not just a resumptive pronoun. To see this we first need to introduce another type of correlative in OE—the indefinite correlative. In the example below, there is a wh-word serving as the determiner of the nominal head, *stowe*. The resumptive element is *þære stowe*, also a full nominal.[7] However, under my hypothesis the head of the RC is the first occurrence of *stowe*.[8]

(18) Ond on **swa** **hwelcre** **stowe**$_1$ swa min ðrowumge
and on so which.*d.s.* place.*d* C my passion

awriten sy ond man ða mæsige, afyrr ðu,
written is and one it celebrates drive you

drihten from ðære stowe$_1$ blindness
Lord from DEM.*d.s.* place*d.s.* blindness

[7] This gives the language its typical repetitive style, a characteristic studied much by traditional grammarians (for instance Mitchell (1985) and Carkeet (1976)). I will address what this repetition means for the grammar itself in Chapter 4.
[8] I follow Allen (1997; 1980) in treating *swa…swa* as a correlative complementizer. That is, the first *swa*, an intensifier of some sort, selects for the second *swa* which is a complementizer.

'And whatever place my passion is written in and is celebrate, drive O Lord, blindness from that place' [Allen]

Now that we can see that the head is the first (and sometimes only) nominal in the sentence, we must ask whether this head is external or internal to the RC. An internal head is one which is generated in a position in the RC, rather than the argument position of the MC, the latter being the case in PDE RCs and matrix-internal and right-peripheral RCs in OE.

Allen notes that in left-peripheral RCs—which I term correlatives—the case of the head is always that which is appropriate for the RC, not the MC. The left-peripheral RCs in (16) and (18) support this observation. Take the prototypical left-peripheral RC in (16a): the head, *þone stan*, is case-marked accusative, and that is the case it would have if it were generated as the argument of the RC: the verb *awurpon* marks its object with accusative. If the head were external, it should exhibit case appropriate to the main clause, which is *nominative*. However, a resumptive occupies the MC argument position and it is marked with the nominative—*þes* is the nominative form of the (proximal) demonstrative. This fact strongly suggests that the head of the correlative is internal to the RC. This forces us to assume that the internal head moves to the beginning of the RC to derive the surface order. In the next section I will provide further evidence for the *internally-headed relative* (IHR) analysis of correlatives.

2.2.5.2 *More evidence for internal heads: pied-piping*

As noted earlier, OE does not allow preposition stranding, so that a moved argument will always pied-pipe its governing preposition. This fact provides us with a simple diagnostic for movement. We saw that in *se-* and *se-þe* RCs, the relative pronoun

(the demonstrative) exhibits pied piping and had case appropriate to the RC gap. This was taken as evidence of RP movement (see also Allen 1977). We can now apply the same test to the heads of correlatives. Based on evidence from case, we have already established that these heads are internal. We can also see, in (19), that movement of these heads causes pied-piping; moreover, I have found no examples of stranded prepositions in correlatives. In the data below, I bold the internal head, and put the whole correlative in brackets. A trace indicates the RC-internal origin of the PP. A numerical index indicates the co-reference between the head and the resumptive element.

(19) a. [[to **swa** **hwilcere** **leode**$_1$]$_i$ [swa we t_i cumað]],
to so which.*d.s.* people.*d.s.* C we come

we cunnon ðære$_1$ gereord
we know their language

'To whichever people we come, we know their language.'

b. Ond [[ðurh **swa** **hwelces** **bene**$_1$]$_i$ [swa he
and through so which.*g.s.* prayer.*g.s.* C he

gehæled t_i sy]], ðisses geleafa$_1$ & wyrcnis
healed is DEM.*g.s.* belief.*g.s.* and works

seo lefed God onfenge
be believed God acceptable

'And through whoever's$_1$ prayer he$_2$ is healed, let his$_1$ belief and works be believed acceptable to God'

c. Ond [[on **swa** **hwelcre** **stowe**$_1$]$_i$ [swa min ðrowumge
and on so which.*d.s.* place.*d* C my passion

awriten t_i sy ond man ða mæsige]], afyrr ðu,
written is and one it celebrates drive you

drihten	from	ðære	stowe	blindness
Lord	from	DEM *d.s.*	place*d.s.*	blindness

'And whatever place my passion is written in and is celebrated, drive O Lord, blindness from that place'

In each case, the whole PP appears at the beginning of the correlative. It is clear that this PP originates within the correlative, and is not a matrix clause PP. Thus the head originates within the RC and subsequently undergoes movement. I will propose in Chapter 3 that it moves to [Spec, C] of the correlative, and that the correlative itself is a left-adjoined, base-generated CP.

2.3 Conclusion

Before turning to the theoretical implications of the preceding observations, and their potential analyses, let us review the constellation of facts about OE RCs, with special attention to the distribution of the parameters introduced at the outset of this chapter:

(20) *Summary of conclusions*

	Pied-Piping with head	RP	Resump. element	Head has RC case	Head has MC case	Mvmt. of RP	Mvmt. of Head
correlative	✓		✓	✓			✓
matrix-internal[9]		✓[10]			✓	✓	

[9] Under the category *matrix-internal* I include right-peripheral RCs, since I assume they are merged syntactically within the MC, and extraposed afterwards. The fact that right-peripheral RCs share all the same parametric options as surface embedded RCs supports this assumption.
[10] An exception to this is the *þe*-RC, which does not have an RP or a null operator, so no movement is involved.

The case and pied-piping facts clearly show that the head of a correlative is internal. As we can see from (20), the properties of correlatives are complementary to those of CP-internal RCs. As a consequence, we have the following striking complementary distribution of headedness with respect to sentential position:

(21)

	Ext. Hd	Int. Hd
correlative		✓
matrix-internal	✓	

Since internal headedness and left-peripheral position occur only in conjunction, an optimal analysis will explain their co-occurrence. The question then becomes why correlatives cannot adjoin to a matrix-internal nominal. Or, alternatively, why must correlatives be internally headed? At the same time we need to explain why matrix-internal relatives cannot be internally headed. We need also to determine the category of correlatives, whether they are CPs or DPs. In the next chapter, I will review the literature, and discuss how similar data has been analyzed. The remainder of Chapter 3 will provide my answers to these questions.

Chapter 3

The Syntax of Correlatives

3.0 Introduction

In this chapter I will provide a syntactic analysis of OE correlatives. The chapter is divided into three main sections, each devoted to a particular syntactic aspect of the correlative: headedness, sentential position, and category. In each section I review and critique the relevant literature. In §3.1, I offer more evidence for the status of the head, showing that it is indeed internal to the correlative. I outline the early literature on OE relatives (Allen 1977, 1981; Harbert 1983). Specifically, I will argue against Harbert's (1983) claim that correlatives are externally headed, showing that a process of *inverse attraction* is not necessary. In §3.2 the position of the correlative with respect to the matrix clause is determined. There I will provide evidence that the correlative is adjoined to the matrix clause as a topic, in the sense of Kiparsky (1995). Next I address the category of the correlative, a major point of contention concerning OE correlatives. In §3.3 I begin by reviewing the influential *matching hypothesis* (Grimshaw 1977; Hirschbühler and Rivero 1983), but provide evidence that the correlative is a CP.

3.1 The case for internal heads

In Chapter 1 I presented evidence from case and pied-piping, as put forth by Allen (1977; 1983), demonstrating that heads of correlatives are internal to the CP. In this section I will provide further arguments for this. I begin with arguments against an externally

headed analysis, followed by further arguments in favour of internal heads based on inherent case.

3.1.1 *Harbert (1983) and (inverse) case attraction*

In a response to Allen (1981), Harbert (1983) challenges a number of the observations that formed a basis for the previous chapter. There are two major points which Harbert takes issue with. The first is the possibility of RCs without external heads (i.e. IHR), and the possibility and application of case attraction. The following section will outline Harbert's claims, followed by a critique of my own.

Harbert and Allen both note that there is the possibility of headless relatives in OE, which they call *free relatives*. Consider the sentence below, which has two possible analyses (Harbert (1983)):

(1) ðæt man for-gife ðam ðe
that one forgive DEM.*d.s.* C

wið hine gegylte
against him sins

'That one forgive him who sins against him.'
[Ver. III.170; Harbert p.549]

The question that arises here is whether the pronoun *ðam* is an (external) head, or the RP in a *se-þe* RC. If we adopt the former option, *ðam* is the external head since it is the argument of the matrix clause verb *forgife*, which takes a dative object (Bosworth and Toller 1898). This is possible since demonstrative pronouns can refer in the same way a pronoun can, with the interpretation 'that one.' In this case, (1) is a *þe*-RC. Allen argues

that this analysis is correct, since she puts a lot of stock in the evidence from case: an element's case-marking indicates which clause it belongs to (1'):

(1') *External head analysis*

ðæt	man	for-gife	ðam	[$_{RC}$ ðe
that	one	forgive	DEM.*m.d.s.*	C

wið	hine	gegylte]
against	him	sins

'That one forgive him who sins against him.'
[Ver. III.170; Harbert p.549]

The second analysis takes *ðam* as a relative pronoun (RP), and thus the whole relative clause is a *se-þe* RC, in which the RP moves to [Spec, CP]. This account is possible since in some *se-þe* RCs, the RP acquires matrix clause case. This process is known as *attraction*. A canonical *se-þe* RC would exhibit an RP with case appropriate for the RC. In the case of (1), this would be nominative. However, if we adopt case attraction then we can explain why this RP acquires MC case. (I leave an exact formulation of this process aside; I indicate the matrix internal-argument position with an empty category, *e*.)

(1'') *Free relative analysis*

ðæt	man	for-gife	e_1	[$_{CP}$ðam$_1$		[$_{C'}$ ðe	t_1
that	one	forgive		DEM.*m.d.s.*		C	

wið	hine	gegylte]]
against	him	sins

'That one forgive him who sins against him.'

There is empirical evidence for choosing between the two proposals. Pied piping is never found with pronominally headed RCs such as (1), which means that they are indeed *þe-*

RCs and that the demonstrative pronoun is not an RP but a *bona fide* external head. Harbert does not deny this conclusion of Allen's, which essentially says that a *se-þe* RC always has an external head, so that (1) cannot be a *free* or *headless* relative. Harbert claims, however, that "This conclusion seems to be contradicted, however, by an apparent systematic exception to the general rule …" (p.550). Here Harbert cites data we have seen already—correlatives (or, in Harbert and Allen's terminology left-dislocated RCs):

(2)

and	þone	ðe	ðu	nu	hæfst,	nis
and	DEM.*m.a.s.*	C	you	now	have	not.is

se	ðin	wer
DEM.*m.n.s.*	your	husband

'And him [lit. that one] who you have now, he is not your husband'
[Alc.P.V.37; Harbert 550]

Harbert argues that (2) is an exception to the rule that *se* (or a declension thereof) is only ever a *se-þe* RC when there is a preceding nominal head. So in (1), the demonstrative is the external head, not an RP, since there is no other nominal in the sentence that is coreferent with it. Under this principle, *þone* in (2) cannot be a RP. Allen, of course, concludes that in the case of (2), *þone* originates in the RC and is fronted like the RP in a *se-þe* RC:

(2') Allen's (1980) account:

and	[$_{CP}$ [þone]$_1$		[$_{C'}$ðe	ðu	nu	t_1	hæfst]],
and	DEM.*m.a.s.*		C	you	now		have

nis	se$_1$	ðin	wer
not.is	he	your	husband

'And him who you have now, he is not your husband'
[Alc.P.V.37; Harbert 550]

Harbert, however, finds the fact that OE has RCs of such different types undesirable. To him it means that *se-þe* RCs are structurally ambiguous. He notes: "Except in [left-peripheral] … position, the pronoun is the demonstrative head [i.e. (1)], while in [left-peripheral] RCs it may (and apparently must) be an RP in Comp [(2')]" (Harbert p.550). He further claims that Allen's analysis does not make "clear what principles will ensure (and explain) the unusual distribution of the two constructions" (p.551).

Instead, Harbert argues that in (2), the demonstrative pronoun *þone* is the external head, going further to claim that OE RCs "invariably require overt heads" (p.551). Harbert then must create a rule which assigns RC case to pronouns only when they are heads of left-peripheral RCs. He notes that such a process—inverse attraction—is found in other languages, illustrated in (3):

(3) *Inverse attraction*

a. *Middle High German*

[$_{NP}$ **den**	**schaz**	[$_{S'}$ den		in	ir	vater	lie]]	
the.*a.s.*	treasure	wh-*a.s.*		them	their	father	left	
der	wart	mit	ir	geteilet	hie			
it	was	with	her	divided	here			

'The treasure which their father left them, it was divided with her here'
[Mark 12:10; Harbert p.551]

b. *New Testament Greek*

[$_{NP}$ **líthon**	[$_{S'}$ hon	apedokimasan	hoi	okiodomountes]]
stone.*a.s.*	wh.*a.s.*	rejected	the	builders
houtos	egntethe	eis	kephalen	gonias
that	became	to	head	of corner

[Harbert p.552]

c. *Latin*

[$_{NP}$ **hunc**	**chlamydatum**	[$_{S'}$ quem	vides
this	uniform-wearer.*a.s.*	wh.*a.s.*	you-see
ei	Mars	iratust	
to-him	Mars	angry-is	

'this uniform-wearer whom you see, mars is angry at him.'
[Harbert p.552]

In each case, the head noun of the RC, in bold, has the case appropriate to the relative clause, and thus has case identical to the relative pronouns, here glossed as *wh*-words. This phenomenon, known traditionally as *inverse attraction*, is found, says Harbert, "almost exclusively in left-dislocated NPs." Harbert's explanation for this fact rests on his assumption that left-peripheral RCs are actually NPs, but are not in a case-marked position. For such an NP to pass the case filter, its head acquires the RP case by agreement, and that case is "projected onto the superordinate NP" (p.552). Harbert claims that this analysis can work equally for OE, since he says there are OE examples similar to (2) with actual nominals as heads. His example is the familiar correlative, repeated below as (4):

(4)

þone	**stan**$_i$	þe	ða	wyrhtan	awurpon,	
the.ACC	stone	C	the	workers	rejected	
þes$_i$	is	geworden	on	þare	hyrnan	heofod
that.NOM	is	become	on	the	corner	head

'The stone that the workers rejected, this has become the cornerstone.'

Harbert assumes that since (4) contains a nominal in the left-most position, then the head must be external here, getting case through inverse attraction. That is, *þone stan* is accusative per its RC gap, whereas its MC function is nominative. He thus maintains that OE requires overt RC heads in all positions (p.553). Harbert further claims that his solution accounts for what previously appears as "an idiosyncratic asymmetry in OE"—that is, why free relatives are only allowed in left-peripheral position. In the following section I will critique both the observations and claims put forth in Harbert (1983), and show that the "idiosyncratic asymmetry" still needs explanation.

3.1.1.1 *Response to Harbert (1983)*

I will point out several problems with Harbert's analysis, and in the process adduce more evidence for an internally headed analysis of correlatives. First, recall that Harbert cites other languages that exhibit so-called *inverse case attraction* (3). I repeat these below:

(3) *Inverse attraction*

a. *Middle High German*

[$_{NP}$ **den**	**schaz**	[$_{S'}$ den		in	ir	vater	lie]]
the.*a.s.*	treasure	wh-*a.s.*		them	their	father	left

der	wart	mit	ir	geteilet	hie
it	was	with	her	divided	here

'The treasure which their father left them, it was divided with her here'
[Mark 12:10; Harbert p.551]

b. *New Testament Greek*

[$_{NP}$ **líthon**	[$_{S'}$ hon	apedokimasan	hoi	okiodomountes]]
stone.*a.s.*	wh.*a.s.*	rejected	the	builders

houtos	egntethe	eis	kephalen	gonias
that	became	to	head	of corner

[Harbert p.552]

c. *Latin*

[$_{NP}$ **hunc**	**chlamydatum**	[$_{S'}$ quem	vides
this	uniform-wearer.*a.s.*	wh.*a.s.*	you-see

ei	Mars	iratust
to-him	Mars	angry-is

'this uniform-wearer whom you see, mars is angry at him.'
[Harbert p.552]

Harbert then presents the OE correlative (4), repeated below, as an analogue:

(4) a.

þone	**stan**$_i$	þe	ða	wyrhtan	awurpon,	
the.ACC	stone	C	the	workers	rejected	

þes$_i$	is	geworden	on	þære	hyrnan	heofod
that.NOM	is	become	on	the	corner	head

'The stone that the workers rejected, this has become the cornerstone.'

But on simple inspection, the RCs in (3) have a very different structure from that in (4). In (3), the nominals (the heads) precede a *wh*-word. Given standard accounts that relative *wh*-words are operators that raise to [Spec, CP], then these *wh*-words signal the left boundary of the RC CP in these sentences. Thus the preceding nominal *must* be external to the RC in the examples in (3). So, Harbert is correct in analyzing these RCs as externally headed, and proposing some sort of mechanism so that the heads acquire RC

case. The OE example, though, is rather different. Under Harbert's analysis, (4) is externally headed. This means that the RC in the sentence is a *þe*-RC. In such RCs, *þe* occupies C^0. However, there is no obvious reason that something else could occupy [Spec, C], since the operator is invisible.[11] Consequently, it is logically possible (and I will later show that it is in fact the case) that the nominal preceding the complementizer occupies [Spec, CP], and is most likely moved there from an argument position within the RC predicate. Harbert's error is in assuming that the examples in (3) are identical to the OE in (4).

This error causes further problems for Harbert's analysis. First, we should find preposition stranding in left-peripheral RCs, if indeed they are *þe* RCs. I have not found any such examples, nor are there any in Allen (1981). Crucially, however, there is no extant data that exhibits pied-piping in all types of correlatives. Harbert, then, is correct in saying that the lack of counter-evidence on this point does not disprove his analysis. However, other types of correlatives do display pied-piping, which *þe*-RCs conclusively do not allow. Take for example an indefinite correlative:

(5) [$_{PP}$ to swa hwilcere leode]$_1$ [$_{RC}$ swa we t_1 cumað]
to such wh-*d.s.* people C we come

we cunnon ðære gereord
we know their language

[Allen 1980, p.280]

[11] In fact, recall that Allen (1981) shows that *þe*-RCs allow subjacency violations and apparent preposition stranding, so that the existence of an operator is in doubt in the first place. This means that [Spec, C] in *þe*-RCs is an available position.

In this sentence, the head—*swa hwilcere leode*—is within a PP that has been clearly extracted from the RC. This, as I showed in Chapter 2, offers conclusive evidence for internally headed relatives. Now, Harbert, who cites this example, asserts that "This need not be taken to indicate that OE did allow null-headed [internally headed in my terms] relatives in left-dislocation position" (p.553, ft. 4). He claims that these wh-relatives are like comparatives:

(6) [for ðon swa micelle swa he læs hæfde],
because so much C he less had

swa micele hie wæron beteran.
so much they were better

'Because the less they had, the better they were.'

There is no reason, though, that this similarity means that indefinite correlatives like (6) should be seen any differently from the definite correlatives (e.g. (4)) in the aspects relevant to headedness. Harbert says that in (6) there is no empty head position, so there cannot be in (5). First, I will show in §3.3 that there is indeed no empty head position in any of the correlatives (in contrast even to Allen's analysis). Given that no left-peripheral elements—be they comparatives or correlatives—are preceded by a null head, example (6) offers no counter-evidence to this claim. In fact, I will show in §3.2.3 that adverbial adjuncts like the one in (6) are syntactically identical to correlatives.

Finally, another problem arises from the difference between OE correlatives and the constructions in (3) from Latin, Greek, and Middle High German. Harbert uses the case marking on the *wh*-words/relative pronouns in the latter examples as a mechanism for inverse attraction. Recall that he proposes that the (external) head gets RC

case by "agreeing" with the wh-word. By contrast, in OE there is no *wh*-word for the putative external head to agree with, making inverse attraction—under Harbert's formulation of such a process—difficult. Furthermore, Harbert appeals to the notion of government to explain the existence of such RCs. He says that since these complex NPs are in non-governed positions they cannot be case marked, and so the head must get case through inverse attraction. However, as I will show in §3.2 in my syntactic analysis of correlatives, these constructions do not need to be case licensed in the first place. The reason they do not need to be case marked is because they are not NPs at all, but bare CPs. We know that CPs do not require case, and possibly do not even allow for case marking.

In conclusion, I have shown that Harbert's analysis not only misinterprets the OE data in comparison to dissimilar constructions in other languages, but its formal instantiation does not hold. On a more theoretical level, Harbert's analysis is stipulative as it requires more mechanical permutations in deriving these constructions, i.e. the process of inverse attraction. As we will see, my solution requires no additional case processes and fewer stipulations, and is therefore, by Occam's Razor, a preferred solution.

3.1.2 *More evidence for internal heads: inherent case*

Much of the evidence used to support the IHR analysis of OE correlatives is based on morphological case. The principle I have been adopting, and which is implicit in Allen's work, is the following: the case of the head determines which clause it belongs to, MC (an externally headed RC) or RC (an IHR). In this section I provide evidence that case is a reliable test for headedness.

It is standardly accepted that OE has some form of inherent case (van Kemenade 1987, van Gelderen 2000). While there is some disagreement as to the status of nominative and accusative case, dative, genitive, and instrumental case are generally assumed to be inherent. Inherent case (sometimes called morphological case) is assigned at Deep structure as a selectional requirement of verbs and prepositions (see Chomsky 1986a). As opposed to structural case, assigned during a derivation, inherent case is strongly associated with theta-roles (7) and, moreover, appears unchanged when raised (i.e. as subjects of passives; (8)).

(7) *Theta-roles of inherent case*

a. ond	æt	guþe	forgraþ	Grendeles	mægum
and	at	battle [he]	seized	Grendel.GEN	kinsmen.DAT

'And he crushed Grendel's kinsmen to death in battle.'
[Beo 2353]

b. þæt	he	sæ-mannum	onsacan	mihte
that	he	sailors-DAT	strive-against	might

'…that he might strive against the sailors.'
[Beo 2954]

(8) *Resistance to structural case assignment*

a. swa	him	gecynde	wæs
so	him-DAT	taught	was

'…so he was taught.'
[Beo 2696]

b. þa	him	gerymed	wearþ
when	them	allowed	were

'…when they were allowed.'
[Beo 2983]

In (7), we see that it is a property of the selecting verb (*forgaþ*) that determines case assignment on the argument: here dative, rather than accusative. Crucially, the particular case signals thematic differences, where dative indicates recipient-hood (in a. and b.). In (8a,b), oblique arguments (dative) that raise in passive-like constructions do not assume structural nominative case.

Van Kemenade (1987) has argued that dative and genitive are inherent cases in OE, and van Gelderen (2000) supports similar conclusions. In construing inherent case in a minimalist framework (i.e. without invoking a level of Deep structure), van Gelderen (2000) takes inherent case to be an interpretable feature, one which must be present at LF (due to the *Principle of Full Interpretation* (PFI) of Chomsky (1995)).

From these facts, two arguments in support of the IHR analysis of correlatives emerge. The first involves the possibility of *inverse attraction*, as proposed by Harbert (1983). The second bears more generally on the interpretability of inherent case.

As reviewed above, Harbert (1983) takes the case of the head—external in his analysis, internal in mine—to be assigned under agreement with the gap in the RC, so that it acquires RC case. Crucially, this external head cannot be assigned case from the matrix clause for reasons of government. To pass the filter, the head must acquire case through the agreement process of inverse attraction.

Harbert likens inverse attraction to the well-attested process of attraction, mentioned in Chapter 2, §2.2.1.2. However, there are case restrictions on attraction, whereby an inherently case marked DP cannot be "attracted" to any other case—be it structural or inherent. This indicates that inherent case is resistant to case change, a conclusion also supported by passivization facts (see (8)). When we examine Harbert's

inverse attraction data, we see examples of inherent case attracted to structural case—a situation that does not attain in regular attraction processes. For instance, in (9), the head *ealle þa wundra* should have (inherent) dative case according to the role it plays in the matrix clause, as shown by the resumptive *eallum*. However, under Harbert's analysis the head is attracted to the accusative case of the gap in the RC.

(9) [$_{DP}$ ealle þa wundra] [$_{RC}$ þe he worhte],
all those miracles.*acc* C he wrought,

on eallum he herede and wuldrode
on all.*dat* he praised and glorified

his Fæder naman
his Father's name

'Through all those miracles that he brought, he praised and glorified his father's name through those them.'

The above analysis violates the restriction on attraction affecting inherently case-marked DPs. Without extra stipulations, there is no reason why inverse attraction should behave differently from attraction and obviate the usual resistance property of inherent case.

The second argument that inherent case provides in a minimalist framework derives from its status as an interpretable feature (van Gelderen 2000). Since inherent case is so closely associated with the thematic role assigned by V or P, van Gelderen argues that LF needs to interpret inherent case to determine the argument structure of the predicate. If we assume that inverse attraction replaces one case with another, then in a situation where inherent case changes to agree with another case, this amounts to the deletion of an interpretable feature—essentially a theta-role—in violation of PFI.

Moreover, under the inverse attraction hypothesis, the head of the correlative is a topic DP, linked to a resumptive element in the MC. Under standard assumptions regarding the assignment of theta-roles to topics, the topic receives its theta-marking by coindexation with the resumptive element; therefore, the head is theta-marked prior to the supposed application of inverse attraction. So, for instance, in (9) the head *ealle þa wundra* receives a theta role by being linked to the resumptive *eallum* in the MC. Then by agreement with the gap in the RC, *ealle þa wundra* receives *accusative* case, a case which—if inherent—carries with it interpretable features and thus some sort of thematic information. This means that *ealle þa wundra* would have two, perhaps conflicting, theta-roles, in violation of the Theta Criterion.

Furthermore, if agreement were to be used as the mechanism by which the head acquired case, and if we understand agreement in minimalist terms as feature checking (or Agree) in a proper configuration, then it appears difficult to propose agreement between interpretable features—which would essentially be proposing a kind of semantic agreement, something that should happen at s-selection, not mid-derivation.

In sum, the fact that OE has inherent case casts doubt on the process of *inverse attraction*, a process not without its own internal problems. More positively, inherent case provides support for case as a diagnostic of headedness, supporting the IHR analysis of correlatives.

3.2 The sentential position of correlatives: matrix-adjunction

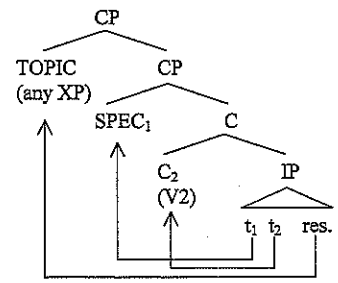
This section addresses the syntactic relationship between the correlative and the main clause. Leaving aside the category of the correlative itself, which I discuss in the next

section, I will offer evidence that the correlative is base-generated as a topic adjoined to the highest projection of the matrix sentence, be that IP or CP. Kiparsky (1995) argues for the widespread existence of this type of clausal adjunction in Old English, and its predecessor languages—proto-Germanic and Indo-European. I turn directly to a brief summary of Kiparsky's proposals.

3.2.1 *Kiparsky (1995)*

Kiparsky (1995) argues for the phrase structure in early Germanic diagrammed below (10). (Topic = left-peripheral; res. = resumptive pronoun/element.)

(10)



Looking first at the movement of the verb, we note that OE main clauses (optionally) show V2 movement, which is the fronting of a finite verb to C^0.[12] This is illustrated by (11). The base position of the verb *hæfde*, given in (11a), has OV order, where the internal argument (*his fierd*) is left of the verb (*tonumen*). The inflected verb *hæfde*, selects its infinitive complement to the left as well. (11b) is the attested surface order.

[12] Other writers suggest that C does not exist in all OE V2 constructions, and the V2 is often simply V-to-I movement (van Gelderen 1993). This debate is not relevant here.

(11) a. se cyning his fierd on tu tonumen *hæfde*
DEM.*n.m.s.* king his army in two divided had

b. [$_C$ [*Hæfde*]$_i$ se cyning his fierd on tu tonumen t_i]
had DEM king his army in two divided

'The king had divided his army in two'
[ASChron.893.; cited in Kiparsky (1995)]

There are, it must be noted, OE main clauses in which the finite verb does not appear in C^0. Kiparsky explains this by arguing that C is not obligatory in the language, so that in its absence there is nothing to attract the finite verb. See Pintzuk (1991) and van Gelderen (1993) for different interpretations of this optionality in OE.

However, when an element (which I call an operator)[13] is in [Spec, C], the finite verb *must* move to C^0, since, as Kiparksy explains, the C^0 head must be lexicalized. The operators that induce V2 can be *wh*-words (7a), certain adverbs (b), and NEG phrases (c)—all involved in residual V2 in PDE (data from Kiparksy (1995). (7d) provides a structure for these sentences under the Kiparsky proposal. The operators are in bold and the verb is italicized.

(12) *V2 in OE matrix clause with operator in [Spec, C]*

a. **Hu** *begæst* þu weolc þin
how begin you.*nom* work your

'How do you go about your work?' [Ælcoll. 23]

b. **Þa** *wearð* he oferswiðed
then was he overcome

'Then he was overcome'
[ÆCHom i.10; in Kiparksy (1995)]

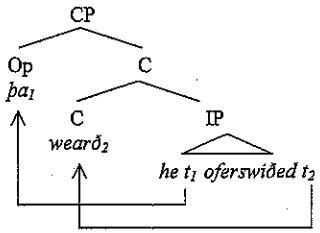
[13] This position is often called "topic" in the literature (Allen (1977; 1980); van Kemenade (1987)); however, Büring (1998) argues [Spec, C] is either a topic or focus in Germanic. I will follow Kiparsky (1995) in reserving "topic" for the base-generated, sentence-external position.

c. **ne** *mæge* we awritan ne mid wordum
NEG can we write nor with words.*dat*

asecgan ealle ða wundra
express all those wonders

'We can neither write not express with words all those wonders.'
[ÆLS 21.242; cited in Kiparsky (1995)]

d.



As shown, the operator must also be moved from an IP-internal position to [Spec, C] where it takes scope over the sentence (this is of course the case with questions, and arguably for negative operators and certain adverbs as well).

In addition to the operator position, Kiparsky demonstrates that there is a CP-adjoined topic position (as shown in (10)). Thus unlike, for instance, Kemenade (1987) Kiparsky demonstrates that topicalization and *wh*-movement (which includes focus) do not have the same landing site. First, there is evidence from OE that shows CP-adjoined material preceding a *wh*-word. In (13), the CP *if*-clause precedes the operator *hu* 'how, whether' which is in [Spec, C].

(13) [$_{CP}$ Gif hwa nu bið mid hwelcum welum
if any now is with such riches

geweorþod	&	mid	hwelcum		deorwyrþum	æhtum
endowed	and	with	such		valuable	possessions
gegyrewod],	[CP hu		ne	belimpþ	se	weorðscipe
adorned,	how		NEG	belong	the	glory
þonne	to	þam	þe	hine	geweorðað?]	
then	to	him	that	him	adorned	

'Now if anyone is endowed with all riches and adorned with all valuable possessions, does not the glory then belong to him who adorned him?' [Boethius, *CP*, 96.12; cited in Kiparsky (1995), p.144]

The conditional clause *Gif...* is adjoined to CP, which contains the *wh*-word *hu* in [Spec, C]. We know that *hu* is in [Spec, C] because it has triggered the movement of the verb *belimpþ* to C^0.

That *wh*/focus and topics occupy different positions is perhaps even more clear in PDE, which Kiparksy argues retains the early Germanic system—and is not, as is sometimes claimed, an innovation exclusive to PDE. As shown below, topics and V2 ("residual" V2 in PDE) can co-occur, suggesting two different structural positions:

(14) a. Beans I like. (focused NP in [Spec,C])
b. Beans, I like them. (Topic adjoined to CP with resump.)
c. *Beans, who needs? (focusing blocked by wh-phrase in [Spec, C]
d. Beans, who needs them? (Topic adjoined to CP)
e. *Beans not once did I eat. (focusing blocked by NEG phrase in [Spec,C]
f. Beans, not once did I eat them. (Topic adjoined to CP)
[from Kiparksy (1995)]

There is also cross-linguistic support for different structural positions for focus/*wh* and topics (see Kiss 1995, and Rizzi 1997, among others). Assuming, then, the structure in (10), there are two possible positions for the OE correlatives: [Spec, C] or Topic.

3.2.2 *OE correlatives as topics*

Evidence shows us clearly that the OE correlative is a topic, adjoined to matrix CP/IP. There are three reasons for adopting an adjoined analysis. First, correlatives, like topics, are co-indexed with a resumptive element that often contains a full DP in the matrix-internal A-position.[14] Under standard assumptions of movement, there is no way to generate the correlative within the matrix clause since the A-position is filled.

Second, if the correlative were to occupy [Spec, C] this would imply that it is an operator and therefore must bind a variable; however, there is no variable for the correlative to bind—only the resumptive element, which is clearly not a variable since it can easily appear as a full lexical item.

Lastly, the correlative may occur before an operator in [Spec, C] of the matrix clause. In (15a), the correlative is adjoined to the matrix clause, and is co-indexed with a resumptive element *eallum*. A focused PP occupies matrix [Spec, C], where it binds a trace/variable in IP. This PP induces V2, so that the verb *herede...* moves to C^0. Note also here that the subject pronoun *he* is a clitic, adjoining to I^0 for independent, perhaps PF reasons (see Kiparksy (1995), van Kemenade (1987), Pintzuk (1991) for various accounts of OE pronominal clitics). In (15b), the numerical index shows co-reference, while alphabetic indices show movement chains.

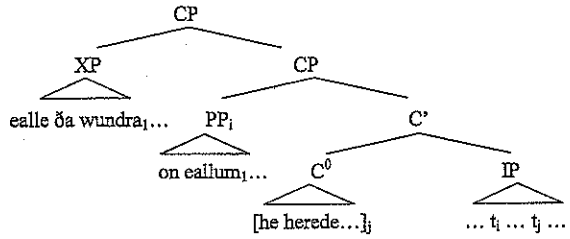
(15) a.	[ealle	ða	wundra$_1$	þe	he	worhte],
	all	those	miracles	that	he	wrought,
	on	eallum$_1$	he	herede and		wuldrode
	on	all (things)	he	praised and		glorified

[14] In fact, CP topics must be co-indexed with a resumptive element, whereas DP topics may be linked to a null resumptive.

his Fæder naman
his Father's name

'All those miracles which he performed, with all those things he praised and glorified his Father's name.'
[*ÆCHom i.214.19*; Allen (1980)]

b.



Since topics and focused elements may co-occur, (15) shows us that the correlative is an adjoined maximal projection (here labeled XP; I will determine its category in the next section). Hale (1979) and Kiparsky (1995) demonstrate that Vedic and other early Indo-European languages allow similar structures, where an internally headed RC is adjoined to the matrix clause (Kiparsky 1995, p.156):

(16) *Correlatives in Vedic*

a. yó mártyah śíśīte áty aktúbhir má
which mortal sharpen-mid-sg overly nights-instr. not

nah sá ripúr īśata
us-gen that trickster dominate-subj3sg.

'As for the mortal who makes himself too sharp by night, may that trickster not gain power over us.'

b. nuza ana dingir.meš kuit arkuwar
PRT-REFL to gods which-ACC prayer-ACC

iyami nukan awate.meš ana dingir.meš anda šunni
make-1sg. now words to gods in fill

'As for the prayer I make to the gods, report the words to the gods'

Similar evidence is put forth by Kiparsky (1995) for the position of the Vedic correlative as with the OE correlative. It appears correlatives in general are topics, adjoined as maximal projections to the highest projection of the matrix clause.

Bianchi (2001) advocates the same structure for correlatives in Hindi, Latin, and Greek. This fact is interesting since Biacnhi's goal is to relate the syntax of correlatives with canonical headed relatives. Instead of offering a different structure for correlatives, Bianchi (2001) pursues Kayne's (1994) Antisymmetry principle and generates heads of all relatives internal to the RC.

3.2.3 *Correlative adverbials*

Further support for the position of correlatives comes from adverbial adjuncts, also termed *correlatives* in certain literature, that share many of the same characteristics as correlative RCs. (I will distinguish the two here as *correlative RCs* and *correlative adverbials*). There are many types of correlative adverbials, and I will only provide a sampling here. However, note that the temporal adverbial clauses in (17) are left-peripheral, contain the complementizers *þe* or *swa*, and a temporal adverb in [Spec, C] co-indexed with a "resumptive" adverb in the MC. In the examples in (17), the temporal adverb in the correlative is in bold, and the resumptive element in the MC is italicized. Furthermore, the two are co-indexed. I have bracketed the correlative adverbial.

(17) *Temporal correlative*

a. [**þa**$_1$ ic ða ðis eall gemunde], *ða*$_1$ gemunde
when I then this all thought when thought

ic eac hu ic geseah …
I also how I saw…

'When I then saw all this, then I also thought how I saw…'
[PC Preface, 28-29]

b. and [$_{CP}$ **swa oft**$_1$ [$_{C'}$ swa [$_{IP}$ he þyder ferde]]] *swa*$_1$
and so often C he thither went so

forhtodon þa deofla on ge-wit-seocum mannum
afraid the devils in possessed men

'And so often as he thither went, so often were afraid the devils in possessed men.'
[Carkeet 1976: 48]

c. *Comparative correlative*

for ðon [$_{CP}$ **swa micele**$_1$ [$_{C'}$ swa he læs hæfde],
because so much C he less had

swa micele$_1$ hie wæron beteran.
so much they were better

'Because the less they had, the better they were.'

In (17a), we find a CP-adjoined correlative, and two adverbs, *þa*. The temporal reference of these adverbs is nearly simultaneous, if not purely co-referential. Just as with correlative relatives, the co-referential element in the correlative clause occupies [Spec, C]. Likewise, the correlative CP is external to the matrix CP. The correlative clause may contain the complementizer *þe* or *swa*, depending on the adverb. Carkeet (1976) provides a table of correlative subordinators. It has long been orthodox, in traditional analyses

(Mitchell 1985, et. al.), to analyze the first occurrence of the adverb as a subordinator and the second as an adverb. Now we can see that both are adverbs. The first, however, raises to or is generated in [Spec, C]$_{correl}$ where it can then link to a resumptive adverb in the matrix clause. (See Chapter 4 for an account of this semantic linking.)

We even find correlatives with adverbial interpretation, but with nominals occupying the [Spec, C] position.

(18) **mid þam** **þe** ic hogode helpan þinum
with DEM.*d.s* C I reflected help.*inf* your.*d.p*

wife, **mid** **þam** ic forleas min
wife with DEM.*d.s* I lost mine

'Even as I reflected (how to) help your wife, even then I lost mine.'
[Carkeet 1976: 48]

Carkeet provides the idiomatic translation in (18) with a temporal interpretation for the phrases *mid þam*. Thus both occurrences of *þam* are co-indexed, with the first occupying [Spec, C] of the correlative clause. Thus the distinction between correlative relatives and correlative adverbials is simply the category that occupies [Spec, C]$_{RC}$. Furthermore, the syntactic analysis provided here for correlative relatives gains further support now that we see it is applicable to adverbials. In Chapter 4 I will provide a semantic analysis of correlatives, in which the correlative adverbials are accounted for in addition to the correlative RCs.

3.2.4 *Conclusion*

The evidence from the position of correlatives and correlative adverbials has shown us that the correlative is matrix-adjoined as a topic. This position raises interesting questions about the nature of subordination clauses in the language, and the notions of hypotaxis versus parataxis. I will take up these questions in §3.4. For now I note that the correlative is still a subordinate clause syntactically, since it is adjoined to the matrix clause, and thus dominated by a projection of the matrix CP. As Kiparsky (1995) says of this position, it is still hypotactic, but not embedded, i.e. it is as loosely related to the matrix clause as possible while still forming a constituent with it. I turn next to the more interesting question of what category the correlative projects.

3.3 The category of correlatives: DP or CP?

Under the traditional assumption that OE correlatives are externally headed, their category is unquestionably a DP (see Harbert 1983). However, as I have concluded above, correlatives are internally headed. Without an external (overt) head dominating the CP, there is no immediate evidence to assume that correlatives are either DPs or CPs. That is, while we know that the head is CP-internal, I have not presented evidence for or against a null determiner, say *pro*, heading the correlative. On the other hand, there is no immediate surface evidence for any structure beyond a bare CP. In this chapter I will present the competing hypotheses: the DP (free relative) hypothesis and my own CP hypothesis. The DP hypothesis has been advocated by Hirschbühler and Rivero (1983), who analyze as a free relative what I have labeled a correlative. I will review their case in §3.3.1, as well as the *matching hypothesis* of free relatives. In §3.3.2 I propose that a

bare-CP analysis of correlatives accounts for the facts adduced by Hirschbühler and Rivero (1983), the concerns of Harbert (1983), as well as additional observations of my own.

3.3.1 *Hirschbühler and Rivero (1983) and the Matching Hypothesis*

Hirschbühler and Rivero (1983) seek to account for the OE correlative using the *Matching Hypothesis* of Grimshaw (1977). Hirschbühler and Rivero (1983) analyze the OE correlative as a free relative, and in doing so appeal to the Matching Hypothesis, which they formulize in (19):

(19) *Matching Hypothesis* (Hirschbühler and Rivero (1983))

A free relative is *matching* if the *wh*-phrase that is its initial constituent is of the same category as the constituent that immediately dominates the clause.

A PDE free relative, such as (20), is matching because the *wh*-word is nominal as is its immediately dominating category, the super-ordinate NP:

(20) I know [$_{NP}$ [$_{NP}$ what] you know]

To account for the matching phenomenon of (20), two competing analyses have been proposed, the *Comp proposal* and the *Head proposal* (see Groos and van Riemsdijk (1979) for further exploration of this issue). I update here the structures and terminology from Hirschbühler and Rivero, noting that the debate between the two continues. The Comp proposal treats the *wh*-word of a free relative as an operator located in [Spec, C], and the head of the FRC is empty, perhaps filled by *pro* (21a), although this is a later

innovation. In the Head proposal, the *wh*-word is an DP which is then modified by the following sentence (perhaps a an RC with a null comp and a null operator; (21b)):

(21) a. I know [$_{DP}$ [$_{DP}$ *pro*$_i$] [$_{CP}$ what$_i$ you know t$_i$]] *(Comp proposal)*

b. I know [$_{DP}$ [$_{DP}$ what$_i$] [$_{CP}$ Op$_i$ you know t$_i$]]] *(Head proposal)*

Bresnan and Grimshaw (1978) argue that the matching effect is explained by the Head proposal since the whole DP of the FRC will naturally be of the same category as its head (taking head in both the relative clause sense of *antecedent* and the X-bar theoretic sense of *head of a projection*).

Hirschbühler and Rivero's aim is to show that subcategorizing verbs must have access to what they call Comp ([Spec, C] in current understanding). However, in doing so they present an analysis of OE correlatives, treating them as free relatives. Under this analysis, the RCs of (22) must be matching, since they are externally headed. Like Allen (1977; 1981), Hirschbühler and Rivero take the RCs in (22) and (23) as free relatives, although they do not provide any definition of what a free relative is. They follow Allen's conclusion, adopted here as well, that the RC in (22) is externally headed, by the demonstrative pronoun *ðam*. However, they do not explicitly state whether the head in (23), *þone*, is internal or external, leaving the matching hypothesis and other early GB principles to determine its syntactic properties, such as its case.

(22) ðæt man for-gife ðam [ðe
that one forgive DEM.*d.s.* C

wið hine gegylte]
against him sins

'That one forgive him who sins against him.'
[Ver. III.170; Harbert p.549]

(23) and þone ðe ðu nu hæfst, nis
and DEM.*m.a.s.* C you now have not.is

se ðin wer
DEM.*m.n.s.* your husband

'And him [lit. that one] who you have now, he is not your husband'
[Alc.P.V.37; Harbert 550]

Apparently, the fact that the head is simply a pronoun in (22) and (23) led former authors to label these *free relatives*. I will not use the term, since the relative in (22) is externally headed and appears to function like any externally headed RC. (Of course, (22) can be translated in PDE as a free relative—*forgive whoever sins against him*—but is structurally externally headed in OE.)

However, the RC in (23) is, at least potentially, a free relative if by *free* we mean that there is no (overt) external head. The RC in (23) is, in fact, a correlative, whose head, *þone*, is internal but fronted to [Spec, C] of the RC. Hirschbühler and Rivero (1983) do not explicitly claim anything about the headedness of (23). Rather, they propose that the RCs like (23) are actually headed by a null pronoun, or *pro*. They are therefore DPs according Hirschbühler and Rivero, contrary to my analysis. Again it is unclear to me why Hirschbühler and Rivero (1983) or Allen (1977) consider the RCs in (22) FRCs since they are externally headed just like any *þe*-RC in the language. Putting this

terminological confusion aside, let us turn to the details Hirschbühler and Rivero's analysis of what I call correlatives (i.e. the datum in (23)).

As I have proposed for correlatives such as (24), Hirschbühler and Rivero generate *ðone stan* (a) and *hwilcere leode* (b)—what I analyze as internal heads—within the RC and move it to a pre-sentential position, analogous to [Spec, C] in current frameworks. In terms of the matching hypothesis, Hirschbühler and Rivero note that OE FRCs need not be matching, either for category or case. That is, they claim that in (24b) the "*wh*-phrase is a PP but the dominating node is an NP" (p.512). Similarly, in (24a) the *wh*-word is accusative (*ðone*) but the RC as a whole is not in an accusative-marked position.

(24) *OE correlatives as DPs (free relatives)*

a. $[_{NP}$ *pro* $[_{CP}$ [þone stan]$_2$ þe ða wyrhtan t_2 awupron]]$_1$ $[_{MC}$ þes$_1$ is…]

b. $[_{NP}$ *pro* $[_{CP}$ [to swa hwilcere leode]$_2$ swa we t_2 cumað]]$_1$ $[_{MC}$ we cunnon ðære$_1$ gereord]

c. $[_{NP}$ *pro* $[_{CP}$ [int.head]$_2$ …t_2…]$_1$ $[_{MC}$ …res.$_1$…]

Hirschbühler and Rivero say that the free relatives in (24) do not need to be matching in category since the category that heads them is not subcategorized by anything because it is in a dislocated, or topic position. (This line of argumentation is somewhat similar to Harbert's logic.) Second, the free relative need not match in case since this position is also not a case-marked position. It is then precisely in correlatives that we find non-matching and in matrix-internal relatives—which have an external overt head—that we find matching.

However, if correlatives, like PDE free relatives, were headed by a *pro* we would expect to find them in argument position. Crucially, the classic argument for the existence of an external *pro* in PDE free relatives is the fact that they are arguments, not predicates like other RCs. Recall we saw in Chapter 2 that it was one of the invariant characteristics of correlatives that they never occurred in A-positions, but were only linked to resumptive elements that served as matrix arguments. There is a clear correlation between headedness and sentential position—that is, the position of the RC with respect to matrix clause is in complementary distribution with respect to headedness. This is summarized in (25)

(25) A relative clause is IHR iff non-argument[15]

The free relative analysis does not account for this most basic of observations concerning the distribution of internally and externally headed RCs. We will see below that we can account for (25) if we assume that the correlative is a bare CP.

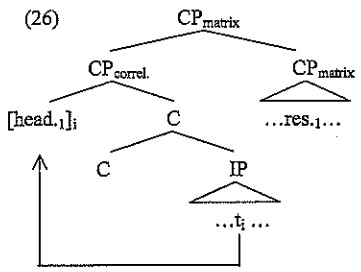
3.3.2 *The 'bare' CP hypothesis*

In Indo-European it is well recognized that CPs cannot be embedded as arguments or modifiers (Harris and Campbell 1995; Kiparsky 1995). Instead, subordinate clauses were adjuncts to the matrix IP or CP, usually—always in the case of correlatives—linked to a resumptive element in the matrix clause. (Kiparsky, in fact, goes as far to say that Indo-European had no complementizers and that only in early Germanic did "true"

[15] It is not true, however, that an RC is externally headed iff it is an argument. That is, there are DPs in topic position that are modified by a *þe*-RC.

complementizers arise, p.158.; I have been calling *swa* and *þe* complementizers even though in the case of correlatives they do not allow embedding. I will discuss this further in Chapter 5.) We now can explain the implication in (25). If correlatives are bare CPs, and since bare CPs in early forms of Germanic do not embed as arguments or adjuncts, then we have a simple explanation for their sentential position: correlatives are CPs since they cannot embed. Thus the structure of a correlative is as follows (26):[16]

(26)



3.4 Conclusion

The structure in (26) has significant consequences for our understanding of subordination, of relativization, and the semantic relationship that holds between the two clauses. I will address the semantic issues in the next chapter, and the broader issue regarding subordination and relativization in Chapter 5.

[16] I have co-indexed the resumptive element and the head. It may be possible to argue that the resumptive element is actually co-indexed with the entire correlative CP. However, I do not see any interpretative difference between these two options: since the head is modified by the correlative IP it would end up returning the same interpretation as CP as a whole. I choose to co-index the two nominals—the head and the resumptive—since co-reference between a CP and a DP might prove problematic for semantic interpretation, given that the CP is not of the semantic type <e> whereas the resumptive is.

Chapter Four

The Semantics of Correlatives

4.0 Introduction

The syntactic structure of OE correlatives follows from reliable diagnostics and relatively straight-forward argumentation. However, the syntactic analysis carries difficult implications for the semantic interpretation of correlatives. First, we need to explain how the internal head of the correlative composes with the rest of the correlative predicate. Second, the internal head and its co-referent resumptive in the matrix clause need to be linked, so that their co-reference is not merely accidental or optional but required by the grammar. Lastly, the relationship between the correlative clause and the matrix clause has yet to be determined: we know that the correlative is syntactically adjoined to the highest projection of the main clause, but we have yet to determine how it composes with the matrix clause semantically.

In this chapter I will provide two possible answers to these three questions, and show why one is preferred given the available data. First, however, I review the generative literature concerning correlatives (§4.1), focusing on Srivastav (1991) which provides a detailed semantic analysis of Hindi correlatives. After showing that the Hindi correlative exhibits properties not seen in OE, I will present a semantic explanation of my own (§4.2). Two proposals are put forward, both with different answers to the three questions outlined in the previous paragraph. The first proposal treats the correlative analogous to PDE non-restrictive (NRC) or appositive relatives as analyzed by Demirdache (1991). Under this paratactic hypothesis, the correlative is derived as a

completely independent clause at LF. The second proposal argues for a special semantic function for the complementizers *pe/swa*, which relate the correlative head and the resumptive through semantic subordination (hypotaxis). I conclude the chapter with arguments in favour of the hypotaxis analysis.

4.1 The literature

Much of the literature on the semantics of correlatives focuses on Hindi, in which correlative constructions are still part of a spoken language, unlike OE. Below are the three positions in which Hindi RCs can occur—embedded (adjacent to the nominal (1a)), right-adjoined, (1b), and on the left-periphery—the correlative (1c). Data from Srivastav (1991).

(1) *Hindi RCs*

a.	*vo*	*laRkii*	**[jo**	**kaRii**	**hai]**	lambii	hai		*(embedded)*
	DEM	girl	REL	standing	is	tall	is		
b.	*vo*	*larRkii*	lambii	hai	**[jo**	**(*laRkii)**	**khaRii**	**hai]**	*(right-adjoined)*
	DEM	girl	tall	is	REL	(*girl)	standing	is	
c.	**[jo**	**laRkii**	**khaRii**	**hai]**	vo	(laRkii)	lambii	hai	*(correlative)*
	REL	girl	standing	is	DEM	(girl)	tall	is	

'The girl who is standing (she) is tall'

Srivastav (1991) takes the right-adjoined RC as a variant of the embedded RC, based on scopal evidence (see pp.647ff.), and by the fact (which is attested in OE as well) that right-adjoined RCs cannot contain a repetition of the nominal (i.e. *laRkii* 'girl' in (1b)). This conclusion mirrors what I have assumed for OE—that right-peripheral RCs are

surface variants of the matrix internal RCs that have, perhaps, undergone a process similar to heavy NP-shift. Since the semantics of head-adjoined RCs can be solved using standard treatments, let us turn to various explanations for the Hindi correlative.

4.1.1 *Bach and Cooper (1978)*

Bach and Cooper (1978) represent the first attempt (cited in Srivastav (1991)) to deal with the compositionality of correlatives in a generative, interpretivist framework. Under this account the RC and MC are interpreted independently. The main clause resumptive element has an "implicit property variable R", which is abstracted over the MC. The RC is then supplied as an argument to the MC, satisfying the λ-abstract *R*. Srivastav (1991) applies this composition to correlative in (1c) above:

(2) *Bach-Cooper (1978) composition*

a. RC: $\lambda z[\mathrm{IP'}_{RC}']$
MC: $\lambda R[\mathrm{IP'}_{MC}]$
Sentence: $\lambda R[\mathrm{IP'}_{MC}](\lambda z[\mathrm{IP'}_{RC}'])$

b. RC: $\lambda z(\mathrm{stand}'(z))$
MC: $\lambda R[\lambda \mathrm{PP}[\iota x_i\ (\mathrm{girl}'(x_i)\ \&\ R(x_i))]\ (\mathrm{tall}')]$
Sentence: $\lambda R[\lambda \mathrm{PP}[\iota x_i\ (\mathrm{girl}'(x_i)\ \&\ R(x_i))]\ (\mathrm{tall}')](\lambda z(\mathrm{stand}'(z)))$

= (by λ-ins. of *R*) $\lambda \mathrm{PP}[\iota x_i\ (\mathrm{girl}'(x_i)\ \&\ \lambda z(\mathrm{stand}'(z))(x_i))]\ (\mathrm{tall}')$
= (by λ-ins. of z) $\lambda \mathrm{PP}[\iota x_i\ (\mathrm{girl}'(x_i)\ \&\ \mathrm{stand}'(x_i))]\ (\mathrm{tall}')$

[derivation cited from Srivastav (1991)]

Essentially, the Bach-Cooper analysis stipulates the existence of the *R* within the MC. I see no principled reason for the inclusion of the *R* variable in the composition of the MC.

That is, since the MC is composed independently of the adjoined RC (as both Bach and Cooper show for Hindi and as I have shown for OE, since the syntactic input to semantics requires this), there is no way to know whether this variable *R*—which allows the RC predicated to be placed under the iota-operator defining the head—should be added into the main clause predicate. If it is not a part of the MC, then there would be no way for the RC to compose with the MC. Alternatively, if there is no adjoined correlative RC and if the *R* variable is part of the MC, then the semantic representation will be left with an unsaturated predicate. Either way, the semantic composition crashes. In order to derive the correct representations, the MC must "know ahead" whether a RC is adjoined.

4.1.2 *Srivastav (1991) and Hindi correlatives*

Srivastav (1991; and see Dayal 1988) examines the syntax and semantics of correlatives in Hindi, noting that similar constructions exist in Hittite, Walpiri (see Hale 1976), and Indic languages where the relative clause does not have to be adjacent to the head.

Srivastav has discovered that there is a requirement in Hindi that the resumptive element in the MC in correlative constructions include a demonstrative pronoun or determiner. The author further argues that such determiners/pronominals can be bound and interpreted as free variables. Like any variable, if it remains free, it refers deictically to some element in the discourse. If bound, the variable acquires its reference via a higher quantificational element. These facts are necessary to understand Srivastav's (1991) semantic account of correlative constructions in Hindi. She argues that the correlative

RC—which is adjoined to the matrix clause, just as with OE correlatives—is a generalized quantifier binding the resumptive element in the matrix clause.

Before turning to the details of this proposal, let us first recall the standard accounts of relative clause semantics. RCs contain a predicate abstractor (in English, the relative pronouns/operators) that turn a closed sentence (the IP) into and open sentence, with a λ variable abstracted over. This operator makes the RC a set-denoting term, i.e. it denotes the set of all things with the property defined by the IP predicate, as in (3):

(3)

The woman $[_{CP}$ who$_1$ $[_{IP}$ t_1 is blonde]] *(spell-out representation)*

= λx_1 [BLONDE(x_1)] *(LF presentation)*

= $x \in \{$ BLONDE $\}$

= the set of all individuals who are blonde

This set-denoting term then intersects with a common noun (*woman*, itself a set-denoting term) through predicate modification, yielding another set. An unique individual from this set is then identified by a determiner, *the*, as in (4).

(4)

$[_{DP}$ the $[[_{NP}$ woman$]$ $[_{CP}$ who$_1$ $[_{IP}$ t_1 is blonde$]]]$ *(spell-out representation)*

= $\iota x.$ x IS UNIQUE. λx [WOMAN(x) & BLONDE(x)] *(LF representation)*

However, Srivastav (1991) assumes that there is no abstractor within the correlative, so that an open sentence is not created. Instead, she proposes that the correlative CPs are generalized quantifiers, which means that their denotation is the set of all sets that contain the individual in the intersection of the head nominal (a predicate, a set) and the RC predicate. As quantifiers, generalized quantifiers must bind a variable, which Srivastav takes to be the resumptive element in the main clause. Above it was shown that the resumptive element, headed by DEM, acts like a variable for independent reasons evident in Hindi. With the main clause resumptive element acting like a variable bound by the correlative, which acts like a generalized quantifier, then the whole sentence is true "just in case the set denoted by the main clause is a member of the set of sets denoted by the relative clause" (p.662).

Srivastav's generalized quantifier analysis runs into problems if we apply it to OE. First, while Hindi has a demonstrative restriction on the resumptive element, OE does not. Recall that Srivastav used this restriction to show that the resumptive element in the Hindi main clause acted as a variable which could be bound be an adjoined quantifier—in the case of correlatives, this is the correlative RC acting as a generalized quantifier. However, as the data in (5) show, in OE determiners (a,b,c), determiners plus nouns (d) and universal quantifiers (e) all appear as resumptive elements.

(5) *Resumptive elements in OE correlatives*

a. þone stan$_1$ þe ða wyrhtan awurpon,
the.*m.a.s.* stone C the workers rejected

[þes]$_1$ is geworden on þære hyrnan heofod
that.*m.n.s.* is become on the corner head

'The stone that the workers rejected, this has become the cornerstone.'
[Bianchi (2001)]

b. and þone$_1$ ðe ðu nu hæfst, nis
and him.*a* C you now have, not-is

[se]$_1$ þin wer
DEM.*m.n.s.* your husband

'And him$_1$ that you now have, he$_1$ is not your husband'

c. to swa hwilcere leode$_1$ swa we cumað
to such wh-*d.s.* people C we come

we cunnon **[ðære]$_1$** gereord
we know their language

'To whichever people we come, we know their language.'
[Allen 1980, p.280]

d. Ond on swa **hwelcre** **stowe$_1$** swa min þrowumge
and on so which-DAT place as my passion

awriten sy ond man þa mæsige, afyrr þu,
written is and one it celebrates drive you

drihten from **[þære stowe]$_1$** blindness
Lord from that place blindness

'And in whichever place that my passion is written and one man celebrates, drive, Lord, blindness from that place.'

e. ealle ða wundra$_1$ þe he worhte, on **[eallum]$_1$**
all.*a.p.* those miracles.*a* C he wrought, on all.*n.d.p.*

he herede and wuldrode his Fæder naman
he praised and glorified his Father's name

'All those miracles that he wrought, on all those (things) he praised and glorified his father's name.'
[ÆHom i.214.19]

We would have to find independent evidence that each of these resumptives allows for a variable interpretation. This seems unlikely since, for instance, a full [$_{DP}$ D [NP]] phrase in (5d) acts as a resumptive and, of course, refers independently. It therefore should not be able to act as a variable.

Moreover, since quantifiers can themselves be resumptive elements (e.g. (5e)) we run into problems with doubly bound variables. That is, under standard assumptions of quantifier raising (QR), the resumptive quantifier needs to bind a variable within the matrix clause. We would then have to say that the resumptive quantifier itself contained a variable which needed to be bound. We would be forced, using Srivastav's analysis for OE, to posit that the quantifiers *eallum* and *hwilcere* are variables, not quantifiers. This would strip them of their quantificational meaning (since, given constraints on variable binding, variables cannot bind variables). Clearly, though, these resumptive elements contribute meaning to the matrix clause and do not simply function as variables to identify the meaning of the main clause.

When it comes to applying each analysis to OE, Srivastav's account suffers the same inadequacies as the Bach-Cooper (1978) approach. Both analyses attribute a special function to some element in the main clause. In the case of Bach-Cooper this a general variable in the main clause, called *R*, that needs to be linked to the RC. In the case of Srivastav, it is the resumptive demonstrative that acts as a variable that licenses the interpretation of the correlative from a distance, by providing a variable for the correlative RC (a generalized quantifier) to bind. This analysis, of course, follows from observed restrictions on the main clause in Hindi, specifically the type of resumptive

element. I have found no such restrictions on possible resumptive elements in the main clause of OE correlatives. This suggests that there is no special property of the main clause we can appeal to in order to find an explanation for the correlative. That is, we must be able to compose the matrix clause as if it were not "expecting" an adjoined relative clause at its root node.

4.2 Two new proposals

In this section I will present two analyses of correlative semantics which can account for the OE data. The first proposal treats the correlative as a main clause at LF—semantic parataxis; the second treats the correlative as a subordinate clause—semantic hypotaxis.

4.2.1 *Semantic parataxis: correlatives as main clauses*

I begin this analysis with a review of PDE non-restrictive relatives (NRCs), which share many properties with correlatives. Since Ross (1967), and specifically Emonds (1979), non-restrictive RCs (the CP, minus the external head) are assumed to adjoin to the matrix clause at LF. This is how the Main Clause Hypothesis of Emonds (1978) accounts for the main clause properties of non-restrictive relatives. Ross (1967) introduced the notion that non-restrictive relatives (NRCs) are interpreted as main clauses. As evidence, he notes that an appositive coordinated clause introduced by *and* (6a) can be paraphrased by a NRC (6b):

(6) a. Enrico, and he is the smartest of us all, got the answer in seven seconds.

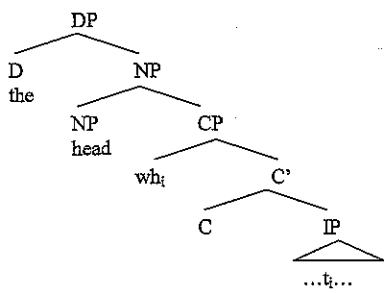
b. Enrico, who is the smartest of us all, got the answer in seven seconds.

[data cited in Demirdache 1991 from Ross 1967]

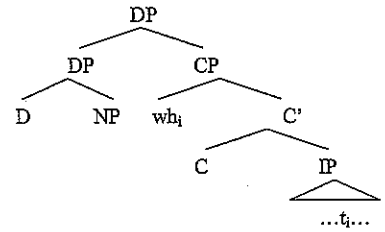
In contrast to the main clause hypothesis, the so-called subordinate clause hypothesis (see, for instance, Jackendoff 1977) maintains that NRCs are adjoined within the matrix clause. Demirdache (1991) combines these two approaches, arguing that NRCs (or *appositive relatives*) are subordinate clauses syntactically (i.e. adjoined to their head at D-structure), but are interpreted as main clauses as a result of being raised and adjoined to the matrix clause at LF. Moreover, the relationship between the head of NRC and the NRC itself is not one of predication—which would require sisterhood at LF—but of anaphora.

Demirdache (1991) proposes that in PDE, RRCs and NRCs are represented by the following different (spell-out) structures:

(7) *Restrictive relative clauses*



(8) *Non-restrictive relative clauses*

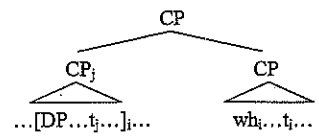


In the case of RRCs, the relative CP adjoins to the head NP; both being predicates, they semantically compose through an intersection of sets, so that the super-ordinate NP is the set of all individuals in such an intersection. The determiner (D) then defines one individual within that set, yielding an entity, so that the whole DP is semantically an <e> element.

The case of NRCs is different. First, the CP is adjoined to DP. In the syntax, then, it is subordinated (embedded), and the *wh*-word can enter an agreement/checking relationship with the head (this yields the proper *wh*-form: *who(m)* for animates and *which* for inanimates).

However, the CP does not compose with the DP at LF, but is instead raised and adjoined to the matrix clause:

(9) *LF adjunction of NRCs*



At LF, the NRC is interpreted as an independent clause, not a conjoined clause. Therefore, the relation between the NRC and the head DP (which remains in the main clause at LF) is not one predication, since predication requires syntactic sisterhood (Chomsky 1986b). Moreover, Demirdache points out that if the relationship between the head and the NRC were one of predication, then we would only expect DPs/arguments to head NRCs. However, NRCs can be headed by many categories—AP, VP, IP/S, as shown by (10), where the head XP is in bold.

(10) a. Michael's new shirt was **red**, [which looks good on him]. *(AP)*

b. Mary likes **to garden**, [which is a good hobby]. *(VP)*

c. **Bill passed his test**, [which was a relief to his parents]. *(IP)*

Demirdache proposes that the relationship between the head (whatever XP it is) and the relative pronoun is one of anaphora, whereby the NRC relative pronoun picks up its reference from the co-indexed head. Moreover, this is anaphora across clauses, so the co-reference is treated on par with anaphora between sentences:

(11) a. I saw Mary_i. $\text{She}_{i/*j}$ was late.
b. I saw Mary_i, $\text{who}_{i/*j}$ was late.

Thus RRC relative pronouns and NRCs relative pronouns are interpreted differently. A RRC RP does not independently refer, and is a bound variable. Demirdache explains this as a consequence of the fact that the head of a RRC (the NP to which the RC is adjoined), can never refer independently, and therefore must bind a variable.

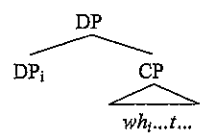
In contrast, the head of a NRC *does* independently refer, since it is a fully referential XP. This means that an NRC can modify a proper name. Moreover, the RP in an NRC is also fully referential (an <e> type pronoun), so it can never act as a bound variable. (Demirdache also shows evidence from quantifier raising that supports the claim that NRCs adjoin to the matrix clause at LF and thus cannot be under the scope of a quantifier head).

Demirdache tackles the problem of why the RP in an NRC *must* refer to its head, and not any other phrase in the matrix clause or in the discourse. That is, unlike the independent clause in (12a), a NRC RP can only refer to the head it was adjoined to at surface-structure (the *spell-out representation*).

(12) a. John_i saw a man_j. $\text{He}_{i/j/k}$ was tall.
b. John_i saw a man_j, $\text{who}_{*i/j/*k}$ was tall.

Demirdache assumes that the NRC RP must be *identified* just as an empty category would be. Furthermore, this condition must be satisfied in English at surface structure with the RP being bound by its closest antecedent. Therefore, the RP chain $wh_i...t_i$ receives the index of the head XP when it is adjoined to that head XP.

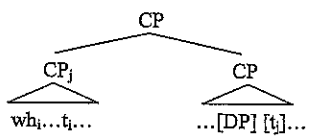
(13) *Surface structure of NRCs*



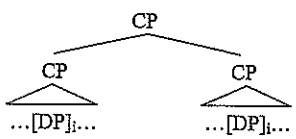
Thus at LF, when the CP raises and is interpreted as an independent clause, the RP can refer independently by virtue of its co-indexation with the head. Demirdache does not determine what category the root node of the LF representation is, saying that it acts like a text node, linking two assertions (although, the NRC acts as an "assertion to follow", like any appositive or parenthetical remark.) In the next section we will see how the PDE NRC construction, as formulated by Demirdache, bears on the semantic interpretation of OE correlatives.

It should be clear to the reader now that the LF representation of PDE NRCs is strikingly similar to the syntactic representation of OE correlatives. Specifically, the correlative CP is adjoined to the matrix clause and its internal head is co-indexed with an element in the matrix clause. Similarly, the PDE NRC CP is adjoined to the matrix clause (at LF) and the RP is co-indexed with an element in the matrix clause (the "head"). Compare the two representations below (14):

(14) a. *English non-restrictive relative*



b. *OE correlative*

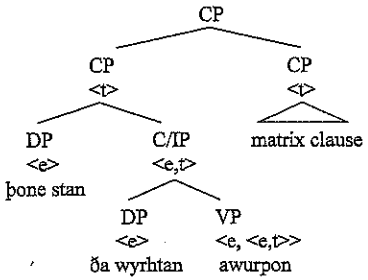


The constructions are different in several respects. First, the OE correlative is base-generated adjoined to the matrix clause, whereas the PDE NRC is base-generated adjoined to its head (or antecedent). Secondly, the internal head of the correlative is not a RP, and it is fully referential—it is a full DP that does not act like relative pronoun. The NRC, however, contains an RP (or resumptive pronoun in Demirdache's terminology) which must acquire its reference through co-indexation (via government) with the head before spell-out. These two differences, however, are related. Notice, that the PDE NRC has to be base-generated within the matrix clause so that it is adjacent to the head, whereby the non-referential RP receives its reference. If the NRC were base-generated in its LF position, then the RP would not be able to acquire reference to refer independently. Consequently, it could not compose semantically with the NRC predicate, and the NRC could not be interpreted as an independent clause.

However, this problem does not arise when we base-generate the OE correlative as an adjunct to the matrix clause. Crucially, the internal head of the correlative co-indexed with the resumptive element in the MC is not referentially deficient—it is a fully identified DP. Consequently, the internal head does not need to be adjacent to a matrix internal element to acquire reference: it may compose with the predicate in the correlative independently of the matrix clause or the resumptive element therein.

Therefore, we can semantically compose the correlative in the same way as Demirdache (1991) has proposed for the semantic representation of PDE NRCs. That is, the correlative is interpreted as a main clause semantically, independently of the matrix clause. It would then have the straightforward semantic composition shown below:

(15)



This semantic composition raises several apparent problems. None of these problems, however, are special to the correlative; the LF-adjunction analysis of PDE NRCs also encounters similar difficulties. First, we have to assume that the complementizer is invisible to semantic composition, both in the case of the overt Comp in OE (*þe*) and the null C^0 in PDE NRCs. This however, is generally assumed in semantic composition of RCs (see Heim and Kratzer (1998)).

Second, and more crucially, the composition does not explain why *þone stan*, the internal head which also serves as the internal argument of the RC verb *awupron*, moves to [Spec, C]. In PDE appositives, the movement is required so that the operator can be identified (Demirdache 1991). As a full DP in the correlative, the internal head does not need to be identified. In fact, it is not an operator at all. That is, it is not a predicate abstractor (in the sense of Grosu 1994)). A predicate abstractor is a relative operator, turning the sentence in the RC to an open predicate, as is the function RPs in restrictive relative clauses. Grosu argues, based on the facts found in PDE free relatives, that a full DP with a nominal complement cannot be a predicate abstractor because it contains more lexical information than a predicate abstractor should. That is, the function of predicate

abstractors is to convert a closed sentence (a <t>) into an open sentence (a predicate, <e,t>). Any further lexical information that occurs as part of this operator/abstractor would be lost in the composition. This is clearly not what we want for the internal head in correlatives, since the NP *stan* is vital to the meaning of the clause.

Instead of proposing a semantic motivation for the movement of the internal head, I suggest that the movement is due to purely syntactic conditions on the requirements of Comp, *þe/swa*. Specifically, C^0 carries an EPP feature which requires its specifier to be filled, following the general notion that the EPP-type feature requires the operations Agree and Move in order to be checked (Chomsky 2000). We have to assume then that the movement of the internal head is more like A-movement than A-bar movement, in that the former does not bind a variable whereas the latter does. This speculation gains more credence when we understand that the Comp *þe* has properties of Indo-European and proto-Germanic, where C^0 was not yet a full-fledge functional head. I suggest here then, tentatively, that *þe* acts much like an I^0 head, but does not assign case (case is assigned independently by the verb (inherent case) or I (structural case)). Thus the head moves to [Spec, $C_{þe}$] purely to satisfy the EPP which has no effect on semantic interpretation. This is not to say that C^0 in OE, or its predecessors, does not allow operators, A-bar elements, in [Spec, C]. Certainly, the operators that induce V2 do not function as though they are in an A-position. And more conclusively, wh-words that appear in [Spec, C] of questions are operators. Crucially, the status of [Spec, C] depends on the nature of C^0. In Chapter 5 I will discuss the various features that occur on C^0 in OE. There we will see that C^0 in correlatives (i.e. *þe*, *swa*) is different from that in main

clauses (where V2 occurs), in questions, where operators *do* target [Spec, C], and in embedded RCs.

A third apparent problem for the structure and derivation given in (15) is the nature of the root node, which I have identified as a CP. It is clear that this CP is a projection of the matrix C, and that the correlative is syntactically subordinate in that it cannot stand alone and must be adjoined to the highest projection of the sentence. However, it is implicit in this proposal (and in Demirdache's analysis of LF-adjunction for PDE NRCs) that the syntactic root of the sentence may not correspond to a semantic sentence. That is, at LF the two CPs are independently composed, deriving two <t> types. These two closed sentences do not compose further with each other, but are treated just as two independent sentences within a discourse. This is the conclusion of Demirdache for NRCs, who likens the relationship between the NRC head and the RP as anaphora across discourse. This proposal is even more attractive for the OE correlative when we consider that the internal head and the resumptive element are very often full referential DPs, whose identity is established not by syntactic means but by pure co-indexation, meaning that they simply refer to the same object in the "real world." In precise terms, both the internal head and the resumptive element merge into their respective sentences with the same index, so that their identity is established pre-syntactically.

This analysis, however, makes certain claims about the syntax-semantics interface. A strict interpretivist approach would require that every syntactic node be interpreted in the semantics, so that the top-most branch of correlative constructions (the root CP) and the root of sentences containing NRCs must be composed pairwise in some fashion (through familiar semantic rules: functional application, predicate modification,

etc.) However, as Demirdache does with NRCs, I conclude that the semantic component ignores the syntactic relationship between the correlative and the matrix clause. This is what Safir (1986) means when he says of NRCs that they are "invisible at LF," meaning that they are interpreted as separate sentences.

4.2.1.1 *Correlative adverbials*

Correlative adverbials under this analysis will work the same way as PDE appositives that modify (actually, link anaphorically per Demirdache) categories other than DP (see (10)). Likewise correlative adverbials in OE can link to adverbials within the main clause. Recall from Chapter 3 (§3.2.3) that when the element that occupies [Spec, C] of the correlative clause is an adverb of time, it must be co-referential to an adverb in the matrix clause.

(16) a. [**þa**$_1$ ic ða ðis eall gemunde], [*ða*$_1$ gemunde
when I then this all thought when thought

ic eac hu ic geseah …]
I also how I saw…

'When I then saw all this, then I also thought how I saw…'
[PC Preface, 28-29]

b. and [$_{CP}$ **swa oft**$_1$ [$_{C'}$ swa [$_{IP}$ he þyder ferde]]] [*swa*$_1$
and so often C he thither went so

[$_{MC}$ forhtodon þa deofla on ge-wit-seocum mannum]
afraid the devils in possessed men

'And so often as he thither went, so often were afraid the devils in possessed men.'
[Carkeet 1976: 48]

c. *Comparative correlative*

for ðon	[$_{CP}$ **swamicele**$_1$		[$_{C'}$ swa	he	læs	hæfde],
because	so	much	C	he	less	had

swa	micele$_1$	hie	wæron	beteran.
so	much	they	were	better

'Because the less they had, the better they were.'

Under the parataxis hypothesis, these two adverbs are simply interpreted independently as modifying the event structure of independent clauses at LF. Their simultaneity is determined via pre-syntactic co-indexation. We can imagine a similar analysis for other adverbial correlatives, such as comparatives, where the both clauses are interpreted independently, and the association between the co-indexed elements—be they adverbs of comparison or of time—operate just like adverbs belonging to separate sentences. I leave this extension of the parataxis hypothesis to correlative adverbials for further study, returning to the central goal of accounting for correlative RCs.

4.2.2 *Semantic hypotaxis: correlatives as subordinate clauses*

While construing the correlative as an independent clause (the *semantically paratactic hypothesis*) has its advantages, I will explore an alternative possibility in this section. The paratactic hypothesis assumes a mismatch between the syntactic representation and the semantic representation; specifically, the root node in the syntactic representation is ignored semantically so that both the RC and the main clause are treated as main clauses at LF.

Sticking to a stricter version of interpretation, whereby every node contributes to the pair-wise composition of the sentence, we have to assume that the root of the

correlative is composed with the matrix clause root, yielding a <t> for the entire complex construction. In the following paragraphs I will sketch a solution consistent with this goal, a solution which I thank Daniel Hall (p.c.) for pointing out.

The hypotactic hypothesis gives the comp *þe/swa* a role in the semantics. Specifically, it has a lexical semantic representation shown in (17):

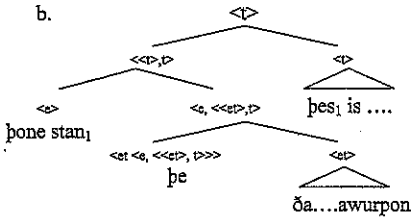
(17) *Lexical entry for þe/swa*

$$[[\text{þe/swa}]] = [[\lambda f.\lambda x.\lambda\alpha.f(x) \;\&\; [[\alpha]]^{1\rightarrow x}]]$$

Let's run through the semantic composition of a correlative to see what such a function (*þe/swa*) does.

(18) a. þone stan$_1$ þe ða wyrhtan awurpon, þes$_1$ is becomen on heofod.

b.



c. [[þe ða wyrhtan awurpon]]

= by lex. insertion. $[\lambda f.\lambda x.\lambda\alpha.f(x) \;\&\; [[\alpha]]^{1\rightarrow x}](\text{[WORKERS REJECTED]})$

= by λ-insertion $[\lambda x.\lambda\alpha.[\text{WR}](x) \;\&\; [[\alpha]]^{1\rightarrow x}](\text{THE STONE})$

= by λ-insertion $[\lambda\alpha.[\text{WR}](\text{STONE}_x) \;\&\; [[\alpha]]^{1\rightarrow x}](\text{THIS}_1 \text{ BECOME THE C.S.})$

= by λ-insertion [WR](STONE$_x$) & [THIS$_1$ BECOME THE C.S.]$^{1\to x}$

= by ass.under var. [WR](STONE$_x$) & [THIS$_x$ BECOME THE C.S.]

= by identity of index [WR & CS](STONE)

Composing from the bottom-up, we see that the RC verb *awurpon* composes with the argument *ða wyrhtan*, yielding an <e,t>. Then *þe* enters the derivation, where it takes the RC predicate. Afterwards, the internal head composes, as the *x* argument. When the matrix clause composes with this new function (the λα…, where α is any semantic category) the index of '*1*' within the matrix clause must be identical to the argument *x*. This ensures that the internal head and the resumptive pronoun are co-referential. Since their co-indexation is determined pre-syntactically, then a derivation will only succeed if they are co-referential. Thus *þe* has the function of taking some semantic element—the internal head or *x* argument—and ensuring that some element in the MC has the same index.

Let us compare this approach to the parataxis hypothesis. In the latter approach, Comp and the internal head played no role at LF in construing the correlative and main clauses together. Recall they composed independently, their sisterhood relevant only at a syntactic level. The hypotaxis hypothesis composes the clauses into one sentence. In doing so, both *þe* and the internal head are crucial to the derivation. Essentially, the analysis makes the internal head relevant to the semantics since the head serves as the argument *x* of *þe*. After combing with *þe*, the index on the internal head is visible to the matrix clause, which is then submitted as an argument itself to *þe*. Crucially, the lexical entry of *þe* is formulated such that two of its arguments must carry agreeing indices. This

process ensures that the grammar links the internal head with a resumptive element in the MC.

It may be possible for this proposal to work for adverbial correlatives, so that co-indexed adverbs must have the same temporal index, i.e. *þa$_x$…þa$^{1\to x}$*. Under this scenario, the matrix and correlative clause would have to carry the same temporal reference or the lexical entry of *þe* would not be satisfied and the derivation would crash.

4.3 Conclusion

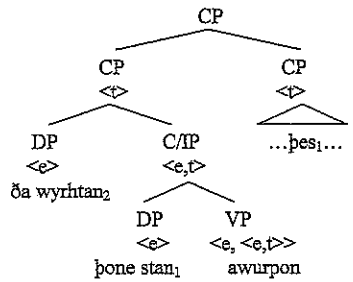
Both solutions rest on certain stipulations. The hypotaxis hypothesis invests the complementizers of correlatives with very complex lexical entries to ensure that the internal head and the resumptive are linked. I have provided independent evidence for the solution, however, by predicting that it can also account for correlative adverbials. In contrast, the parataxis hypothesis is simple and formally elegant. It too requires a qualification: there is no way for the grammar to ensure that the right DP is raised to [Spec, C] in the correlative. That is, the external argument of (19), *ða wyrhtan*, could raise, checking C^0's EPP just as well as *þone stan*. We would then have the LF representation in (19b):

(19) a. *ða wyrtan þe þone stan awurpon,
the workers C the stone rejected

þes is becomen on heofod
this has become on head

'The workers that rejected the stone, this has become the corner stone.'

b.



Clearly, the wrong DP occupies [Spec, C] of the correlative since there is no element with its index in the matrix clause. However, since the two clauses are interpreted independently, there is no way to rule out the derivation. We might suggest that (20b) is out on pragmatic grounds, and that such a sentence would not be judged strictly ungrammatical in OE, but would encounter some form of presuppositional failure—if we are to interpret the correlative as a presuppositional statement. Speculation of this sort is, of course, rather dangerous since it is difficult to find evidence for it from OE texts. In absence of motivation, then, I suggest that the hypotaxis solution is preferable. Its only detraction—the complex semantics of *þe/swa*—may be easily reformulated with clearer notation. I leave this task for further study. The hypotaxis hypothesis does, however, offer a simpler relationship between the syntactic and semantic representations, since it does not require there to be any mismatch at the interface.

Chapter 5

Comp in Old English and its Historical Development

5.0 Introduction

This section has two aims. The first is to explore the syntactic status of correlatives with respect to the matrix clause: what does it mean to be a subordinate clause but not to be embedded? This bears on the traditional debate between hypotaxis versus parataxis. The non-embedding status of CPs in OE, however, requires certain qualifications since embedded CPs appear throughout all extant OE texts. This fact bears on the second aim of this section, which is the historical development of embedded CPs from early Germanic (perhaps proto-Indo-European) to OE. I will show that OE represents an intermediate stage in this development, where embedded and non-embedded subordinate clauses co-exist. Most importantly, I give a diachronic analysis of the rise of embedded CPs, with reference to several concomitant innovations in early Germanic: predicate abstractors and V2.

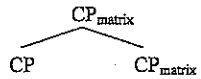
5.1 Non-embedding Comp

It is assumed that proto-Indo-European did not allow embedded subordinate clauses (Harris and Campbell 1995; Kiparsky 1995, Hale, 1978). That is, CPs could not be contained (either as adjuncts or arguments) within a matrix CP: (1) schematizes this generalization:

(1) $*[_{CP/IP}\ [\ _{CP}\ ]]$

The correlative construction, which is common to all early Indo-European languages (e.g. Vedic, Hindi, Latin, OE), conforms to this restriction. A CP is only licensed in the following configuration:

(2)



At some point, perhaps in early Germanic, subordinate clauses "change in status from adjuncts to arguments and modifiers in their own right" (Kiparsky 1995, p.158). Kiparsky (1995) concludes that before this, subordinate clauses were not CPs, taking the general line that "C^0 is obligatory in subordinate clauses, because they are in argument and modifier position and sentences must be turned by complementizers into CPs in order to function as arguments and modifiers" (Kiparsky 1995, p.141). Implicit in this claim is the suggestion that non-embedded subordinate clauses do not contain a complementizer, since non-embedded subordinate clause, such as correlatives, do not sit in argument or modifier position. I believe there to be an error in the logic here, however. Certainly the claim that complementizers turn sentences (saturated predicates) into arguments and modifiers is valid. However, it does not necessarily follow that subordinate clauses that do not appear in (embedded) argument and modifier position do not contain complementizers. The OE correlative, which is just such a subordinate clause, contains an IP—a syntactically saturated predicate—but it does not function syntactically as an IP since it cannot stand as an independent clause:

(3) a. *þone stan þe ða wyrhtan awurpon.

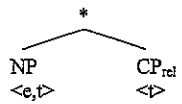
b. *to swa hwilcere leode swa we cumaþ.

Clearly, then, there is some functional item that transforms the sentence (IP) into something else. I have been labeling this "something else" a CP, since the heads *þe* and *swa* appear as Comps elsewhere in the language. I will stick with this category label for reasons that will become clear. So instead of proposing that no Comp existed in non-embedded (correlative) clauses, I maintain that there existed a Comp that lacked embedding properties, and I will argue that non-embedding Comp (*þe/swa*) nevertheless had the ability to transform a sentence into something that could be—in fact, *had* to be—linked to a matrix argument, for correlatives relatives, or a matrix modifier, in the case of correlative adverbials. My hypothesis concerning non-embedding Comp will find a formal instantiation in Holmberg's (1986) proposal for category features in Comp.

First, let us begin with the properties of CPs in OE that do not have to adjoin outside the matrix clause—that is, embedded CPs (arguments and adjuncts) and matrix clauses. In embedded adjuncts such as RCs like PDE *wh*-RCs and OE *se/se-þe* RCs, there is a relative pronoun which acts as a predicate abstractor; that is, the RP raises as an operator to $[\text{Spec, C}]_{\text{RC}}$ where in the semantic component it turns the closed sentence into an open one, a predicate. This predicate can then enter a modification relationship with another predicate—the external NP head—via set intersection (Heim and Kratzer (1998)). Crucially, correlatives are different from embedded RCs in this respect. We have seen that OE correlatives do not contain a typical RP: the internal head is not an operator; it is a fully referential DP that needs to compose with the RC predicate. I propose, then,

that Comp in correlatives does not allow for a predicate abstractor. This explains why correlatives cannot embed: since a predicate abstractor changes the semantic type of a clause, to an <e,t>, this <e,t> is licensed semantically through the rule of predicate modification. If predicate abstraction does not occur, then the RC will remain a <t>, creating an LF configuration below:

(4)



A <t> cannot compose with an <e,t> and the semantic derivation will crash. Thus CPs that do not allow for a predicate abstractor cannot embed, although this is ruled out at a semantic level. Embedded RCs on the other hand, show predicate abstraction. We might question, then, whether *þe/swa* are in fact complementizers when they appear in correlatives. Since [Spec, C] is canonically an operator position—even in OE—then a predicate abstractor should be able to merge in the RC, raise to $[\text{Spec, C}]_{\text{þe}}$ and derive the necessary semantic representation that allows for embedding. This view would agree with Kiparksy (1995), who argues that non-embedded subordinate clauses lack Comp. However, we need to explain the presence of *þe* and *swa* some way and why a clause headed by such complementizers cannot stand independently, at least syntactically. Instead of rejecting the presence of C^0 in correlatives, let us investigate properties of C^0 itself.

5.2 The emergence of embedding and predicate abstractors

The historical development of CP proceeds in the following way in early Germanic: non-embedded correlatives appear first, with a non-embedded C^0; next, *þe*-RCs appear. These two stages must occur before OE, perhaps in Common Germanic, since both correlatives and *þe*-RCs are easily found in all extant OE texts. At the outset of OE—perhaps proto-OE—CPs acquire different functions. First, we find embedded arguments headed by CP (data from Mitchell (1992)):

(5) a. ða ðohte he [$_{CP}$ ðæt he wolde gesecan helle godu]
then thought he C he would seek hell.*g* gods

'Then he thought that he would seek the gods of hell.'

b. bæd [$_{CP}$ ðæt hyra randas rihte heoldan]
requested C they shield right hold

'…requested that they should hold their shields properly.'

c. ic wat [$_{CP}$ ðæt ðu eart heard mann]
I know C you are hard man

'I know that you are a hard man.'

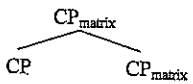
Also, *se-* and *se-þe* RCs also appear, where there is a clear relative operator. And lastly, we find V2 phenomena, in which the inflected verb moves to Comp and an operator occupies [Spec, C]. Let us summarize the historical stages of Germanic Comp. The first stage, Stage 1, does not allow embedding, so all CPs are adjuncts to the matrix clause. In the second stage, both embedded and non-embedded CPs exist. This is the stage in which surviving literature was written, where we see relatives of all types: correlatives and

embedded relatives, as well as CP arguments and V2. The third stage allows only embedded relatives, a stage which sees the dramatic rise of *þæt* as Comp replacing *þe*. *þæt* is exclusively an embedding Comp, since we never find it in correlative constructions. *þe* on the other hand appears in both embedded and non-embedded (correlative) constructions.

(6) *Three stages in the development of embedded CP*

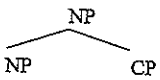
Stage 1: *non-embedded CP* (a. and b.)

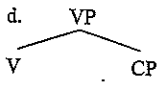
a. $*[_{CP/TP}\ [\ _{CP}\ ]]$

b. 

c. C = {*þe, swa*}

Stage 2: *embedded CP (c,d) and non-embedded CP (a, b)*

d. 

d. 

e. C = {*þe, swa, þæt*}

Stage 3: *only embedded CPs*, (c.d.)

f. C = *þæt*

This historical outline, however, is merely a description of the development of CP. I turn now to an explanation for this change.

Holmberg (1986) proposes that Comp has three possible feature specifications, each of which allows CP to fulfill different syntactic and semantic functions. When Comp is valued as [+N], it occurs as an argument as in (5). When [+V], Comp heads a predicate—i.e. a matrix clause or an embedded modifier. In the case of matrix clauses, [+V] motivates V2 movement, where the inflected verb moves to check this feature. A third category is unvalued for either N or V, which I notate as [0N, 0V]. Using this typology, we can see that Stage 2 in the historical development of Comp sees the introduction of [+V] and [+N] Comp. Leaving aside *þe*-RCs temporarily, embedding is the result of Comp acquire these lexical class features.

What about Comp in correlatives? i.e. what was Comp in Stage 1? First, notice that Comp in this stage does not host relative operators in [Spec, C]: neither *þe*-RCs nor correlatives involve a predicate abstractor. I propose that in Stage 1 Comp is unvalued for both [N] and [V]. Since it is unvalued for [+V], it does not yet host relative operators, nor does it exhibit V2, which is obligatory with $[\text{Spec, C}]_{MC}$ operators/focus. (Recall that neither relative operators nor V2 have emerged by Stage 1.) Also, since Stage 1 Comp is unvalued for [N], it cannot serve as the argument of a verb, which needs to select a [+N] category. The only structural position for unvalued Comp, then, is a matrix-adjoined one. And this is precisely the only place we find Comp in Stage 1.[17] (7) summarizes the development.

[17] Again, *þe*-RCs do appear to be embedded even though I have situated it in Stage 1. I will return to *þe*-RCs in §5.2.1.

(7) *The diachrony of Comp from Germanic to late OE*

Stage	Fs in Comp	C^0	Position of CP	Operator	constructions
1 (pre-OE)	[0N, 0V]	*þe, swa*	matrix-adjoined	no	correlatives; *þe*-RCs
2 (OE)	[0N, 0V]	*þe, swa*	matrix-adjoined	no	correlatives; *þe*-RCs
	[+N]	*þe, þæt*	A-position	no	CP arguments
	[+V]	Ø, *þe*	matrix; NP-adjoined	yes	V2 matrix-clauses; *se-* and *se-þe* RCs
3 (late-OE, ME)	[+N]	*þæt*	A-position	no	CP arguments
	[+V]	Ø, *þe, þæt*	matrix; NP-adjoined	yes	V2 matrix-clauses; *se-* and *se-þe* RCs; *wh-(that)* RCs (ME)

The rise of embedding as shown above is due the co-occurrences of two forces: first, the valuing of [N] and [V] on C^0; and second, the innovation of [Spec, C] as a true operator position which hosts predicate abstractors, and V2 operators. Crucially, just when we see the rise of embedded RCs we also find the emergence of V2, that is proto-Germanic. Now we know that in matrix V2 constructions, [Spec, C] is an operator position, hosting *wh*/focus, NEG phrases, and adverbs which induce V2. With this innovation, [Spec, C] of RCs—i.e. adjuncts—becomes an operator/predicate abstractor position which allows the CP to embed semantically.

The introduction of [+N] Comp finds motivation in the proposal of van Gelderen (2002), who argues that *þæt* in OE develops from a reanalysis of the singular neuter

demonstrative *þæt*. Specifically, the demonstrative is found in [Spec, C] of *þe*—constructions such as *þæt þe*, or reduced *þætte* are found in some texts (Mitchell 1992). When *þe* appears deleted, *þæt* is reanalyzed as a Comp. However, this Comp retains its nominal features specification of its demonstrative precursor, and allows CPs to functions as arguments.

The above analysis of the diachrony of Comp is similar, in very general terms, to Kiparsky's (1995) study—with crucial differences however. Kiparsky, too, relates the emergence of V2 with the emergence of embedding. However, he provides no formal explanation for the relation.

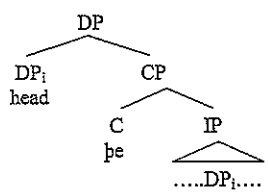
5.2.1 *A new explanation for* þe-*RCs*

The above analysis explains why *se* and *se-þe* RCs are embedded, and why correlatives are not. But it does not explain why a *þe* RC is embedded. That is, I have equated embedded RCs with the presence of a predicate abstractor and a valued C^0. Since *þe*-RCs do not have such an operator, they do not embed in the same sense that *se-þe* RCs embed. I suggest that the rise of embedding was not the result of one change, but a series of small steps. First, during Stage 1, a relative exactly like a correlative RC was placed, perhaps parenthetically, within the matrix clause. This led to the *þe*-RC, which did not modify its head in the sense of predicate modification but through deletion under the identity of a co-referential (governing) head. This then led to the rise of truly embedded RCs—*se-þe* RCs. This proposal offers an independent force that supported the emergence of embedded subordinate clauses.

In addition, it is generally assumed that embedded relatives (i.e. externally headed relatives) are derived historically from correlatives. Hock (1988) analyses the development of correlatives into externally headed relatives using principles of reanalysis, as does Bianchi (2001), although the two approaches are very different. In addition to these proposals, I will provide some illuminating evidence as to how this development may have occurred. Let us turn to the details of this change.

Recall that the major (embedded) relativization strategy in OE is the *þe*-RC, which consists merely of the complementizer *þe* heading a CP adjoined to a nominal (DP for non-restrictive, NP for restrictive). It is often said *þe*-RCs resemble PDE *that*-relatives, where there is a null operator which functions as a relative pronouns do in *se* and *se-þe* relatives. However, Allen (1977; 1980) presents evidence that *þe*-RCs do not involve the movement of an operator. Evidence shows that *þe*-RCs do not involve even covert movement since they appear to allow preposition stranding (something OE does not permit). Allen proposes that *þe*-RCs are derived through a process of identity under deletion, whereby an RC-internal noun (and perhaps its selecting D) is deleted when it is co-referent with the head.

(8) *þe*-RCs: identity under deletion



Updating Allen's proposal, we might say that the second DP_i, within the RC, is not spelled out at PF to avoid the repetition. Further support for this analysis comes from the fact that an overt resumptive pronoun is often found in the gap-position of the *þe*-RC: [18]

(9) a. Eadig bið **se** **wer**$_1$, [þe **his**$_1$ tohopa
blessed be the man C his hope

bið to Drihtne]
be in Lord

'Blessed be the man whose hope is in the Lord'
[Mitchell 1992, §162.2]

b. þæt **se** **mon**$_1$ ne wat [þe **him**$_1$ on
that the man not know C him.*d.s.* on

foldan fægrost limpeð]
earth pleasantly goes

'That the man for whom it goes very presently on the earth does not know.'
[Mitchell 1992, §162.2]

In (9a), the relativized position in the *þe*-RC contains a pronoun, *his*, co-referent to the head, *se wer*. We can take the RC-internal resumptive pronouns in (9) as simply the result of the *identity under deletion* not applying consistently, or deleting a only co-referent NP, but not its selecting determiner.

It is now obvious that the base form of the (embedded) *þe*-RC is identical to the base-from of the correlative RC, where a DP is generated within the RC. Moreover, just like the internal DP (the head) of the correlative, the internal DP of a *þe*-RC is not a relative pronoun (a predicate abstractor). This does not answer the question of why a *þe*-

[18] This kind of *resumptive pronoun* should be distinguished from the kind of resumptive elements found in the matrix clause of a correlative construction.

RC appears to be embedded. I suggest that the *þe*-RC is more like a parenthetical phrase, than an embedded Comp. When the *þe*-RC is in it surface position (embedded) the rule of *deletion under identity can* operate, since this rule applies when a RC head governs (c-commands) a co-referential DP in the RC—at least one that is not a relative pronoun. This implies that the rule of *identity under deletion* operates at PF, a not undesirable conclusion. The only reason that the internal head of a correlative is not deleted is because there is no c-commanding, co-indexed DP; that is, the co-referential DP in correlatives is buried in the matrix clause and hence cannot c-command the internal head of the correlative. Thus *þe*-RCs are simply correlatives that are adjacent to the head at PF—and *identity under deletion* simply deletes part or all of the internal DP.

This proposal allows for a step-by-step introduction of embedded RCs. Once a *þe*-RC appears to the learner as though it has been syntactically merged adjacent to the head, and once operators begin to occur in [Spec, C] elsewhere in the language, *þe* is reanalyzed as a [+V] Comp and the resumptive pronoun in (9) can be raised. We now have the *se-þe* RC, where *se* serves as a predicate abstractor.

5.3 Conclusion

We have seen that a correlation can be drawn between the existence of predicate abstractors—i.e. relative pronouns—and the rise of truly embedded RCs. In turn, the rise of predicate abstractors coincides with the emergence of V2 which enforces [Spec, C] as an operator position, therefore a position that can host predicate abstractors. Thus we saw three historical stages. The first stage involved only correlative RCs, which could not embed. At a later stage, certain categories could select a CP headed by a [+N] C^0.

Crucially, however, a *þe*-RC does not semantically embed, in that it does not involve predicate modification but deletion under identity of an RC internal DP. In the second stage, true predicate abstractors arise and *se-þe* RCs are generated as truly embedded RCs, both syntactically and semantically. Once *þæt* replaces *þe*, all RCs must be embedded since *þæt* is an exclusively embedding Comp.

5.3.1 *A brief note on hypotaxis*

The syntactic representation of correlatives is that of a subordinate clause, even though it is not embedded. I therefore take hypotaxis to refer to any subordinate clause that is adjoined somewhere to or in the matrix clause. An embedded subordinate clause is one that is adjoined to a phrase or merged with a head contained within the matrix clause. Under these definitions, the correlative is not paratactic syntactically—although it is paratactic at a semantic level if we assume the *semantic parataxis hypothesis* set out in §4.2.2.

(10) *Types of hypotaxis and their formal definitions*

Hypotaxis = CP adjunction

embedded	non-embedded
(=adjunction to non-root XP)	(=adjunction to root XP)

Correlatives are then hypotactic constructions, just not embedded hypotactic constructions. Parataxis then does not involve adjunction, since in paratactic constructions each clause is equal: e.g., *I came, I saw, I conquered.* The correlative, however, is a **syntactic dependent**, since it does not project over the matrix clause. Thus

the development of CP in early English is not the change from parataxis to hypotaxis. Rather, it is the change from non-embedded hypotaxis to embedded hypotaxis. This is essentially the claim set forth by Campbell and Harris (1995), who argue that hypotaxis develops out of this asymmetric parataxis, i.e. high embedding. This now leaves the notion of parataxis undefined, which would suggest that the parataxis–hypotaxis dichotomy is a false one. The real syntactic distinction is between embedded and non-embedded hypotaxis—that is, matrix adjunction.

Chapter Six

Conclusion and Further Issues

This study has examined how clauses are put together in Old English, specifically, how clausal modifiers relate, semantically and syntactically, to their matrix clauses. I have taken the correlative construction as a case study of clausal modification. Recall there were three majors questions about the syntax and semantics of correlatives: the status of the head; the relationship between the head and resumptive element; and the syntactic and semantic configuration holding between the correlative and the matrix clause.

It was argued that the head of the correlative is internal: the nominal in the RC acting as head is generated within the RC predicate. This was evinced by its case, which is always the case appropriate to the head's function within the MC, and by the fact that the head pied-pipes prepositions when raised. The internal head raises to [Spec, C] for purely syntactic reasons, checking an EPP-feature on C^0. Note, though, that this movement is not operator movement in the way that relative pronouns undergo movement to [Spec, C] in OE *se/se-þe* RCs or PDE *wh*-RCs. Rather, it is similar to A-movement. It is true that, like relative operators, the internal head relates the RC to the matrix nominal at LF, much as relative operators do. However, unlike relative operators, the internal head does not it receive its reference as a variable/pronoun under assignment, nor does it convert the RC sentence into a predicate, as RPs do in RRCs. Rather, the internal head of the correlative is fully identified, and serves to link the RC with the main clause, as proposed by the *semantic hypotaxis hypothesis* for correlatives (§4.2.2). In a sense, then, the internal head of a correlative is not analogous to external heads of RRCs.

In the latter, the RC modifies the internal head via predicate/set intersection. In the former, the head simply functions as canonical argument of the RC predicate. The internal head's status within the RC mirrors, in fact, the function of RPs in PDE NRCs. Recall that Demirdache (1991) construes NRCs as main clauses at LF, at which point the relative pronoun can refer independently, acting like a pronoun that receives its interpretation across the discourse. Crucially, the RP in a NRC combines with the RC predicate like any other argument even though it is dislocated to [Spec, $C]_{NRC}$. Interestingly, a PDE NRC can contain a nominal complement to the RP—at least in marginal, somewhat archaic contexts (1a,b). This is ungrammatical in RRCs (1c):

(1) *Internal heads in PDE NRCs*

a. Recall Plato's argument for the immortality of the soul, which argument has been studied for centuries the world over by learned men and laymen alike.
[my example]

b. John belongs to the International Fraternity for Helping Others, which organization has been awarded the Nobel prize.
[adapted from McCawley 1988: 420]

Internal heads disallowed in RRCs

c. John belongs to the International Fraternity for Helping Others which organization has been awarded the Nobel prize.
[adapted from McCawley 1988: 420]

This example is much like a correlative, with a full DP in the RC. This fact begs further questions about the development of correlatives, and makes the *semantic parataxis hypothesis* for OE correlatives a tempting analysis.

The second concern of this study has been the relationship between the internal head and the resumptive element. Under the *semantic hypotaxis hypothesis* (§4.2.2), it

was proposed that the non-embedded Comps *þe* and *swa* take the MC as its semantic argument. This allowed a semantic 'link' to be established between the internal head and the resumptive element at LF. This 'linking' was formulated by proposing that Comp requires the MC to contain an element with and index identical to that of the internal head. This formulation, however, requires the index on the resumptive element to be available to the correlative Comp, and thus visible at the root of the matrix clause. Recall that there were no structural restrictions on the resumptive element; thus it is not immediately clear that its index would percolate to the root of the matrix clause. However, if the resumptive element's index is not visible to the correlative Comp, we cannot ensure that the internal head and the resumptive are co-referential. Notice that above I formulated the linking of the head and resumptive as a function of the correlative to ensure that the MC "contains" an index identical to that of the head. Since semantic composition is pair-wise, "contain" is not a mechanism we can easily appeal to. I leave this difficulty for further study, noting that the *semantic parataxis hypothesis* (§4.2.1) does not present such problems.

Our last major question concerned the syntactic configuration of the correlative clause. We have seen that OE has two major ways of combining clauses. The first strategy is embedding, which is the familiar adjoining of a modifying CP to a maximal projection contained within the matrix clause. The second strategy is that found in the correlative—of both RC and adverbial type—where a CP is not embedded but adjoined to the highest projection of the matrix clause. We found that Comps that could not embed were unvalued for lexical class features, so that *þe* and *swa* were [0N, 0V]. That an unvalued Comp can only adjoin to a maximal projection makes intuitive sense: since it

has no setting for these features—either positive or negative—then it is only licensed in an unselected position. Moreover, it cannot stand alone as a matrix clause since it is not valued as [+V], which Holmberg (1986) takes to be the feature present in matrix clauses.

The rise of embedding in OE is due, then, in part to the innovation of these features on Comp. It was proposed that certain Comps arose which carried either [+V] or [+N] features, the former present in main clauses and embedded modifiers, and the latter in CP arguments. However, the licensing of embedded CPs is not simply due to the emergence of these features on Comp. Recall that early Germanic also saw the rise of V2: this motivates the presence of [+V], since V2 is often seen as the movement of the inflected verb to satisfy this feature. At the same time as V2 emerges, we find that [Spec, C] hosts focus material and operators which trigger V2. Thus it is no surprise that by the time of recorded OE, we find the rise of relative operators—real predicate abstractors that convert sentences into open predicates as seen in *se* and *se-þe* RCs. We saw that this allowed a RC to semantically embed.

6.2 Further issues

There remain many important questions about the analysis presented in this study. Aside from those outstanding issues mentioned above and throughout the work, I will sketch out a few of them out in this section.

Many of the claims set forth regarding the historical development of Comp and RCs in OE might find support in examining variation that exists among OE texts. We need to ask whether certain structural configurations are preferred for correlatives? And whether there are preferred positions from which to extract the internal head? Also useful

would be a statistical analysis of the occurrences of correlatives with respect to embedded RCs through the several centuries of recorded OE, and leading into ME.

Along the same lines, it is now necessary to examine the fate of correlatives in late-OE and early ME. Why is this construction no longer available by this time? One simple explanation may involve the degradation and eventual loss of morphological case at this stage of English. Recall that case-marking served as a major diagnostic for the internal headedness of correlatives. For the learner, too, case provides evidence that correlative heads are internal—especially considering that the inherent case-marking had real semantic import. Once case is lost, however, the is little evidence for the learner that correlatives are internally headed. The child then analyzes the correlative as an externally headed RC—i.e. just a complex DP in topic position, the very same structure of the PDE translation of correlatives:

(2) a. The stone that the workers rejected, (this) has become the corner stone.
b. Whichever university you choose to go to, make sure it offers linguistics.

Since such a configuration is already possible in OE, the correlatives are easily reanalyzed. Other factors may also have led to the demise of the correlative, such as the gradual emergence of *þæt* as the primary Comp over *þe*. *þe* has the semantic function necessary to construe the internal head and the resumptive, while *þæt* does not. And finally, we should question what properties of the correlative may still exist in PDE. PDE free relatives are arguably internally headed; their relationship to correlatives both diachronically and synchronically requires further study (see Srivastav (1995) for a comparison of Hindi correlatives and PDE free relatives).

In addition, the historical development of embedded Comp and its relation to the innovation of V2 in Common Germanic is still largely unexamined. Why exactly do we find the nearly simultaneous emergence of embedding and V2. I have sketched out a solution based on the rise of operators in [Spec, C]. That is, we know that operators are triggers of V2, so the once this is established [Spec, C] can then host relative operators allowing semantic embedding through predicate abstraction. I have not, however, provided an diachronic analysis of the rise of operators in [Spec, C] and V2—a matter much studied and well beyond our purposes here.

Lastly, an close investigation of other types of subordinate clauses in Common Germanic and OE, such as conditionals, is needed. The semantic interpretation of the correlative adverbials also deserves more attention. What is striking is that the correlative construction offers a uniform strategy for clausal modification at both the semantic and syntactic level—be it adjectival or adverbial modification.

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