



4-23-2008

# Comparatives and inversion in English: A (necessarily) diachronic account

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## **Abstract**

The paper argues that, based on insight gained from the syntax of earlier English, comparative inversion (CI) reveals itself as a far simpler process than what is standardly assumed. Starting from the insight of a suggestion made by Haeberli (2002) and adapting it to comparatives, the major syntactic diachronic developments of CI are explored.

# Comparatives and Inversion in English: A (Necessarily) Diachronic Account

Remus Gergel\*

## 1 Introduction

Comparative inversion (CI) is the phenomenon found in sentences such as the ones given in (1).

- (1) a. Harvard undergrads, however, were unmoved. They generally give the impression of being far *more supportive of their president* than **is the faculty**. (*The Weekly Standard*, March 7, 2005)
- b. The Rochester scientists have now shown that parthenolide is in fact *more selective at stopping cancer through apoptosis* than **was the standard drug cytarabine**. (*Townsend Letter for Doctors and Patients*, July, 2005)

As a first descriptive approximation, CI is an optional, register-based phenomenon in PDE (present-day English; cf. Quirk et al. 1985, Huddleston and Pullum 2002, among others).

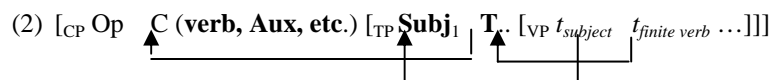
The term “inversion” on standard accounts stands for movement of an auxiliary element across the subject and towards a position which is usually identified with the complementizer head position C. In this paper, we merely adopt the term “inversion” to refer to such sentences and in particular to the non-canonical surface word order in which a finite verbal/auxiliary element precedes the subject. However, since we will essentially argue that there is no syntactic need of moving a head overtly to C, the term is to be taken as a simple descriptive one in the present context. Moreover, I and T are identified and used interchangeably here (cf. Gergel 2005 for some arguments drawing on ellipsis). We take the reductionist phrase-structural view as a matter of simplicity; the results shown can also be reformulated in line with more articulate versions of the Split-Infl tradition.

The focus of the paper lies on the most basic syntactic processes in-

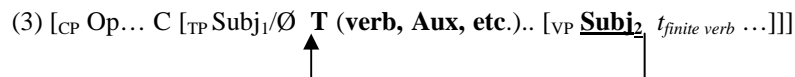
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\*This study is a partial report on the results reached during a DAAD visiting research position at the University of Pennsylvania (Jan.–Oct. 2006). It would not have been possible without the highly insightful discussions with A. Kroch and the excellent linguistic environment at U. Penn. I also thank the audiences in Philadelphia, Tübingen and S. Beck, P. Culicover, E. Göbbel, M. Romero, B. Santorini, A. Speyer, S. Winkler, and C. Yang for interesting input along the way. All errors are mine.

volved in CI, i.e. on how CI takes place in the syntax. As a second major component we investigate the diachrony of CI and argue that it is crucial in grasping the mechanics of CI. This constitutes exactly the scope of this research.<sup>2</sup> To start with our syntactic concerns: (2) gives the traditional syntax.



Our alternative proposal for CI is schematically shown in (3):



Beyond the possibility of the V-to-T step in the derivation of (2) and (3), there are crucial differences. The movement of the auxiliary to C is only featured by the standard proposal, as is the obligatory subject in Spec, TP.

After an introduction of the data in section 2, section 3 lays out the issues in the syntax-semantic representation of comparatives in the context of language variation and change to then discuss the main ingredients of the proposal. Section 4 presents the main quantitative findings; section 5 illustrates the proposal further with respect to the role played by low-subjects.

## 2 Data Base

### 2.1 Main Sources

The major sources constituting the data base for this study were given by *The York-Toronto-Helsinki Parsed Corpus of Old English Prose* (Taylor, Warner, Pintzuk, and Beths 2003), *The Penn-Helsinki Parsed Corpus of Middle English* (Kroch and Taylor 2000), and *The Penn-Helsinki Parsed Corpus of Early Modern English* (Kroch, Santorini, and Delfs 2004). These corpora have three essential features for my current purposes. They represent extensive sources in diachronic terms, are syntactically sufficiently detailed,

<sup>2</sup>By taking the present evidence into account, further research could perhaps be made even more fruitful. Suggestions for what might influence CI in conjunction with elliptical processes have been given as an ECP-version at PF (Merchant 2003, a.o.) and, more generally, as an information-structural means (e.g. Gergel, Gergel, and Winkler 2004; cf. Winkler 2005 on the pertinent model of information structure). We suggest that with the simplified syntax, an integrated IS account is generalizable based on the information-structural isolation of the subject (cf. also Drubig 2003, Gergel 2007a, Hegarty 2005, Lerner 1977 for suggestions).

and are largely consistent with one another. The examples are given by their standard corpus identifications; examples found elsewhere are mentioned as such.

## 2.2 Sub-corpora

Sub-corpora are given by the traditional Helsinki-Penn based delineations. For CI, they are interesting in particular for ME. The segments are as in (4).

(4) **M1**: 1150-1250; **M2**: 1250-1350; **M3**: 1350-1420; **M4**: 1420-1500

## 2.3 Token Selection

Comparative structures from the corpora were the natural target of data extraction and all included texts have been considered. There are three issues that came up in the work worth mentioning. First, equatives have been included. This is in line with the corpus annotations and with standard theories of comparison (as a useful approximation). Second, in order to capture the development of CI, a surface effect, I restricted attention to clausal comparative structures (CCS). These were chosen to include a minimum of a finite verbal element and an overt subject. For empirical reasons this seemed to be the most reliable choice. Third, data coded in a similar fashion contains, e.g., *swa*-clauses in OE, cf. (5) and (6). In general, *swa*-clauses can be equatives, but they can also introduce relations that do not compare degrees in a strict scalar sense, cf. e.g., manner clauses. Further, as is well known from the tradition on OE (cf. Mitchell 1985 in particular), there are cases that cannot be told apart (the pertinent contexts allowing two readings).

- (5) Sume sindon ungesewenlice gastas butan lichoman swa  
 [swa synd ænglas on heofonum]  
 as are angels in heaven (coelive,+ALS\_[Christmas]:53.40)
- (6) And he wæs fram him alocen  
**swa mycel** [swa is anes stanes wyrp]  
 as much as is a stone's throw (cowsgosp,Lk\_[WSCp]:22.41.5478)

Some of the *swa*-based CCS, e.g. (6), interestingly have a co-anaphoric *mycel* 'much', which may suggest that a notion of degree/quantity is involved.

Whilst the CCS constitute a superset of traditional comparisons, they display the same syntactic behavior, which offers the prospect of a unified account. Further, having a larger data base also seemed a superior choice to an arbitrary exclusion of tokens (for the fickle issues mentioned).

### 3 Comparatives in Language Variation/Language Change

#### 3.1 Grammatical Representation of Comparatives in Earlier English

In view of recent studies showing cross-linguistic variation in comparatives (cf. Beck, Oda, and Sugisaki 2004, Gergel 2007, Reglero 2007, Snyder, Wexler, and Das 1995, a.o.), it becomes necessary to control for possibly interfering issues in the representation of degree construction and syntactic repercussions. Beck et al. (2004) argue that for languages like Japanese a standard Deg-based semantics cannot explain crucial data. Subcomparatives and degree question are classical cases in point, as shown by their status and the means used in (7) and (8), respectively.

- (7) a. \*Kono tana-wa [ano doa-ga hiroi yori (mo)] (motto) takai.  
       this shelf-Top [that door-Nom wide YORI (mo)] (more) tall  
       b. This shelf is taller than that door is wide.
- (8) a. How smart is John?  
       b. John-wa dore-kurai kasikoi no?  
       John-Top which.degree smart Q  
       To which degree is John smart?

There are a number of further possible diagnostics. Since I cannot illustrate the point in full here for other languages, I refer to the sources cited and focus on the historical stages of English next from the perspective of possible parametric variation in degree constructions. Although, as the extant literature illustrates, it is possible to get variation in comparatives even within genetically related languages, we will show that early English can be reasonably assumed to have had a positive setting for the degree abstraction parameter in the sense of Beck et al. To achieve that, we run some crucial tests. First, measure phrases are attested at all stages; cf. e.g. OE (9):

- (9) a. ne bið he lengra ðonne [**syfan elna lang**]  
       neg is he longer than seven ell long  
       (coorosiu,Or\_1:1.15.2.248)  
       b. þæt hit mihte beon [**preora mila brad ...**],  
       that it might be three miles wide  
       (coorosiu,Or\_1:1.15.26.272)

We find subcomparatives attested, including subequative constructions, at all stages of the language, as illustrated with the ME examples in (10).

- (10) a. for this aseth-makyng is mare plesande to the blissede godhede  
and *mare wyrshipfulle to mannes saluacion* withowtene com-  
paryson [than euer was the synne of Adam harmfulle]  
(CMJULNOR,61.311)
- b. zuo moche is worþ þe man: ase is worþ his land.  
(CMAYENBI,90.1751)

Direct, indirect, and implicitly formed degree interrogatives with *hu* ‘how’ are diachronically clearly available; cf. the pied-piped OE examples in (11).

- (11) a. **Hu feor** wolde ge nu ryman eower land?  
how far want you now enlarge your land  
(cocura,CP:44.329.25.2229)
- b. Gesihst þu, min leofa bruðor, **hu fela** lande wuniað gyt on  
seest thou my dear brother how much land stays yet in  
hæðenscipe...?  
paganism (coalive,+ALS\_[Denis]:124.5856)
- c. and nellað understandan **hu stuntlice** hi doð,  
and neg-wants understand how foolishly he acts  
(coalive,+ALS\_[Auguries]:129.3587)

Differential comparatives are also attested, as shown in (12).

- (12) **Hu micle mare** is ðonne þæs monnes lichoma to metenne wið  
how much more is then the man’s body to measure/compare with  
þæt mod þonne seo mus wið ðone mon.  
the mind than the mouse with the man (coboeth,Bo:16.36.2.650)

Superlatives in earlier English are well-behaved in the sense of the standard syntax-semantic representation of degree, and morphosyntactically clearly attested. In OE, in addition to the prevalent analytical formations, there are residual suppletive forms (as a superset of today’s forms). They can be traced back to Proto-Germanic and may yield interesting evidence for an earlier independent morpheme of comparison (Ringe 2006).

*Too* constructions are another field of degree constructions and their existence offers a further supportive argument for a standard (in the Beck et al. sense) degree representation. Examples from OE and ME are given in (13).

- (13) a. ...þæt hy ne synd **to scorte**, ...  
that they neg are too short, ... (cobenrul,BenR:55.89.17.994)
- b. for ha weren **to longe** to writen ham here.  
(CMANCRIW-1,II.122.1555)

Even though difficult to verify diachronically, a further expectation emerging from recent research on degree constructions concerns scope interactions of the comparative with quantifiers in some cases (cf. e.g. Heim 2006 and the references cited therein). Confirmation of this prediction is illustrated in (14)-(16) with examples from EModE, ME, and OE, respectively.

- (14) The rules I have already given will I suppose doe that better than all the Apothecarys shops and medicines in the County;  
(LOCKE-E3-H,48.73)
- (15) And as for beddyng, Lyard my hors had more ese thenn had sum good yeman, (CMGREGOR,238.2605)
- (16) Næfre ic maran geseah eorla ofer eorþan ðonne is **eower sum**...  
never I greater seen of warriors on earth than is-of-you one  
(*Beowulf*, III.247)

While (16) has plausible narrow scope, (15) is compatible only with apparent wide scope of the quantifier (Heim 2006). Moreover, (17) might, in principle, be expected to have two scope possibilities, but its context indicates wide scope. With this, we may draw the interim conclusion that the degree constructions of earlier English were similarly formed semantically as in PDE.

### 3.2 Syntactic Essentials of ME and OE

As research over the past two decades has revealed (Fischer et al. 2000, van Kemenade 1987, Kroch et al. 2000, Pintzuk 1991, among others), OE and early ME show two major types of verb movement, which are characteristically distinct in their scope. One is the so-called operator movement. It has been observed that certain contexts trigger inversion of the finite element to C. A non-exhaustive selection of these contexts for OE is given in (18)-(20) below (all examples (18)-(20) are cited after Kroch et al. 2000).

- (17) a. hwi sceole we oþres mannes niman? (AELS 24.188)  
why should we another man's take
- b. þa ge-mette he sceadan (AELS 31.151)  
then met he robbers
- c. ne mihton hi nænigne fultum æt him begitan (Bede 48.9–10)  
not could they not-any help from him get

In cases involving *wh*-questions, operators such as *þa* and a few other adverbs or the negation particle *ne*, the verb moves to C; i.e. this movement is relatively uncontroversially movement to a high position. In particular, the example (17) shows that it can affect pronouns (just as it can affect full DPs,



not shown here). However, when it comes to a large class of Germanic V2, viz. topicalized structures, an important difference obtains; cf. (18) vs. (19).

(18) Topicalization (cited after Kroch et al. 2000):

- a. & of heom twam is eall manncynn cumen (WHom 6.52)  
and of them two is all mankind come
- b. þæt hus hæfdon Romane to dæm anum tacne geworht  
that building had Romans with the one feature con-  
structed (Or 59.3)
- c. þær wearþ se cyning Bagsecg ofslægen  
there was the king Bagsecg slain  
(Anglo-Saxon Chron., Parker, 871)

(19) The situation with pronouns (*ibid.*):

- a. Ælc yfel he mæg don (WHom, 4.62)  
each evil he can do
- b. scortlice ic hæbbe nu gesæd ymb þa þrie dælas... (Or 9.18)  
briefly I have now spoken about the three parts
- c. æfter his gebede he ahof þæt cild up... (AECrom. 2.28)  
after his prayer he lifted the child up

While there is variability in the literature on the implementation of the operator/non-operator contrasts, it is clear that they were part and parcel of the grammar of earlier English (OE, some ME dialects). Following, e.g., Kroch et al. (2000) and Pintzuk (1991), we take a straightforward implementation in this respect and translate the distinction structurally as movement to C vs. movement to T.

### 3.3 The Simplified Syntactic Account on a Diachronic Basis

We begin the argumentation with OE. Syntactically, we have to adjudicate between three major options to account for CI: (i) verb movement of the operator type (V-to-C); (ii) verb movement of the non-operator type (V-to-T); (iii) subject (non)movement. The options are not mutually exclusive (in particular, the reader will have noted that (ii) is a precondition for (i)). The research task, however, is to determine which process best describes CI and can at the same time reasonably account for its development.

Given the major syntactic possibilities, we claim that the main factor in maintaining inversion up to ModE is not a relict of verb movement, but a residual property in the syntax of low subjects from earlier English. In this respect, we capitalize on suggestions regarding the history of V2 made by Haeberli (2002) and others in different domains and propose (3) for CI.

A series of facts corroborate this view for comparatives. In OE, full DPs

can clearly appear inverted in comparatives, and thus in the structurally lower subject position. By “full DP” we mean DPs that are not pronouns (“specifier”-based possessive pronouns are, of course, not excluded; cf. (20)).

- (20) And heo wæs mare þonne martyr: for ðon þe mare wæs ða hyre  
 modes þrowung [þonne wære hyre lichoman]: gif heo gemartyrod  
 wære. (cocathom1,+ACHom\_I,\_9:254.174.1724)

While some examples might suggest that the weight of the subject enhanced inversion, by inspecting the full range of data, it becomes at the same time clear that not all of it is weight-conditioned, cf. the *swa*-clause in (21).

- (21) Þæt flod þa becom færlice ofer hi ealle, and eall mancynn adrencte,  
 buton eahta mannum, þe innan þam arce wæron, swa  
 [swa hym wissode God]  
 as him pointed out God (coaelhom,+AHom\_19:14.2672)

Considering pronouns, they productively appear in all CCS of OE only in what has been identified as the structurally higher position, as in (22). The configuration in (23) below is thus not attested in the OE data base.

- (22) And he þa leofode lange syððan, *halre* þonne **he** ær wæs, þurh þæs  
 Hælendes mihte. (coaelhom,+AHom\_6:105.935)  
 (23) \*? [THAN T SUBJ. PRONOUN (nominative)]

The OE situation serves as a rather clear clue. While additional factors may have played a role (pronouns being e.g. typically clitic elements), a strong line of recent research has shown a syntactic basis for the pronoun restriction in the case of OE (cf. 3.2). Since OE movement to C can thus be distinguished from movement to T, we observe that the evidence features no head movement to C in CI. While the rule clearly distinguishing movement this way is operative in OE, a strong tendency against inverting pronouns is interestingly continued in ME.<sup>3</sup> The preference against pronoun-based CI continues in EModE, where no examples were found in the data base. Instead all pronouns appear preceding the finite verb.

A further prediction relates to the syntax of OE pronouns more generally. It is known that, unlike Old High German, OE not only allowed subject pronouns, but also object pronouns to appear in the structurally high position. If the subject can remain *in situ* in CCS, we expect the subject and the pro-

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<sup>3</sup>There were five examples of CI in the ME data base; due to space limitations, I refer to Gergel (2007a) for discussion.

nominal object to surface in reversed positions from *First-Merge* relative to the finite verb. Relevant examples are given in the sentences in (24) through a (negated) equative and a (non-equative) comparative, respectively.

- (24) a. Nis us nan lim swa gewylde to gehwilcum weorce  
 [swa **us** syndon **ure fingras**] (coaelhom,+AHom\_4:158.606)  
 as us are our fingers
- b. Me wæs sio rod þinra synna **micle hefigra**  
 [þonne **me** wære **sio rod þe...**]  
 than me was the cross that ... (conicodD,Nic\_[D]:114.107)

An interesting further prediction starting out from the analysis of OE is that the sentences surfacing without an overt subject should be attested in comparatives. This prediction is borne out, in fact interestingly for Old, Middle, and Modern English (in some contexts); cf. the ME example (25).

- (25) For *trewer loue* was neuer bytwene two men [þen was bytwen þe kyng and Thomas], whyll hit last. (CMMIRK,39.1134)

#### 4 Figures

The frequencies of inverting tokens in the total numbers of CCS (cf. section 2) for OE, ME, and EModE from the corpus estimates are listed in (26). We give a more detailed view for the main Middle English periods in (27).

- (26) CI with the subject in CCS (Overview)

OE:	223/5148	=	4.33%
ME:	135/1684	=	8.01%
EModE:	31/2539	=	1.22%

- (27) Middle English: CI with the subject in CCS (M1-M4)

M1:	32/357	=	8.96%
M2:	12/180	=	6.66%
M3:	65/682	=	9.53%
M4:	23/388	=	5.92%

From the figures, two basic observations emerge. First, the highest rates of CI obtained during ME. Second, EModE preserves CI only at an extremely low rate.

While the estimates need to be taken with some caution for the reasons

exposed, there is indication that a simple, diachronically-preserving low subject-based approach fares better than syntactic alternatives, e.g. of the type that places weight on the developments of verb-movement (cf. next section). Let's focus on the ruptures between ME/EModE and between OE/ME, respectively. As is well known, the option of obligatory subject movement to Spec, TP (the "EPP feature") is a characteristic of Modern English. Thus it will come as no surprise to find that this is precisely the time at which the largest decrease is obtained in the rate of CI. The increase between OE and ME can be explained in terms of an inertia account of CI, as the one proposed here. Notice that OE shows about half of its subordinates to be T/Infl-final. In her comprehensive study, Pintzuk (1991:339) gives an estimate of 47% of Infl-medial clause structure in subordinate clauses. Since I do not have reliable data in sufficient numbers to build estimates of this particular sort for comparative clauses alone, I investigate the issue based on Pintzuk's estimates on this point. The observation that we have to add is that in a T/Infl-final CCS structure, inversion is in fact not visible. About half of the relevant structures and in particular also the potential structures that would have had inversion will then also not show it on the surface. Since I assume the structures to be uniformly distributed, this sets the rate of underlying inversion in OE to about double the size it overtly shows. At the same time, it is well known that Infl-final word order virtually disappears in ME, i.e. for the numbers featured in this period, what we see is what we get. Within present scope, this gives us an initial account of some interesting developments of CCS. The even more dramatic dip in the estimates following the ME period is straightforwardly explained by the erosion of the low-subject position towards ModE in general, as mentioned. We claim that the relict behavior is due to preserving the archaic possibility of a low subject under appropriate conditions. With respect to this conspicuous development, an interesting point arises. Since EModE also constitutes the time at which a number of other important changes occurred in the grammar of English, including the loss of verb movement in general, an interesting syntactic alternative might be available in this context, which is worth discussing in some detail next.

## 5 Why Verb Movement is not an Explanation for CI

As a counterfoil for how CI could have developed, let's consider the loss of verb movement and the rise of *do*-support (Kroch 1989, Roberts 1993, Warner 1997) as well as topicalization-triggered inversion (e.g. Kroch et al. 2000, Pintzuk 1991, Speyer 2005, Yang 2001). For instance, it is well known that verb movement is generally a receding option throughout the history of English (Kroch 1989, Warner 1997). If we attempt to speculate along the lines

thoroughly researched for verb movement in general, an option that immediately comes to mind is the one given in (28).

(28) Verb-movement relict scenario (*VMRS*):

CI in ModE is a relict of inversion in the following sense. Due to the loss of verb-movement, CI was (significantly) more frequent for  $x_i$  than for  $x_{i+1}$ , where  $x_{i+1}$  is an appropriate time interval and  $x_i$  is the relevant preceding time interval.

There is strong indication that the tempting option of linking CI to verb movement has to be refuted. First, note that, as far as the syntax goes, CI remains an optional process up to today. Optional verb movement, by contrast, is a possibility only arising during language change (cf., e.g., the well-documented variation possibilities of EModE). Moreover, in the well-studied cases (cf. in particular *do*-support; Kroch 1989), related effects of one and the same underlying grammatical process take place in much smaller time frames with the well-known Constant-Rate effect.

It is clear that the relevant time intervals mentioned in the VMRS cannot be conceived of too narrowly, mainly for practical reasons; the classical problem of historical data plus also the possible extra-syntactic motivation of CI. However, at least a trend would be expected to be discernible if the VMRS were to hold. This is not the case, as the data profile shows.

Since the numerical trend that would be needed for the VMRS is not given, one can loosen the scenario in a different way and check whether the oscillations that are observable do not have an independent explanation. In particular, let's consider an amendment along the lines of (29).

(29) Proviso to the VMRS:

Allow for possible inconsistencies to the VMRS as long as they are controlled for by the changes in the syntax of the pronouns.

For instance, after the early ME period, an additional option for CI that might have been expected could have resulted from the changing syntax of pronouns. Pronouns start inverting in ME in previously non-operator contexts as well (cf. Kroch et al. 2000 on crucial dialectal differences). If the "temporary" (if still prolonged) increase in the rate of CI were explained by these developments, there might have been a way to save the VMRS, in that inversion would generally have been a decreasing tendency, with the largest divergence hypothetically explained on independent grounds. Even with this fix, the VMRS is not supported, however. First, the largest increase in CI can be observed right from the beginning of the first period of ME, which is too early. Second, the (theoretical) option of inverting pronouns from M1 on is

in fact not taken advantage of by CI. No inverting pronouns were found for this ME period.<sup>4</sup>

Coming back to our main concern: From what we have seen so far, the problems for a V-to-C based version of VMRS seem insurmountable for OE, and the scenario would moreover face unexplained puzzles for ME.

Having shown that an “operatorized” version of verb-movement is implausible at best, let us now turn to V-to-T. First, previous research has shown that in the history of English V-to-T is a precondition for V-to-C. It is also the case that V-to-T as a mechanism is made use of independently in any account of CI to some extent. However, the argument here is that the loss of this process (with the exception of auxiliaries like *be* which we discuss below) fails as a diachronic explanation. In particular, we cannot confirm the implication stated as “Receding V-to-T => Receding CI rates.”

In fact, we can offer an interesting argument against it by investigating the situation of the copula. Quite naturally, a large ratio of CCS contains a finite copula. Consider the rates given in (30).

(30) Rates of CI in CCS with the copula (OE-EModE)

OE:	69/1289	=	5.35%
M1:	21/124	=	16.93%
M2:	6/58	=	10.34%
M3:	36/227	=	15.85%
M4:	15/112	=	13.39%
[ME tot.]:	80/539	=	14.84%
EModE:	18/656	=	2.74%

Two immediate observations: There is still a large increase after the OE period and a strong decrease from ME to EModE. Further, it is easy to show based on standard syntactic diagnostics that unlike most verbs, the copula has retained the property of moving to T up to modern grammars. But this is precisely the paradox. If movement to T were the culprit, we should not expect the decline from ME to EModE in a sub-study that contains an item that did not lose the displacement property. The syntactically originally perhaps appealing VMRS is an unlikely scenario at best in explaining CI and its history (see Gergel 2007a for arguments against another alternative).

To conclude: the diachronic reasoning has offered a window into the nature of CI. Instead of being a relict of verb movement, the possibility of CI is

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<sup>4</sup>The examples in the later periods of ME in fact do not lend sufficient support to a productive process of CI involving pronouns either (see section 2.3).

rather an archaic feature of the language allowing it to keep a subject in the low position.

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