

Comparative Inversion: A Diachronic Study

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Abstract By capitalizing on insight gained from the syntax of early English, comparative inversion reveals itself as a simpler process than is standardly assumed, viz. simpler than moving the finite verbal element to the C(omp)-domain in conjunction with subject movement to Spec,TP. An archaic option in the grammar allows the subject to stay in a lower position than the canonically assumed specifier of the inflectional domain and no head movement to C is invoked. The proposal complements recent findings regarding the diachrony of V2 in English together with its distinct derivation from classical V2 in Germanic. Together with the core analysis of inversion in comparatives, the article illustrates further areas in which beneficial consequences for comparatives are derived from the structure proposed, such as the persistence of certain subjectless comparative structures.

Keywords: *Comparative Clauses, In-Situ Subjects, Middle English, Old English, Subject-Auxiliary Inversion, V2*

1 Introduction

Comparative inversion (CI) is the phenomenon found in sentences such as (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 present-day English (PDE); cf. Quirk et al. (1985), Huddleston and Pullum (2002), among others. Some speakers find it in many cases to be a restricted possibility. The non-inverted counterparts are thus (unsurprisingly) grammatical in the general case; cf. (1a') and (1b').¹

- (1) a'. They were far more supportive than the faculty is.

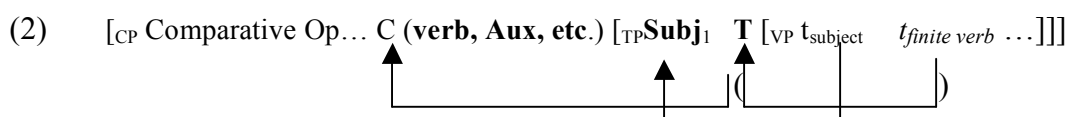
- b'. Parthenolide is more selective than the standard drug was.

The term “inversion” on standard accounts stands for movement of an auxiliary element - I(nfl), or T in more recent notation - across the subject and towards the complementizer head C. In this paper, I adopt the term “inversion” to refer to such sentences and to the non-canonical surface word order in which a finite element precedes the subject. Since it will be argued that there is no syntactic need of moving a head overtly to C, the terminology is simply descriptive. Moreover, I and T are identified here (cf. Gergel 2005 for some arguments). I take the reductionist phrase-structural step as a matter of simplicity; the results can, of

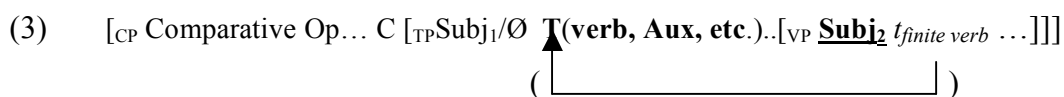
¹ Acceptability varies across speakers and registers. In particular heavy subjects may sometimes be judged more natural in an inverted surface word order.

course, be reformulated within more articulated versions of Split-Infl (Pollock 1989).

I investigate the diachronic development of CI and argue that this ultimately comparative perspective is insightful in detecting the mechanics of CI. This constitutes exactly the scope of this research. To begin, the traditional syntactic analysis for CI based on operator movement (cf., e.g., Quirk et al. 1985; Merchant 2003) is schematized in (2).



The alternative proposal, which is to be argued for here, is schematically shown in (3).



The movement from V-to-T is shared by the two proposals and it hinges on general movement properties of a particular stage of the language (Roberts 1993) and on various types of synchronic variation. For example, the copula can target T chronologically up to (and including) PDE (Emonds 1976). However, beyond the (independent) V-to-T step in the derivation, there are significant differences: The movement of the auxiliary to C is only featured by the standard proposal, as is the obligatory appearance of the subject in Spec,TP. On the present proposal, neither of the two displacement operations is involved. The suggestion has the particular advantage of relating various stages of the language coherently. In addition, it ties in with recent observations on the diachrony of V2 effects in English, which argue that the latter show certain crucial differences from other Germanic languages (see Fischer et al. 2000; Haeberli 2002; Kroch 2007; Speyer forth.). Simplifying, apparent V2 effects in various grammars of English are the result of the verb moving to the inflectional domain and the subject staying in a lower position.

The paper has the following structure. After a discussion of the database and some general issues in section 2, in section 3 I develop the proposal and outline the relevant issues in the representation of comparatives in the context of language

change. Section 4 defends the diachronic proposal against two main potential alternative scenarios. Section 5 concludes.

2 Database

2.1 Main Sources

The major sources for this study were the *The York-Toronto-Helsinki Parsed Corpus of Old English Prose* (Taylor/Warner/Pintzuk/Beths 2003), *The Penn-Helsinki Parsed Corpus of Middle English* (Kroch and Taylor 2000a), and *The Penn-Helsinki Parsed Corpus of Early Modern English* (Kroch/Santorini/Delfs 2004). These corpora have three features essential for current purposes. They provide extensive sources of diachronic data, are syntactically detailed and largely consistent in annotation. The examples from these sources are given by their standard corpus identifications; examples from further sources are mentioned as such. Sub-corpora are given by the traditional Helsinki-Penn delineations. They are interesting in particular for Middle English (ME). The relevant segments for this period are listed in (4).²

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

2.2 Token Selection

Comparative structures from the corpora were the natural target of data extraction. There are three main issues that came up in the work. First, equatives have been included here, in line both with the corpus annotations and with standard theories of comparison (cf., e.g., von Stechow 1984). Second, in order to capture the development of CI, a surface effect at a sentential level, attention was restricted to clausal comparative structures (CCS). These include a minimum of a finite verbal element (i.e. an auxiliary or full verb) and an overt subject. I remain agnostic about theoretical implications in this respect: a comparative that is non-clausal on the surface may or may not be clausal in its underlying grammatical

representation and LF (see Bhatt and Takahashi 2007; Hankamer 1973; Lechner 2004). The minimal requirement is a necessary choice if one is interested in the output of inversion historically.

Data that do not fulfil this requirement are also discussed where they become relevant for their grammatical significance, but they are not included in the counts. Third, a data portion coded in a similar fashion contains *swa*-clauses in Old English (OE), cf. (5) and (6). In general, *swa*-clauses can be equatives, but moreover they can introduce relations that do not necessarily compare degrees in a strict scalar sense, cf. e.g., manner clauses.³ Further, as is well known from the tradition on historical English (cf. Mitchell 1985), there are some cases in which the two nuances cannot be distinguished (the contexts often allowing two readings).

- (5) Sume sindon ungesewenlice gastas butan lichoman swa
some are invisible spirits without bodies such
[swa synd ænglas on heofonum]
as are angels in heaven
(coeliveÆLS_[Christmas]:53.40)

- (6) And he wæs fram him alocen swa mycel [swa is anes stanes wyrp]
and he was from them withdrawn as much as is a stone's throw
(cowsgosp,Lk_[WSCp]:22.41.5478)

While some *swa*-based CCS (cf. (6)) feature a word like *mycel* ‘much’, which may suggest a quantity-based comparison, this is not always the case. The CCS from the corpora are thus a superset of what qualifies as traditional comparisons, but they share the annotation and also show a similar syntactic behavior which offers the prospect of a broader generalization.

² For practical reasons, I will treat the other periods without subdivisions regarding the problem of comparatives.

³ A reviewer notes that for the gapped predicates in (5) and (6) a predicate-raising analysis (Moro 1997) makes the examples pattern with regular comparatives. Such a configuration would be on a par with other elements found in the high subject position in conjunction with a thematic subject in-situ (e.g., oblique pronouns; see 3.3).

3 Comparatives in the Context of Language Change

The section claims that the representation of CI involves low subjects and historical continuity in various respects, in particular in the way apparent inversion is achieved without T-to-C.

3.1 Lack of (overt) subjects in Spec,TP and lack of T-to-C

The current proposal is simply stated. An overt subject in CI is spelled out lower than the standard Spec,TP position (or the higher of the two subject positions in alternative richer phrase-structures). Adapting to comparatives –and simplifying for current purposes– a proposal of Haeberli (2002), I thus suggest the schematic structure in (7), repeated from (3).

(7) *Comparative*: [_{CP}Comp Op [_{TP}Subj_i/Ø T[fin.verb/Aux/etc] [_{VP}**Subj₂** *t_{finite verb}*]]]

The structure in (7) is built along the standard V-T-C extended spine. While comparatives have CP representations (Chomsky 1977; Heim 2006), when the finite element linearizes non-canonically relative to the subject, it does not do so due to movement to C in conjunction with subject movement to Spec,TP. Instead the finite element is under T and the subject is under Spec,VP.

First-hand support for the proposal comes from the mentioned CP nature of the comparative, which is, however, not only necessary at the syntax-semantics interface, but also has a direct consequence for inversion. An argument prompted by a reviewer derives the incompatibility of the visible CP nature of a comparative with T-to-C displacement as follows, drawing on Goldsmith (1981).⁴ Developing Emonds' (1970) work on root transformations, Goldsmith proposed, on the basis of cross-linguistic evidence (including English cases of subject-Aux inversion), that an overt C element rules out T-to-C. Goldsmith subsumed his proposal under the *No-Complementizer Condition* (NCC) rendered in (8) below.

⁴ See also especially den Besten (1977/1989) for a proposal along such lines and van Riemsdijk (1998) for thorough discussion and restriction of some of the pertinent theoretical options.

- (8) A transformation T may not apply to a sentence S_1 if S_1 is headed by a complementizer. (Goldsmith 1981: 542)

What the NCC given in (8) effectively means is that movement to C does not apply if the sentence in question is headed by a visible complementizer. Assuming with Bresnan (1973) that the relevant *than* and *as* are complementizers (this is given since the data are clausal structures; see 2.2 above on the design of this study), the incompatibility of T-to-C movement with a comparative clause follows on the basis of the NCC.⁵ The head T cannot move to C in CI because of the presence of *than* or *as*.

A second point lends itself to consideration if we adopt Culicover and Winkler's (2008) insight that the subject in comparative inversion is contrastively focused. Let me illustrate how a component of that account together with the fact that T does not move to C makes a good prediction about the syntax of CI. Simplifying the information-structural account for current purposes, one venue to entertain is that the subject in CI is isolated at the right edge of a phonological phrase. Now, if the subject were in the standard Spec,TP position, then this syntax-information structural requirement might seem to be fulfilled if T moved to C (that is the option moving past the subject after eliding the predicate phrase; see Merchant 2003, among others). However, there is a problem with such a canonical derivation. The T-head cannot move to C in CI, as we show diachronically. But a (necessarily) non-moved T, then, could also not impose contrastive focus on the subject through syntactic isolation at the right edge; that is, if the subject concomitantly moved to Spec,TP, bypassing T. What does yield a correct derivation under the contrast condition instead is taking advantage of the option of leaving the subject in a position lower than the standard T/Infl. This complies both with the necessity of having the finite element in T (see NCC) and the syntactic isolation of the subject for contrast in CI.⁶

⁵ The Spanish or French comparative complementizer is *que* (both 'that' and 'than'), as the reviewer contributing the main point of this argument mentions. While *than* can precede *wh*-words including in varieties of English (see Chomsky 1977), the item treated here is best treated as a complementizer. Concentrating on Dutch but pursuing a more general analysis, den Besten (1978) argues for a free-relative (and hence orthogonal) analysis of examples which involve variants of 'than' and overt *wh*-words (see Hankamer's *than*+NP, i.e. the "phrasal" variant).

⁶The reasoning I give on this point may raise several questions, but it also further yields two additional results. For one, it appears natural that the interplay of the NCC and the

A third argument comes from the availability of subjectless comparatives at all stages of the language. There are two parts to this argument. First, an empirical part – the fact that such structures existed (and restrictedly still exist). The second, more technical part addresses null-expletives (cf. Haeberli 2002). I address the two issues next, by beginning with the empirical illustration.

The sentences in (9)-(12) below provide direct evidence for the possibility of a lack of an overt subject in finite clauses in OE, ME, EModE and PDE.⁷

- (9) þæt hi mare drincon þonne him framige.
that they more drink than them benefits
 ‘that they drink more than benefits them.’
 (cochdrul,ChrodR_1:60.32.817)
- (10) For trewer loue was neuer bytwene two men [þen _was bytwen þe kyng
 and Thomas]
 ‘For truer love was never between two men than was between the king and
 Thomas.’
 (CMMIRK,39.1134)
- (11) he left soch a companie of fellowes and scholers in S. Iohnes Colledge,
 [as _ can scarce be found now in some whole vniuersitie]
 (ASCH-E1-H,55R.164)

contrast condition, which hinge on the archaic grammatical CI option, comes at the cost of sounding like “very ‘literate’ speech” (Emonds 1976:23). Second, examples that do not contrastively isolate the subject are degraded, cf. (i), originally from Emonds (1970/1976), as well as (ii), provided by a reviewer.

- (i) a. ?Bill seems smarter in math than does Harry in science. (Emonds 1970)
 b. ?The Chinese are as ready to fight as are the Japanese to talk. (*idem.*)
 (ii) *John gave more money than did Mary to Sam.

Most examples I discuss elide the predicate phrase. As Lechner (2004) argues, the most parsimonious approach is the one in which ellipses in comparatives are derived from the mechanisms that yield ellipsis in general.

⁷ Some speakers prefer the null expletive and find the overt expletive to be overcorrection or to “sound like a foreigner.” The result is confirmed through the descriptive work on English. Quirk et al. (1972:769; 1985:1131) give (i). Quirk et al. (1985) state that the subject is omitted; Quirk et al. (1972) maintain that *it* is “removed”.

- (i) You spent more money than was intended.

- (12) a. [T]he negotiating process is far more complex **than _ is** often assumed.
(*Refugee Survey Quarterly*, Vol. 18, No. 3, 1999, p. 43)
- b. "What this reflects is the fact that our entire industry is able to move in a much more quick and sophisticated way today **than _ was** the case two years ago," Smith said, referring to the damage wrought in August 2003 by the "Blaster" worm. (*Washingtonpost*, 08/26/05)

The OE example in (9) features a dative pronoun but no syntactic nominative subject. The ME example in (10) is a late attestation of a null-expletive existential (see Williams 2000). Some further examples are given for PDE next. Null subjects are not only found with the copula. They can be observed with unaccusatives, (13a,b), but are not restricted to them, (13c).

- (13) a. By arranging to protect and feed the young of shellfish, for example, the commercial breeder can cut the normally high mortality rate quite dramatically and raise more juveniles to become adults **than _ could ever occur** in nature.
(BNC: Practical Fishkeeping)
- b. The overwhelming dominance of the urban areas in particular, the metropolitan regions around Tokyo, Osaka and Nagoya in most areas of national life is having a far more devastating effect on village life **than _ might stem** just from better employment opportunities.
(BNC: The emergence of modern Japan. Hunter, J, Longman, New York 1992)
- c. Far more people have been helped **than _ have committed violent crimes** against themselves or others. (web-based; context: discussion in support of medication.)

A related note can be made for certain counterfactual comparatives, such as (14). Here, the absence of the subject, to be identified as the DP *people*, is the rule rather than the exception.⁸

⁸ The claim is not that a null subject is necessary. A reviewer remarks that an example such as (i) becomes legitimate with the suitable intonation. While morphosyntactic

(14) The crisis was averted, and fewer people died **than _ might have** (died).

What is the significance of examples such as (9)-(14)? They show that comparative clauses can lack a subject throughout the history of English. This is of interest since the current proposal involves precisely an empty subject in the standard subject position (Spec,TP in (7)). A priori, the structurally higher subject of comparative *inversion* may - or may not - be empty. This depends on whether the present (or the standard) analysis is appropriate. But a derivation without any subject whatsoever proves independently that the possibility of having no subject in the high position has always been provided by the grammar of comparatives. A key ingredient of the proposal (no subject in the critical high position) is thus unambiguously *shown* by the examples that lack a subject. I propose that this possibility involves a null expletive. Null expletives have been argued for in various contexts in the history of English (see, e.g., van Kemenade (1997) and Haeberli (2002) ⁹). They are instantiated as an archaic option in comparatives. Assuming them in CI and subjectless comparatives is motivated since such structures exist in present grammars, where *some* subject is theoretically required by the EPP feature. To summarize, comparatives can restrictedly license a subject without a PF representation. On simple assumptions, this is shorthand for a structural placeholder, i.e. a null expletive.

A fourth argument against the standard analysis that requires T-to-C obtains from observing sequences of auxiliaries (Huddleston and Pullum 2002; Potts 2002, among others); cf., e.g., (15), suggested by a reviewer, or (16), from the Cambridge Grammar of the English Language.

- (15) a. in more sophisticated ways today [than might have been the case two years ago]
b. *in more sophisticated ways today [than might the case have been two years ago]

matching properties in ellipsis are required (cf. Sauerland 2004), with the semantic contrast given, this type of comparative *non*-ellipsis can obtain as well.

- (i) #Fewer soldiers died than civilians might have (died).

- (16) It is no more expensive [than would be the system you are proposing].
(Huddleston and Pullum 2002)

The finite auxiliary in (15) and (16) is in T and intermediate auxiliaries are first-merged between VP and TP; the subject is at the edge of the phrase headed by the main predicate.¹⁰

A fifth supporting argument for (7), compared to the standard proposal, lies in the parsimony of its derivation. A computationally cheaper derivation is to be preferred. A representation that involves two additional displacements in order to achieve the same result is inferior to the one in which surface and underlying form diverge less if there is no evidence to support the movements. Both the standard analysis and the other alternatives touched upon involve a minimum of two additional displacements for CI, for which I could find no consistent evidence anywhere in the history of English.

Sixth, a rather strong theoretical argument that favors the current analysis over the one that involves T-to-C can be gained from the optional character of CI. The argument is that optionality is at odds with the nature of verb movement (see Emonds 1970 and Kroch 1989, among others). Structures that clearly require overt T-to-C, such as root non-subject questions in English, also invariably have the requirement fulfilled. The only leeway for optionality in verb movement may be found in periods in which a particular phenomenon is developing (cf. also section 4 for discussion), but with CI available from the oldest attested texts, it is implausible to claim that the dynamics of a putative grammatical change (that

⁹ Under minimalism, a null expletive (without meaning or a PF reflex) may not be straightforward. In the current discussion, a null expletive is equivalent to a structural position (Spec,TP) that is not filled overtly at PF.

¹⁰ Aspectual projections (*have* and *be*) are equivalent to tenses (e.g. Demirdache and Uribe-Etxebarria 2000; Gergel 2005). A reviewer convinced me that a complication I introduced in a previous version is not needed for multiple auxiliaries, which are the core case. The complication allowed short verb-movement (Johnson 1991) to re-linearize the subject and the last verbal element. If auxiliaries are first-merged above VP, this is unnecessary and everything can be in-situ. However, though rare, I have found late ModE examples, such as (i) and (ii), in which the clusters involve a lexical verb. To account for them, I assume that short head movement remains an option.

(i) No people who have enjoyed no greater opportunity for improvement, could possibly have made greater progress [...] than have done the colored people of the present day. (*The Condition, Elevation, Emigration, and Destiny of the Colored People of the United States*. Delany, Martin Robison, 1812-1885)

would have to extend over far more than a millennium) are causing the optionality of what would be a presumed T-to-C derivation.

3.2 Main numerical developments in the history of CI

The frequencies of inverting tokens in the total numbers of CCS (cf. section 2) for OE, ME, and EModE from the corpus estimates I have obtained are listed in (17). It is possible to give a more detailed view for the main Middle English periods, which is done in (18).

(17) Inversion of the finite verb/auxiliary with the subject in CCS (Overview)

OE:	223/5114=	4.36%
ME:	135/1639=	8.23%
EModE:	31/2497 =	1.24%

(18) Middle English:

Ratios of inversion of the finite verb/auxiliary with the subject in CCS:

M1:	32/344=	9.30%
M2:	12/178=	6.74%
M3:	65/655=	9.92%
M4:	23/385=	5.97%

Two immediate observations emerge from the figures. First, the apparent highest rate of CI obtained during ME. Second, EModE preserves CI only at a low rate. The estimates given need to be taken with caution in view of the text-sensitivity of the phenomenon and its sensitivity to fickle aspects of information structure. Nonetheless, a simple approach that is diachronically stable fares better than alternatives which place weight on the changes of verb-movement, as discussed in

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- (ii) No tyrant of those days better knew how to use the forms of popular government in order to establish a real despotism than have known the men who have turned our election into

more detail below (cf. section 4). I focus on the clearest frequency shifts indicated by the estimates: the ruptures between ME/EModE and between OE/ME, respectively. The option of obligatory subject movement to Spec,TP (the EPP feature) is a characteristic of Modern English. On the present view of CI, it is natural to find that the beginning of this period is also the time at which the largest decrease is obtained in the rate of CI. The increase between OE and ME can equally be explained in terms of an inertia account of CI, as the one proposed here. What has to be taken into account in this case are the independent developments and the rates to which they interact with CI. I next illustrate how.

OE shows about half of its subordinates to be T/Infl-final. In her comprehensive study for OE, Pintzuk (1991:339) gives an estimate of 47% of Infl-medial clause structure in subordinate clauses.¹¹ Since I have no reliable data in sufficient numbers to build estimates of this particular sort for comparative clauses alone, I investigate this issue in preliminary fashion based on Pintzuk's estimates on this point.¹² The observation that can be combined with this particular borrowed estimate is that inversion is not visible in a T/Infl-final CCS structure. This suggests that roughly half of the relevant structures and in particular also the potential structures that would have had inversion will not show it on the surface. Since I assume the structures to be uniformly distributed once the sample is large enough, this sets the rate of underlying inversion in OE to about double the size the figures overtly show. At the same time, it is well known

screaming farces. (*NY Times*, October 13, 1890)

¹¹ Comparatives are here subordinates or, equivalently, coordinates under structurally asymmetric coordination.

¹² One could try to control for independent displacement properties by selecting only items that contain both finite and non-finite elements (such that the non-finite element will not have undergone movement to T). But the evidence obtainable in this domain for comparatives alone is scarce. Alternatively, one could try to test whether a root (e.g. in the sense of distributed morphology) consisting of an adjective in conjunction with a finite verb (e.g., a form of *be*) is not just as good as a finite verb in conjunction with a participle. One could thus arguably generate more tokens, but numerous additional issues arise. Further, since Pintzuk's detailed work also gives estimates for the Infl/T-headedness of *be*, one might counter-argue that considering the estimates for *be* would be more reliable than the pool of subordinate tokens. Caution, however, is in order. As Pintzuk shows, there is significant variance within the headedness estimates for *be* even with verbal complements of various sorts (e.g., the rates for past and present participle are not identical under the scope of *be*). I chose the largest relevant estimates from Pintzuk's work instead of creating specific but also instable ones on this point.

that T-final word order virtually disappears by ME,¹³ i.e. for the CI numbers featured in this period, what we see is what we get. Within present scope, this gives us a preliminary account of some interesting developments of CCS. The dramatic fall in the numerical estimates following the ME period is further straightforwardly explained by the erosion of the low-subject position towards ModE, as mentioned. None of the developments is as simply explained on the standard account, which claims movement to C. There is for one no change in the directionality of C, nor could I find a natural explanation for the decrease towards ModE. This lends rather strong additional evidence to the current proposal.

3.3 Strengthening the Historical Evidence: The Pronoun Restriction at Work in OE

This section capitalizes on a connection between pronouns and V2 in the history of English (e.g., Fischer et al. 2000; Haeberli 2000; Pinzuk 1991; Kroch 2007). After introducing a background assumption, I discuss the options for V2 and the result obtained for comparatives.

I assume that predecessor grammars are mapped to their successor grammars restrictively (if not perfectly; see Kroch 2001; Kroch et al. 2000; Roberts 2007). This is the inertia assumption of historical syntax. Even though it may seem trivial outside historical linguistics, it is not quite so in the field. Languages change with respect to clearly visible syntactic options but also to many micro-parameters, which in all likelihood are overlooked unless they give rise to more conspicuous changes (see Roberts 2007).¹⁴

I now turn to verb movement in OE by using a crucial test provided by subject pronouns. As recent research has revealed (see, e.g., Fischer et al. 2000, van Kemenade 1987, Kroch et al. 2000, and Pintzuk 1991 among others), OE (and

¹³ Two possibilities are available for cases of what appears to be residual Infl-final word order in early ME (see Kroch and Taylor 2000b). It is either (i) a process with an extremely low productivity compared to the almost fully dominating Infl-initial order by M1 already; or (ii) one which is an imitation of old texts in the written tradition.

¹⁴ The counterpart of inertia would be constant change (see, e.g., Labov 2001; Thomason 2008 for discussions). I further assume grammars to be parametric and modular. This also means that persistence and alteration in regard to different syntactic processes not only co-exist, but they can be observed next to each other as they interact. I will illustrate this idea at work with CI and changes that directly interact with it in section 4.

early ME) show at least two types of verb movement. One is the so-called operator movement, in which certain contexts trigger inversion of the finite verb to C, a well-known effect across Germanic. A non-exhaustive selection of the contexts is given in (19a-c) below (cited after Kroch et al. 2000):

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

Thus in cases involving *wh*-questions, lexical operators such as *þa* and a few other adverbs, or the negation particle *ne*, as above, the verb moves to C.¹⁵ This movement is uncontroversial movement to a high position. Crucially the examples in (19) show that it can also occur in contexts with pronouns (just as it can interact with full DPs, which are not shown here).

However, when it comes to topicalization, an important syntactic difference can be observed in OE in the way it affects full DPs and pronouns. Consider (20) vs. (21) (both cited after Kroch et al. 2000). In this non-operator context, the verb never moves higher than subject pronouns.

- (20) Topicalization with full-fledged DPs:
- a. & of heom twam is eall manncynn cumen
and of them two is all mankind come
 (WHom 6.52)
- b. þæt hus hæfdon Romane to dæm anum tacne geworht
that building had Romans with the one feature constructed
 (Or 59.3)

- c. þær wearþ se cyning Bagsecg ofslægen
there was the king Bagsecg slain
 (Anglo-Saxon Chron., Parker, 871)

(21) Topicalization with subject pronouns:

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

The operator/non-operator distinction was part and parcel of the syntax of OE. Following Kroch et al. (2000) and Pintzuk (1991), a straightforward implementation of the observed differences, which I adopt here, is movement targeting C vs. the Infl-domain, respectively. Given the distinction, I capitalize on the resulting diagnostic: An operator context will move the finite verbal element to C and will invert pronouns. If comparatives pattern with questions, in that the finite verb can appear to the left of subject pronouns, as in (19), then they involve movement to C. If comparatives pattern with topicalization, i.e. if the verb invariably surfaces to the right of pronouns, as in (21), they involve movement to T.

First, OE full DPs can appear inverted in comparatives, as shown in (22).¹⁶

¹⁵ The negative *ne* has head properties in conjunction with operator movement at least in classical OE; cf. Fischer et al (2000: Chapter 9) for a suggestion for different syntactic patterns of negation during early OE

¹⁶ By the informal “full DP” I mean DPs that are not (headed by) pronouns. E.g., “specifier” possessive pronouns are not relevant to the point and not excluded. Such an example is (i).

(i) for ðon þe mare wæs ða hyre modes þrowung þonne wære hyre lichoman
therefore greater was then her minds's suffering than were her body's
 (cocathom1, ÆCHom_I_9:254.174.1724)

- (22) hwæt is atelicor geðuht on menniscum gecynde þonne is ðæs hreoflian
lic...?
what is more-horrible seemed in human nature than is the leper's body
'What appears as more horrible in human nature than does the leprous
body?'
(cocathom1, ÆCHom_I, 23:370.157.4656)

Examples such as (22) furthermore suggest that the weight of the subject DP enhanced the possibility of inversion. By looking at the full range of related data, not all apparently inverting examples seem to be weight-conditioned though; cf. e.g., the *swa*-clause in (23).¹⁷

- (23) Þæt flod þa becom færlice ofer hi ealle, and eall mancynn adrencte, buton
that flood then came suddenly over them all and all mankind drowned but
eahta mannum, þe innan þam arce wæron, swa [swa hym wissode God]
eight persons who in the arc were such as him told God
(coaelhom, ÆHom_19:14.2672)

Returning to the more crucial issue, pronoun DPs appear in all CCS of OE preceding the verb:

- (24) ... for ðan þe se Fæder is mare þonne **ic sy**.
therefore the father is greater than I am
(coaelhom, ÆHom_10:19.1417)

- (25) And he þa leofode lange syððan, *halre* þonne **he ær wæs**, þurh þæs
Hælendes mihte.
and he then lived long after holier than he before was through the
Lord's might
(coaelhom, ÆHom_6:105.935)

¹⁷ Weight is used in diachronic studies (on not unreasonable empirical grounds) to mean, e.g., more than 3 words. Under this assumption, weight is not a precondition for CI. Moreover, material as the above shows that other concepts of weight (e.g., syllable- or foot-based) may not yield hard-and-fast rules by themselves either.

An additional note is in order concerning the finite element: (24) or (25) could potentially involve more than one position of the verb under a double-base hypothesis. But there is an important restriction. While the examples do not give clear clues as to Infl/T-headedness, they illustrate that on the basis of the independently established diachronic diagnostic between movement targeting the Infl-domain and C, the finite verb is under T and not under C (see, in particular, Pintzuk 1991, Fischer et al. 2000, Kroch et al. 2000, Biberauer et al. 2008 for discussion on the headedness issue of T). The configuration in (26) below is notably not attested in the OE database. The finite element in CI can hence not involve T-to-C.

(26) *[THAN/AS FINITE VERB SUBJ. PRONOUN (nominative)]

With the background of the OE situation, the question arises whether the pronoun restriction continued in ME, or whether the previously non-operator context of comparatives changed towards generalized movement to C (i.e. classical V2). There is no strong evidence for CI being a productive process with pronouns in ME. The majority of the examples are like (27).

- (27) a. and to þees men wol I answee as febely [as I kan], ...
and to these men will I answer as feebly as I can
 (CMCLOUD,126.727)
- b. if he wold be more gentil onto hem [þan he was before], he schuld be welkom.
if he would be more gentle to them than he was before he should be welcome
 (CMCAPCHR,96.1969)

While the bulk of the pronoun data in ME involves no inversion, as (27), there were a total of five exceptions in the database. The examples in (28) exhaustively illustrate the three types.

- (28) a. And moore shame do they to Crist, [than dide they that hym crucifiede]

(CMCTPARS,309.C1.891)

- b. for þer nys non euel þat goþe so nygh þe deþe wyth scapyng
[as doþe hit]

*for there NEG-is no hook that goes so nigh the death with escaping
as does it*

‘For there is no torture that approaches death so closely to then have
one recover as does this one.’

(CMMIRK, 58.1608)

- c. for sche weryd white clothyng mor þan oþer dedyn which wer
holiar & bettyr [þan euyr was sche] as hym thowt.

*for she wore white clothes more than others did who were
holier & better than ever was she as him thought*

(CMKEMPE,84.1898)

(28a) involves a (heavy) DP with a relative. The example (28b) is the only one of this type that I found in the ME database. (Further, from my preliminary investigation, I could not find features of the original text containing the example that would so much set it apart as to allow the pronoun *it* in inverting comparatives. All other examples of CCS from this text are inconclusive). Example (28c) seems to involve a notion of total contrast to the exclusion of temporally invoked alternatives due to the adverb *ever*. The latter example (and another one of the same type in the same source) features a special syntactic ability of the adverb *ever*.¹⁸

The preference against pronoun-based CI continues in EModE, where no such examples were found in the database. Instead all pronouns surface canonically non-inverted, as in (29).

- (29) breeding for the most part one questio~ as fast as it solueth another
(BACON-E2-H,1,20V.56)

¹⁸ Outside of the database, I found three examples of pronouns inverting in Chaucer that would qualify as CCS. They were verse-final. Clearly, the expectation is that they are focused (see Gergel et al. 2007), cf. (i).

(i) That sal be my desport. / For, Iohn, in faith I may been of youre sort, / I is as ille a millere as ar ye.

A further series of predictions relate to the syntax of pronouns more generally. Unlike Old High German, OE not only allowed subject, but also object pronouns to appear in the structurally high position, as is well-known. If the subject is in the low position with full-DP subjects, the subject and the pronominal object are expected to surface in reversed position relative to the finite verb. Examples of this sort are in fact frequent and illustrated in the sentences in (30) with a (negated) equative and a (non-equative) comparative, respectively.

- (30) a. Nis us nan lim swa gewylde to gehwilcum weorce
NEG-is us no limb as useful to any work
 [swa **us** syndon **ure fingras**]
as us are our fingers
 ‘We have no limb so useful to any work as our fingers.’
 (coaelhom,+AHom_4:158.606)
- b. Me wæs sio rod þinra synna micele hefigra [þonne **me** wære **sio rod**
 þe ...]
me was the cross of-your sins much heavier than me was the cross
that...
 ‘The cross of your sins was much heavier on me than was the cross
 that...’
 (conicodD,Nic_[D]:114.107)

(30b) also contains a heavy DP with a relative clause. Finally, a way-out for a heavy DP *not* to invert was as in (31), which, for concreteness, I assume here (speculatively) to involve partial Spell-Out, following Bobaljik (2002) for partial Spell-Out in other movement processes.¹⁹

- (31) Micele mare wundor is þæt he wolde beon mann on þisum life, and alysan
much greater wonder is that he would be man in this life and redeem
 us þurh hine, þonne **þa wundra** wæron **þe he worhte betwux mannum**
us through himself than the wonders were that he did amongst humans
 (coaelhom,+AHom_2:98.297)

¹⁹ For some discussions of extraposition see Fox and Nissenbaum (1999), Göbbel (2007), and Lechner (2004).

To sum up: this section claimed that there is a syntactic well-motivated basis in earlier English for the subject in CI constructions to be situated in a low position and the verb below C. Such a basis is motivated by the pronoun restriction in the Spec,TP position in comparative structures. This strengthens the argumentation offered in sections 3.1 and 3.2 above.

3.4 The Syntax-Semantics Representation of Comparatives in Earlier English

This section controls for one more aspect in the continuity of comparative constructions, viz. from the vantage point of potential variation at the syntax-semantics interface.

While cross-linguistic variation in degree constructions has long been noted (cf. Stassen 1985 following the tradition of the Stanford project on language universals), I follow here more recent parametric approaches (see Beck et al. 2008 and references) which make specific predictions about the precise underlying representations in syntax and semantics. For concreteness, a specific degree parameter suggested by Beck et al. (2004) is given in (32):

- (32) A language {does/does not} have binding of degree variables in the syntax.

Under a negative setting of (32), several structures would be precluded. This is borne out for example in Japanese. Subcomparatives, degree questions, and other constructions involve abstraction over variables of degree. But subcomparatives are not possible in Japanese, a paraphrase is needed to form a degree question, measure phrases are not available etc. Even though variation in comparatives is possible even within related languages, early English had a positive setting for the degree abstraction parameter. Some main tests are in (33)-(36).

- (33) þæt hit mihte beon **þreora mila brad** ...
that it might be three miles broad
(coorosiu,Or_1:1.15.26.272)

(34) mare wyrshipfulle... [than euer was the synne of Adam harmfulle]
more worshipful... than ever was the sin of Adam harmful
(CMJULNOR,61.311)

(35) **Hu feor** wolde ge nu ryman eower land?
how far want you now enlarge your land
(cocura,CP:44.329.25.2229)

(36) ...þæt hy ne synd **to scorte**
that they NEG are too short
(cobenrul,BenR:55.89.17.994)

The OE example in (33) illustrates a measure phrase and (34) a subcomparative structure. Degree questions are diachronically equally available, cf. (35), and so are intensional scale-based constructions such as result clauses (e.g. *too* constructions), illustrated in (36).

Overall, then, earlier English had a similar representation of degrees as PDE. A direct consequence is that, though an important source of variation in general, a changing setting of a parameter at the semantics interface cannot be invoked for the syntax of CCS and CI.

4 Two Alternative Scenarios for the Diachrony of CI (and their Problems)

In section 3, I argued that a non-moved T and a low subject yield a *derivation* for CI that is superior to the standard analysis. This section gives further arguments that the approach also gives a *developmental* explanation that is more plausible than diachronic alternatives which directly relate CI to the loss of verb movement or to an innovation scenario.

4.1 The Verb-Movement Relic Scenario

Given that verb movement is involved in any derivation of CI, a first idea is that the receding incidence of CI might be related to the receding development of verb movement; cf. (37).²⁰

(37) **Verb-movement relic scenario (VMRS)**

CIs in ModE are a relic 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 the relevant preceding time interval.

But the option of linking CI to verb movement must be refuted. First, CI remains an optional process up to the present. Optional verb movement, by contrast, is a possibility arising during language change; cf. the possibilities of EModE. For example, *do*-support and verb movement could alternate in questions or interrogatives even with one and the same speaker, as is known, e.g., from the Shakespearean record. Moreover, in the well-documented cases and in particular *do*-support, related effects of one underlying grammatical process take place in much smaller time frames and with the constant-rate effect. Informally, the constant-rate effect says that if different changes are caused by the same underlying grammatical factor, their frequencies will show the same rate of change (Kroch 1989). A development along the lines of the S-shaped curve of change would be expected. For example, periphrastic *do* spreads over the contexts of insertion in such a manner. No such dynamic effect is given for CI, however, which was available from OE on with a clear rupture at the beginning of EModE.

Attempting to give the VMRS a second chance, one can test whether it holds under looser conditions, e.g. under larger time intervals. However, no trend was recognizable, as the data profile reviewed in 3.2 illustrates. Since the numerical trend 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. Consider an amendment as in (38).

(38) 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 could have resulted from the changing syntax of pronouns. Pronouns also start inverting in ME in previously non-operator contexts (cf. Kroch et al. 2000 on dialectal differences under Scandinavian influence). If the “temporary” increase in the rate of CI during ME were explained by these developments, there might be a way to save the VMRS, in that inversion would generally be a decreasing tendency, with the largest divergence hypothetically explained by pronouns. Even with this fix, however, the VMRS is not tenable. First, the largest increase in CI frequencies 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 not taken advantage of by CI. No inverting pronouns were found for this ME period. All in all, the problems for a V-to-C based version of VMRS remain for OE, and the scenario faces unexplained puzzles for ME.

Having shown that tying CI to a C-based version of verb-movement is implausible, now consider V-to-T. More specifically, consider the one-way implication stated in (39).

(39) Receding V-to-T => Receding CI rates

But there is a clear argument against (39). Rather naturally, a large ratio of CCSs contains a copula at all stages. The CI estimates in CCSs with the finite copula are shown in (40) below.

(40) Rates of CI in CCSs with the copula (OE-EModE)

OE:	69/1274=	5.41%
M1:	21/116=	18.10%
M2:	6/56=	10.71%

²⁰ Verb-movement is a receding option when *do* developed (see Kroch 1989, 2001 and Warner 1997, 2006 for discussion).

M3:	36/220=	16.36%
M4:	15/110=	13.63%
[ME tot.]	80/519=	15.41%
EModE:	18/653=	2.75%

While the frequencies are higher compared to the overall CI rates, the trends are largely the same: There is a large increase after the OE period and a strong decrease from ME to EModE. Further, it is easy to show – based on the standard syntactic diagnostics; e.g., Emonds (1970), Pollock (1989) – that unlike most verbs, the copula has retained V-to-T in ModE. But this is precisely the paradox. If movement to T were the culprit, one would not expect the decline from ME to EModE in a sub-study that contains an item that did *not* lose the relevant displacement property. I conclude that the VMRS is an unlikely scenario in explaining the history of CI.

4.2 The Innovation, alias Inverse-Inversion, Scenario

Instead of attempting to view CI as a receding property influenced by verb-movement, one could reverse the perspective, and conjecture an innovation scenario instead of loss, cf. (41).

(41) ***Inverse-Inversion*** Scenario for CI (**II**)

CI is largely a new development and as such on a trend contrary to other types of inversion in the history of English in the sense that it increases from x_i to x_{i+1} (where x_i and x_{i+1} are appropriate intervals; cf. (37)).

There are two pieces that might have motivated the assumption that innovation is involved. For instance, negative-preposing inversion, which was not obligatory in earlier English, became so in ModE. Thus a former non-operator context became one. Further, the continental West Germanic languages, do not have CI, cf. the German clausal comparative in (42).

(42) 84 Millionen Handys sind in Deutschland im Einsatz –

84 Mio. mobile phones are in Germany in use (Der Spiegel 29/2007:46)

- a. mehr [als das Land Einwohner hat].
more than the country inhabitants has
- b. *mehr [als hat das Land Einwohner]
more than has the country inhabitants

Thus one might perhaps have speculated that CI is an innovation just setting English further apart from its Germanic origins. However, on closer inspection the *II* reveals itself as untenable. Grammatically, it would require an explanation in the first place. Moreover, it can be argued against both qualitatively and quantitatively by observing that CI was already available in OE. For the diachronic developments that took place since the oldest widely attested stages of the language, which are of interest here, one cannot justify an innovation.²¹

A last way to amend the *II* would be by saying that different types of inversion were available in OE and that an innovation occurred via (generalized) V to C only later during ME. While theoretically suspicious, such a way-out would also face the empirical problem given by the lack of a productive number of inverting pronouns cases in ME. Further, the numerical decline of CI towards ModE would remain unexplained. This argues against any scenario that posits CI to be on the rise. All in all, then, the development of CI cannot be linked to verb-movement (whether with main weight on V-to-C or to T) nor to an innovation scenario.

5 Conclusion

The specific objective of the article has been to improve the account of CI by employing independently known facts about the individual developmental stages of English in the analysis of inversion. It has been argued that CI is more parsimonious than posited by the standard account. I hope to have shown that the behavior of CI has a plausible diachronic origin in conjunction with a notion of syntactic continuity. Together with the general inertia assumption it was

²¹ An innovation may be an interesting if difficult object of investigation for earlier stages, say the transition towards OE. A first observation is that an archaic text such as *Beowulf* (Pintzuk and Kroch 1989) contains CI. One could next try to locate CI with respect to ancestor grammars. What the point also illustrates is the difficulty of the actuation issue (cf., e.g., Kroch 2001; Weinreich et al. 1968).

suggested that the diachronic reasoning offers a window onto the isolate continuity of CI throughout the otherwise strongly changing syntactic record of English. Movement of the finite element to C and of the subject to Spec,TP were argued to be untenable for CI at all stages. The diachronic developments of comparatives together with the insight gained in diachronic syntax (van Kemenade 1987; Kroch et al. 2000, among others) have thus constituted not only useful testing ground for parametric investigation (Roberts 2007), but here a sine-qua-non comparative background for better understanding a current phenomenon. The paper has further shown certain properties of in-situ subjects and a domain in which they appear, which has been under-investigated in the vast field on this topic.

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