

This was published in:

María José López-Couso, Bettelou Los & Anneli Meurman-Solin (eds.). 2012.

*Information Structure and Syntactic Change* [Oxford Studies in the History of English 1]. Oxford: Oxford University Press.

Please cite as:

Van linden, An & Kristin Davidse. 2012. The role of the accessibility of the subject in the development of adjectival complementation from Old English to Present-day English. In María José López-Couso, Bettelou Los & Anneli Meurman-Solin (eds.), *Information Structure and Syntactic Change* [Oxford Studies in the History of English 1], 199-227. Oxford: Oxford University Press.

**The Role of the Accessibility of the Subject in the Development of Adjectival  
Complementation from Old English to Present-Day English**

An Van linden & Kristin Davidse

## Abstract

This article investigates the role of the accessibility of subjects in the development of extraposed complements depending on deontic adjectives, such as *it is important to honour those who have done honour to us* (CB). Throughout history, these mandative constructions have patterned with both *that*- and *to*-complements, whose distribution changed over time. It is shown that, from the rise of the *to*-clauses at the expense of the *that*-clauses in Middle English onwards, these two types of complement start to differ in terms of accessibility of the subject, with *to*-clauses attracting subjects with more accessible reference. Accessibility of subjects therefore appears to have been a factor in the rise of the *to*-infinitive in mandative extraposition constructions. Interestingly, this general trend was temporarily reversed in the Early and Late Modern English data due to a combination of constructional, informational and stylistic factors.

## <1> Introduction<sup>1</sup>

Elements of information structure, i.e. either pragmatic relations, such as topic-focus, or pragmatic states, such as the activation states of referents (Lambrecht 2000: 49), have been identified as important determinants of syntactic variation and change in various domains. With regard to verb complements, for instance, Taylor & Pintzuk (this volume) have found that in Old English variation in object position is significantly conditioned by the object's given or new status (in subordinate clauses with finite main verbs). Likewise, van Kemenade & Westergaard (this volume) have established a correlation between information structural properties of subjects and their verb-second versus non-verb-second position in Middle English. Exploring the role of information structure in the choice of clausal complement, Noël (2003) showed that the main determinant of the variation between *to*- and *that*-complements of verbs such as *believe*, *think* and *judge* is the discourse-old versus discourse-new status of the subject of the complement clause. According to Chafe (1994: 87), the status of information on the given-new continuum needs to be defined in terms of the activation state of a concept (e.g. inactive – semi-active – active) in the consciousness of the speaker. This article will also examine the role of the activation state of the subject in the variation between *to*- and *that*-complements, but in a different constructional environment, viz. extraposition constructions with deontic adjectives such as *necessary*, *important*, *essential* and *proper*, which take mandative complements expressing desired action (Huddleston & Pullum 2002: 996), as in (1) and (2).<sup>2</sup>

(1) I think that it is *essential* to show love to children – it gives them confidence and

security. I have a very close and affectionate relationship with Alec, Neil and my daughter, too. (CB, ukmags)<sup>3</sup>

- (2) But in a country where everyone realised there might be riots or violence or whatever, guns were still very easily available, weren't they? 'Yes', said Reagan. 'Although I'm not one who believes in overdoing the restriction on that, because the wrong person can always get the gun, so perhaps it's *proper* that the right person should have them at least available.' (CB, ukbooks)

We will focus on the accessibility (Ariel 1988, 1996, 2001) of the subjects, which are overtly expressed in the *that*-complements but mostly have to be inferred in the *to*-complements. Accessibility theory states that, because mental representations are accessible to us in varying degrees, speakers choose their referring expressions by taking into account the degree of accessibility the referent has for the addressee (Ariel 1996: 20). Accessibility markers range from zero over pronouns to full nominals. In general, definite NPs represent entities of higher accessibility than indefinite NPs, first and second person are more activated than third person referents, and with the latter, the accessibility of the antecedent may further influence the accessibility of the referent (Ariel 1996: 22). The main questions that we will investigate are: Do the subjects of *that*- and *to*-complements differ in terms of accessibility? Did they change in this respect over time? And if so, how do these changes relate to the changed distribution of the *to*- versus *that*-complements themselves?

Van linden (2010a) has shown that the complementation of matrix predicates with adjectives expressing 'desirability' shifted from a predominance of *that*-clauses in Old English to one of *to*-infinitives in Middle English. This development is parallel to

‘the rise of the *to*-infinitive’ established by Los (2005) in complements of verbs with a volitional element. For the complements of the adjectival matrix predicates some observations in the literature suggest a possible correlation between the shift in the formal coding of the complement and a changed distribution in the accessibility of their subjects. Los (2005: 292) claims that in constructions with evaluative predicates such as *best* (‘best’) and *to*-complements ‘the majority of instances have arbitrary PRO’, that is, the implied subject has what, in functional terms, has been called ‘generalized’ reference (Halliday & Hasan 1976: 44) such as expressed by *one*, (general) *we/you*, *everyone*, etc. Picking up on this observation, Van linden (2010a) formulated the diachronic hypothesis that the encroachment of *to*-complements on *that*-complements in the adjectival mandative construction may have gone together with a decrease of (overt) subjects with general reference in the *that*-complements. A corpus-based pilot study of mandative *that*-complements in Old English and Late Modern English confirmed this hypothesis. Building on these findings, we hypothesize in this article that the natural attraction of inferrable subjects with general reference to *to*-complements may have been a contributing factor to the rise of *to* complements in adjectival mandative constructions.

In this article we will investigate this hypothesis systematically by extending the data studied and by refining the analysis. We will study successive slices from Old English, Middle English, Early Modern English, Late Modern English and Present-Day English. The analytical parameters will be further differentiated along two dimensions. Firstly, the subjects of *that*- and *to*-complements will be analyzed not only in terms of the distinction between general and specific reference, but, within the latter, also between speech participants and third persons. It will be argued that in terms of

immediate accessibility, subjects referring to specific speech participants line up with those with general reference, whereas the subjects with third person reference are less accessible. Secondly, a systematic distinction will be made between the four subtypes of constructions that can take *to*-complements,<sup>4</sup> viz.

- (i) *to*-complement of complex transitive matrix (cf. Quirk et al. 1985: 54)
- (3) ... the publisher John Calder felt it *necessary* to form a movement in 1968 to protect literature from what he saw as a growing danger of censorship ... (CB, ukbooks)
- (ii) *for* + subject + *to*-complement of copular or complex transitive matrix clauses
- (4) The SNP are moving ahead because we are Scotland's party and it is entirely *proper* for Scots to prefer a home-based product to Blair's Millbank mouthpieces. (CB, sunnow)
- (iii) *to*-complement of copular matrix with expressed experiencer
- (5) 'It is *crucial* to us to play in such an important competition', he said. (CB, times)
- (iv) *to*-complement of copular matrix (without expressed experiencer)
- (6) Jane was told to apply to the DSS for Income Support straight away. However, with the mortgage already more than a month in arrears and with the DSS only paying half the interest payments for the first sixteen weeks, it was *important* to reassure the building society that things would stabilize after those sixteen weeks were up. (CB, ukbooks)

These four constructions present different discourse environments for the retrieval of the referent of the subject. The subject of the matrix of subtype (i) and the experiencer in the matrix of subtype (iii), which was commonly expressed by a dative noun phrase in earlier English, are mostly co-referential with the (understood) subject of the *to*-complement. The complement of subtype (ii) actually has an overt subject, or, more precisely, a constituent that can at least be interpreted as its subject, i.e. the syntagm is ambiguous between a *for* + subject + *to*-complement construction and one in which the *for*-PP functions as the benefactive of the matrix (Fischer 1992: 330–1; Huddleston & Pullum 2002: 1178, 1183; De Smet 2009).<sup>5</sup> With subtype (iv), by contrast, the reader has to look at the wider context to either identify the subject as general *one/we*, as in (1) above, or to establish ‘an interpretative relation of correspondence between some text participant’ (De Smet 2007: 91) explicitly mentioned in the preceding text and the subject, as in (6), in which the subject responsible for reassuring the building society is the *Jane* mentioned earlier. As we will see, the different syntactic and pragmatic properties of these constructions play an important role in the changes of distribution of the different subject referents.

The article is organized as follows. Section 2 briefly discusses the data used in this study. Section 3 sketches the starting point of this study, viz. the change in relative frequency of the complement types in the mandative extraposition construction. Section 4 sets out the referential parameters that will be applied to the subjects of the complements. Section 5 presents the quantified analyses of the diachronic and synchronic corpus data, while sections 6 and 7 discuss the main findings in relation to the starting hypothesis of this article: was there, with the rise of the *to*-infinitive, an

increase of subjects with more accessible reference in these complements? In section 8, finally, we draw conclusions and propose some questions for further reflection.

#### <1> Compilation of Data

To trace extraposition constructions with mandative complements in corpora of the various stages of English, the adjectives that could express degrees of desirability of a State of Affairs (SoA) in these periods had to be identified.<sup>6</sup> To find adjectives in this semantic domain, Van linden (2009, 2010a, Forthcoming) used *Roget's Thesaurus* (Dutch & Roget 1970) along with the online *Oxford English Dictionary* (OED). The adjectives in the Present-Day English dataset are given in the bottom row of Table 2. This set served as a starting point for the diachronic onomasiological inquiry into which adjectives conveyed desirability of an SoA at earlier stages of the language. Van linden (2009, 2010a, Forthcoming) looked for Old and Middle English counterparts of the Present-Day English adjectives in the online *Thesaurus of Old English* and the *Middle English Dictionary*. The adjectives thus identified were then, taking into account spelling variants, searched for in the five corpora listed in Table 1. For Old, Middle and Early Modern English, we used multi-genre corpora of written texts. The Present-Day English *COBUILD Corpus* also represents a variety of text types and, unlike the older corpora, includes spoken data. The *Corpus of Late Modern English texts*, however, is strongly biased towards literary texts (De Smet 2005).

@@ PUT TABLE 1 ABOUT HERE



The results of the corpus searches are given in Table 2, which lists the adjectives attested per period, with their number of occurrences indicated between brackets.<sup>7</sup> The table also distinguishes between deontic and deontic-evaluative adjectives. The two classes differ in terms of the semantic complement types they pattern with. Deontic adjectives only take mandative complements, which depict desired--and hence as yet--potential SoAs, as in (1). By contrast, deontic-evaluative adjectives are found with both mandative complements, as in (2), and propositional complements, which designate propositions presupposed to be true, as in (7) below. The meaning of the construction in (7) as a whole is purely evaluative, rather than deontic (cf. Van Linden & Davidse 2009).

- (7) He said: ‘We have to go for it and peg Celtic back. We’ve given away too many bad goals to draw games and it’s *good* that we’ve had a run of wins to stay in contention.’ (CB, sunnow)

As the focus of this article is on mandative constructions, examples such as (7) have been excluded from the analysis.

@@ PUT TABLE 2 ABOUT HERE

As can be seen in Table 2, the set of adjectives is rather different for the first three periods. In general, these periods witnessed many changes in the lexicon, with the Middle English period functioning as a hinge. In Middle English, the original Old English word stock decreased steadily, while at the same time loans, especially from the Romance family, and also new word-formations on the basis of Middle English lexical

items came into the language (see e.g., Dekeyser 1986, Burnley 1992, Rothwell 1998). As for the deontic adjectives, some disappeared, such as *niedþearf*, others underwent semantic change, such as *rightful*, and still others entered the language as a result of word formation, such as *needful* and *behofsam*, or language contact, such as *essential*, *necessary*, *convenient* and *proper*. Table 2 also shows that the set of Early Modern English adjectives is much larger than the Present-Day English one, which can be explained by semantic changes and stricter selection restrictions. The adjectives *competent* and *skilful*, for instance, are still used in Present-Day English, but they are only predicated of humans and are not used in mandative extraposition constructions anymore.

For this study all the data presented in Table 2 will be used.<sup>8</sup> As the corpora differ in size and the data are not distributed evenly over the various periods, we will provide normalized frequencies per 100,000 words in addition to the absolute frequencies. We will also systematically apply Fisher's exact tests to assess the significance of changes manifested by datasets of very different sizes.

#### <1> The Rise of the *To*-infinitive in Adjectival Constructions

This section summarizes the starting points for this study taken from Van linden (2010a), viz. the changes in the distribution of *that*- and *to*-complements in mandative extraposition constructions, and the pilot study relating these to the accessibility of the subjects of the complements.

In Old English, the mandative complements were typically coded by *that*-clauses, and only marginally by *to*-clauses. These two formal types are illustrated in

examples (8) and (9) respectively.<sup>9</sup>

- (8) eft he cwæð: *God* bið mannum ðæt ælc hæbbe his agen  
 afterwards he said good is men.DAT that each have.PRS.SBJV his own  
 wif, & ælc wif hire ceorl, ðylæs hi on unryht hæmen  
 wife and each wife her husband lest they in sin cohabit.PRS.SBJV  
 ‘Afterwards he said: “It is good for men that each have his own wife, and each  
 wife her husband, lest they should cohabit in sin” (YCOE 890–9 CP 51.397.18)
- (9) Forþon hit is *god* godne to herianne & yfelne to leanne  
 therefore it is good good.things to praise and evil.things to reproach  
 ‘Therefore, it is good to praise good things and to reproach evil things’ (YCOE  
 1050–99 BedePref 2.10)

During the Middle English period, the *to*-infinitive started replacing the *that*-clause, as shown by Table 3, with the absolute frequencies (n), normalized frequencies per 100,000 words (N), and relative shares (%) of *that*- versus *to*-complements in Old and Middle English.

@@ PUT TABLE 3 ABOUT HERE

The overall predominance of *that*-clauses in Old English changes to an equal distribution in Early Middle English, and a predominance of *to*-clauses in Late Middle English.<sup>10</sup> Fisher’s exact tests (cf. Pedersen 1996) indicate that the increase of *to*-infinitives from Late Old English to Early Middle English is highly statistically

significant ( $p=1.672e-06$ ), but that the increase from Early to Late Middle English is not ( $p=0.3125$ ). The rise of the *to*-infinitive can be conveniently illustrated by the following translations of the same Bible verse: whereas Late Old English (10) has a subjunctive *that*-clause, Late Middle English (11) has a *to*-complement.<sup>11</sup>

(10) He andwyrde; Nis na god þæt man nyme his bearna  
 he answered not.is not good that one take.PRS.SBJV his children.GEN  
 hlaf. and awurpe hundum;  
 bread and throw.PRS.SBJV dogs.DAT

‘He answered: “It is not good that one should take the bread of his children and throw it to the dogs”’ (YCOE 990–1010 ÆCHom II, 8 67.16)

(11) And Crist answeride and seyde ‘Hit is not good to take þe breed þat  
 and Christ answered and said it is not good to take the bread that  
 fallub to children, and zyuen hit to howndes to ete fro þese children.’  
 belongs to children and give it to dogs to eat from these children  
 ‘And Christ answered and said: “It is not good to take the bread that belongs to  
 children from these children and give it to dogs to eat”’ (PPCME ?a1425  
 Wycl.Serm. (Add 40672) 401)

After its strong increase in Middle English, the *to*-infinitive stabilized at about a 3:1 ratio to the *that*-clause in the Modern English period, as detailed in Table 4 below--with only a small peak movement in Late Modern English.

@ @ PUT TABLE 4 ABOUT HERE

In her study of the rise of the *to*-infinitive with deontic adjectives, Van linden (2010a: 41–5) ventured the hypothesis that this change was motivated by differences in degree of accessibility between the subjects of *to*- and *that*-complements. She explored this hypothesis in a pilot study of *that*-complements in her Old English and Late Modern English data (see Table 2). In her analysis of the--overt--subjects in these complements, she made a distinction between subjects with low and high informativity, which roughly corresponds to highly accessible versus lowly accessible subjects (Ariel 1996: 20–25).<sup>12</sup> From Old to Late Modern English, a considerable decrease of the more accessible subjects could be observed in the *that*-complements, which might be compatible with attraction of these subjects to the *to*-complements, in the sense that such subjects need not be expressed overtly for the reference to be retrievable. The data showed, for instance, that *that*-clauses with the indefinite pronoun *man*, illustrated in (10), had disappeared, as in the *to*-complement without overt subject in (11), by Late Modern English (see also Los 2005: 290–3). While the main findings of the case-study confirmed the value of the general research questions, they did not provide any definitive answers. Only two periods were covered and the *to*-complements were not included in the study. The aim of this article is to investigate *systematically* in what way the encroachment of *to*-infinitives on *that*-complements correlates with changed distributions of more and less accessible subjects in these complements. This requires analytical parameters for the accessibility of subject referents that can be applied to both overt and non-expressed subjects, which we turn to in the next section.

<1> Basic Reference Types: Generality and Accessibility

Keeping in mind the requirement that the overt and inferred subjects have to be analyzed in the same way, we distinguished three basic kinds of reference:

- (1) general
- (2) specific speech participant
- (3) specific third person.

The latter two can be recognized fairly straightforwardly. Specific third person reference is to one individual or a specific finite set of concrete individuals. It is characteristic of this type of reference that it is subject to the first-next mention distinction (Du Bois 1980: 220–2): the referent is typically introduced by an indefinite noun phrase (NP), such as *a new centre* in (12), and then referred back to by definite NPs, such as *the new building* in (12), except when the first mention is by proper names (Du Bois 1980: 207).<sup>13</sup>

- (12) THE Huawi Centre in Huddersfield was damaged in a recent fire... . Kirklees Council which owns the building is now planning to build a new centre. Mr. Bob Davies, Head of Community Development for Kirklees, said a replacement Centre would have a lot more space and more flexibility than the old centre... . Teresas Adams, Development Worker at the Hudawi said It would be good to have a Nursery incorporated into the new building as well as a gymnasium and space for people to mix socially. She added that it was *important* for the new building to be welcoming to all members of the community and in particular, for it to be accessible to individuals with disabilities. (CB, ukmags)

Specific speech participant reference is to a specific speaker/writer or hearer/reader, or to a specific set including speaker or hearer. In (13), for example, the subject of the *to*-clause, expressed by *for* + NP, is co-referential with the speaker.

- (13) Advertising is a precarious profession. I certainly didn't choose it as a secure option. Who known [sic] what I'll be doing in five years time? I believe that it's very *important* for me to remain practical but also be open to new possibilities.  
(CB, ukmags)

The delineation of general reference is more complex. Under this heading we subsume both generic reference (to a class as such) and generalized reference (to *one*, *you*, *we*, *they*, *everyone*, OE/ME *man*, etc.) in the sense of Halliday & Hasan (1976: 44). Generic reference is generally accepted to be expressed in English by either a singular NP with *a*, singular NP with *the*, bare plural or bare uncount NP. However, Lyons (1999: 336) correctly observes that 'plural and mass generics can be definite in English too with a limited range of nouns', e.g. *the Danes*, *the vertebrates*, *the rain*. We found such definite plural NPs with generic reference in particular in our Late Modern English data. An example is given in (14).

- (14) But it is not only *necessary* that the flowers should keep their honey for the insects, they also have to take care and keep it for the right kind of insect.  
(CLMETEV 1879 Buckley, *The fairy-land of science*)

Pronouns that can be used with generalized reference include *one*, *you*, *we*, *they*,

*everyone*, and we can add general nouns such as *people* to this series. NPs with totality determiners *every/each/no* as well as with determiners expressing arbitrary reference (*any/some*) can also realize generalized reference. Of these last two we give examples (15) and (16), to which example (17) with indefinite singular NP is clearly closely related. As suggested by Langacker (1991: 104–6), indefinite singular generics realize generic reference by referring to an arbitrary instance of the class.

- (15) In that rude state of society, in which there is no division of labour, in which exchanges are seldom made, and in which every man provides every thing for himself, it is not *necessary* that any stock should be accumulated, (CLMETEV 1766 Smith, *An inquiry into the nature and causes of the wealth of nations*)
- (16) if it is *necessary* that some crime should be proved before any man can suffer as a criminal, then, my lords, I am convinced that your lordships will be unanimous in rejecting the motion. (CLMETEV 1740–41 Johnson, *Parliamentary debates*)
- (17) But the state of Britain is far different; it is not *necessary* to our ruin that an enemy should be stronger than ourselves, that he should be able to pour armies into our country, to cover the sea with fleets, to burn our villages by incursions, or destroy our fortresses with bombs; (CLMETEV 1740–41 Johnson, *Parliamentary debates*)

The types of general, specific speech participant and specific third person reference can be cross-classified in terms of two oppositions: general-specific on the one hand and more or less accessible on the other hand.

The distinction general-specific sets off specific first/second and third person



reference against general reference. Applied to our mandative construction data, it will oppose the expression of general recommendations to ‘one/we’, as in example (1) above (*it is essential to show love*), or *Scots* in (4) (*it is proper for Scots to prefer a home-based product*), to the imposing of actions on specific individuals, such as *John Calder* in (3) (*John Calder felt it necessary to form a movement*) and *us* in (5) (*it is crucial to us to play*). Reconstructing how the distribution of the general-specific opposition developed in *that-* and *to-*complements over time definitely seems relevant to our general research aims.

However, from another perspective, general and speech participant reference can be grouped together against specific third person reference. This crucially hinges on where the hearer/reader has to look to retrieve the identity of referents. Third person referents typically have endophoric retrieval; that is, their antecedent has to be tracked in the surrounding text (Halliday & Hasan 1976: 33). By contrast, first and second person pronouns point exophorically to the speech situation (Halliday & Hasan 1976: 51) which defines speaker and hearer. Pronouns with generalized reference also point exophorically to general, not clearly delineated, populations. Generic reference, which is realized by full NPs, requires the hearer to mentally access the class as such. This identification passes through the lexical type specifications given by the generic NP, but, unlike NPs with specific third person reference, it does not involve the tracking of antecedents and possible redefinitions of the specific sets referred to (cf. Martin 1992: 141–2). This also applies to NPs with totality determiners such as *every*, *no* referring to the whole class, and for NPs with determiners realizing arbitrary reference. The referents of NPs such as *any stock* in (15) or *some crime* in (16) are directly accessible as they do not require the retrieval of antecedents.

The relevance of this opposition to our extraposition data can be illustrated with the following examples.

- (18) The little sins are sometimes harder to confess than the big ones – but that’s why it’s so *important* to confess them. (CLMETEV 1914 Chesterton, *The wisdom of father Brown*)
- (19) ... give me a word of explanation as to who she is, what mischief she’s been up to, or what you are to do with her! If I’m to be of any further use, it would seem at least *expedient* to give me some hints. (CLMETEV 1885 Blind, *Tarantella*)
- (20) Instead of the little passions which so frequently perplex a female reign, the steady administration of Zenobia was guided by the most judicious maxims of policy. If it was *expedient* to pardon, she could calm her resentment.  
(CLMETEV 1776 Gibbon, *The decline and fall of the Roman Empire*)

In example (18), the implied subject of the *to*-infinitive has general reference, while in (19) it has second person reference. Both referents are tied to the speech situation from the speaker’s perspective and are easily accessed by the hearer. By contrast, in (20) the reader has to infer that the desirability of ‘pardoning’ described in the conditional clause applies specifically to the subject *she* of the matrix, which is identified in the preceding sentences as *Zenobia*. The use of the *to*-infinitive with implied specific third person subject involves more and more complex processes of information retrieval. The expectation that this use is historically a later development would seem a plausible hypothesis. Hence, we will also investigate how the opposition between more accessible (general and speech participant) reference and less accessible (specific third person)

reference developed over time.

### <1> Analyses of the Data

In this section we present the results of our quantitative analyses of the successive diachronic data slices. First we trace the development of the general-specific opposition in the subjects of *that*- and *to*-complements. Table 5 gives the absolute numbers as well as the relative frequencies of the general versus specific subjects in the two complement types. As it gives the proportions for all the complements within each time slice, the general picture incorporates the rise of the *to*-infinitive and the decline of the *that*-complement.

@@ PUT TABLE 5 ABOUT HERE

Our starting hypothesis was that the *to*-complements attracted subjects with general reference. We do see a decrease of *that*-complements with general subjects, which from Early Old English to Present-Day English dropped from 54% to 15.48% of all the mandative complements. This general decrease is statistically significant according to Fisher's exact tests ( $p=5.844e-10$ ), but the stepwise drops from 51.43% in Late Old English to 35% in Early Middle English to 17.72% in Late Middle English are not ( $p=0.2156$  and  $p=0.1244$  respectively). This proportion of general subjects could be said to have stabilized from Late Middle English on--with 15.48% in Present-Day English it has barely changed--had there not been the Modern English data, with a drop to 8.18% in Late Modern English, which is a significant fall compared to Late Middle English

and Early Modern English ( $p=0.006563$  and  $p=0.001553$  respectively).

In general, we can also observe an increase in *to*-clauses with general subjects, which go up from 12% in Early Old English to 49.28% in Present-Day English (a significant increase according to Fisher exact tests, with  $p=6.593e-08$ ). This rise seems also basically completed in Late Middle English: the 49.37% portion found there is almost identical to the 49.28% portion in Present-Day English. But again, the Modern English data break with the general trend, presenting a very marked reversal: in Early Modern English 42.72% of the *to*-complements have subjects with specific reference, a significant rise compared to Late Middle English ( $p=1.093e-05$ ), and in Late Modern English this goes up to 60.68%, an even more significant rise compared to Late Middle English ( $p=3.961e-09$ ). It has become clear by now that the deviations from the tendencies in Early and Late Modern English appear to thwart expectations based on information structural grounds, and must have been motivated by other factors. In section 7, we will argue that these other factors relate mainly to stylistic fashions, which were restricted in time and register.

Tables 6 and 7 present an overview of the developments within the two complement types. In other words, the relative frequencies indicated do not reflect the change in the distribution of the complements themselves.

@@ PUT TABLE 6 ABOUT HERE

@@ PUT TABLE 7 ABOUT HERE

For the *that*-complements, Table 6 shows an overall decrease of general subjects (69.23% > 54.73%) and a concomitant increase of specific subjects (30.77% > 43.28%)

from Early Old English to Present-Day English, but as relative percentages *within* the same complement type, the changes are less pronounced than those in Table 5 and not statistically significant ( $p=0.09813$  and  $p=0.1376$ ). For the *to*-infinitives in Table 7, the extreme scarcity of data up until Early Middle English allows us to consider the development only from Late Middle English on. From Late Middle English to Present-Day English the proportion of subjects with general reference actually goes down by 10% (no significant fall with  $p=0.2151$ ) and that of subjects with specific reference goes up by 10% (no significant rise with  $p=0.2149$ ). In between these two time periods there is the marked reversal in the Modern English data, which we already noted above. The subjects with general reference drop dramatically (to 24.02% in LModE) and those with specific reference rise accordingly (to 75.98% in LModE), in each case a significant change from Late Middle English with  $p=5.094e-15$ . While this extreme reversal of tendencies was short-lived, it seems to have had some effect on Present-Day English. Present-Day English largely re-connects with the proportions of Late Middle English, but, as noted above, the *to*-complements have 10% fewer general and 10% more specific subjects than Late Middle English.

A final question is how the distribution of subjects with specific third person reference developed over time. Recall that third person referents involve more difficult, typically endophoric, retrieval, and were therefore expected to favor coding by explicit subjects in *that*-clauses. Tables 8 and 9 show the proportions of first/second and third person within the set of subjects with specific reference.

@ @ PUT TABLE 8 ABOUT HERE

@ @ PUT TABLE 9 ABOUT HERE

The big picture is as follows. Within the *that*-complements, subjects with third person reference proportionally increased (OE: 17.95% > PDE: 26.99%), albeit not significantly according to Fisher exact tests ( $p=0.2664$ ), and have predominated over those with first/second person reference from Late Middle English on. In *to*-complements, third person subjects gained ground from Early Modern English on, when they stood in a 24.62% to 40.20% ratio with speech participant subjects (a significant rise from LME with  $p=0.003036$ ). The choice between third person and speech participant subjects became even equi-probable in Late Modern English, with the two options taking a share of about 38% (a significant rise of third person subjects from EModE with  $p=0.0001606$ ), but the importance of third person subjects tapered off again in Present-Day English, when its share vis-à-vis first/second person is 13.84% to 17.42%. (Of course, subjects with specific reference have as such dropped considerably in the PDE data, viz. with  $p<2.2e-16$  compared to LModE.) Hence, we can say that third person subjects were attracted over time by the *that*-complements, but that, perhaps rather surprisingly, they also appropriated a reasonable portion of the rising *to*-infinitive. For a brief period, viz. in Late Modern English, they even accounted, by a fraction, for the majority (38.32%) of *to*-complements.

In this section, we have described the main developments that could be observed in our data in the association of subjects with different degrees of specificity and accessibility with *that*- and *to*-complements. It has also become clear that Modern English goes markedly against the grain of the general tendencies. In the next section, we will interpret the general developments, while in section 7 we will look more closely at the counter-currents in Modern English.

## <1> Discussion of General Trends

Overall, the diachronic data-analyses in section 5 confirmed the initially predicted correlations. *That*-complements repelled general subjects, while *to*-complements attracted them. This is in accordance with Los's (2005: 292) claim that such complements typically 'have arbitrary PRO'. Van linden (2010a) had hypothesized that the rise of *to*-complements went together with an increase in them of subject referents with low informativity. As further argued in section 3, in terms of accessibility of referents, general reference can be grouped together with speech participant reference. If we look at the relative frequencies within *to*-complements for accessibility, they end up with 86.16% of accessible subjects in the very extensive Present-Day English dataset, as compared with 72.73% in Early Old English, which is not, however, a significant increase ( $p=0.1896$ ). In the *that*-clauses, the proportion of accessible subjects decreased from 82.05% in Early Old English to 71.02% in Present-Day English, again not a significant drop ( $p=0.1499$ ).

So far, the figures comply with the expected tendencies, but the Fisher's exact tests indicate that the quantitative changes within the two formal complement types are not spectacular. However, if we compare the relative proportions of more and less accessible subjects between *that*- and *to*-complements, the results are more telling. From Early Old English to Early Middle English, the period in which *that*-clauses account for the majority or at least half of the mandative constructions, the distribution of more and less accessible subjects across *that*- and *to*-clauses is not statistically significant (with p-values ranging from  $p=0.6706$  to  $p=1$ ). This distribution becomes

significant in Late Middle English, which shows a clear majority of *to*-clauses (see Table 3). In this period, *to*-complements have considerably more accessible subjects than *that*-complements, with  $p=0.0005989$ . The same goes for the Early Modern English period, although less markedly with  $p=0.007887$ . The Late Modern English data, as we have come to expect, reverse the trend: they do not show a significant distribution of more versus less accessible subjects ( $p=0.2887$ ), which can be explained by the exceptionally high ratio of third person specific subjects in the *to*-clauses (see Table 9). In Present-Day English, the distribution is again highly significant ( $p<2.2e-16$ ), with *to*-clauses strongly attracting subjects with more accessible reference.

Clearly, the distribution of more and less accessible subject referents over the *to*- and *that*-complements shifted from the older stages towards Present-Day English. It seems plausible that these shifts are at least partly motivated by information factors. Informationally, non-expressed accessible subject referents can easily be recovered, but the retrieval of non-expressed third person referents in *to*-complements is more complex. By contrast, overt third person subjects in *that*-complements demand no particular processing efforts. The shifts from the earlier stages to Present-Day English have thus increased the informationally more natural correlations. Therefore, we propose that the accessibility of the subject referents should be identified as a contributing factor to the rise of the *to*-infinitive in adjectival mandative constructions. One reason why extraposition constructions with deontic adjectives began to favor *to*-complements was that they provided an economic way of proposing desired action for general and speech participant referents. Another factor, as argued by Van Linden (2010a: 29–38), was analogy with the rise of *to*-complements in verbal mandative constructions. (For more detailed discussion of the syntagmatic and paradigmatic



processes of analogy involved, see Van linden 2010a.)

#### <1> The Reversal of Trends in the Modern English Data

Throughout sections 4 and 5 it was noted that the general trends were temporarily reversed in Early and Late Modern English--and strongly so. Most of the changes were statistically significant not only when the *that*- and *to*-complements were taken together but also within the *to*-complements as such. The reversals of the proportions of subject types peaked in Late Modern English, which was also the period when *to*-infinitives peaked (cf. Table 4). Within the *that*-clauses, subjects with general reference temporarily dropped to relative frequencies of 41.75% (EModE) and 40.63% (LModE) (cf. Tables 6 and 8), while even more surprisingly, in the *to*-complements subjects with specific reference came to predominate, with relative frequencies of 64.82% in Early Modern English and 75.98% in Late Modern English (cf. Table 7). Whereas first and second person subjects dominated third person subjects with a ratio of 40.20% to 24.62% in Early Modern English, third person subjects rose to a relative frequency of 38.32% against 37.66% of speech participant subjects in Late Modern English (cf. Table 9). These frequencies, particularly those of Late Modern English, seem to go against the natural correlations between complement type and generality/accessibility of the subject referents, discussed in section 6.

Interestingly, this temporary reversal appears to have been promoted by the three constructions with extraposed *to*-infinitive distinct from the extraposition construction with a copular matrix (see section 1):

(i) complex transitive constructions;

(ii) *for*-NP + *to*-infinitive constructions;

(iii) experiencer in matrix constructions.

In relation to our concerns in this study, two things are noteworthy about these constructions. Firstly, the first two, but particularly the complex transitive construction, suddenly became much more common in Modern English. Secondly, they tend to provide the identity of the subject of the *to*-infinitive within the mandative extraposition construction itself, which renders subjects with specific third person reference informationally less marked.

Table 10 represents the relative **frequencies** of the four *to*-infinitival constructions in each period.<sup>14</sup> It clearly shows how the copular extraposition construction temporarily had its relative frequency reduced in Modern English mainly by the sudden rise of the complex transitive type.

@ @ PUT TABLE 10 ABOUT HERE

The complex transitive construction burst into prominence in Early Modern English, accounting for almost half (46.23%) of all the *to*-complements in that period (a highly significant rise from LME with  $p=3.219e-12$ ). From 38.66% in Late Modern English it then fell back to 7.56% in Present-Day English (a highly significant drop with  $p<2.2e-16$ ). It thus seems to have been a temporary fad in the literary texts and *belles lettres* of Modern English, which are strongly represented in the CLMETEV.<sup>15</sup> The complex transitive construction with extraposed mandative complement was used not only to express general moral imperatives (21) and politically recommended action (22), but also actions to be taken in concrete contexts (23) and points to be tackled by the writer

or noted by the reader, i.e. in what we now call metadiscourse (Hyland 2005), as in (24).

Its use in the last two types now appears rather dated.

- (21) Formerly the farmers might more justly have been termed woodcutters. But now they find it *necessary* to spare the woods a little, and this change will be universally beneficial; ... (CLMETEV 1796 Wollstonecraft, *Letters on Norway, Sweden, and Denmark*)
- (22) This day, my [Lady], a proclamation is come forth signifying [that], [the] fleet being out and all things soe well prepared [against] [the] publick enemy, it is thought *fit* to prorogue [the] parliament to [the] 14th of June. (PPCEME 1692 Hatton, *Correspondence of the family of Hatton*)
- (23) Having penetrated as far as Derbe, they thought *proper* to return by the way that they came, calling at every city where they had sown the good seed (CLMETEV 1792 Carey, *An enquiry into the obligations of Christians*)
- (24) The next day being Sunday the eighth of September, we took Waggon toward Buckstahoo, we had a merry Boore, with an hundred tatters about him and now I thinke it *fit* to describe these Boores, their natures, habits, and vnmannerly manners. (PPCEME 1630 Taylor, *The great eater of Kent*)

The construction in which the subject of the *to*-infinitive is explicitly expressed by *for* + NP also became more common in Early Modern English, when it rose to 17.09%. In the Present-Day English data, it still occupies 15.11%, even though Late Modern English showed a significant dip to 10.25%. The construction in which the person to whom a certain action is desirable (the ‘experiencer’) is expressed by a dative or prepositional

phrase in the matrix is the only one that was more common earlier on (54.55% in EOE) and decreased in frequency from Early Modern English on, when it dropped to 6.03% and reached a low of 0.59% in Present-Day English.

In contrast with the extraposition construction with a copular matrix, these three constructions either give, or facilitate retrieval of, the identity of the subject of the *to*-infinitive, the entity held responsible for carrying out the desired action (Halliday 1994: 76–7). *To*-complements with *for* + NP have an overt subject, so its identity is always given. In (25), for instance, Copernicus and his first disciples were responsible for proving the similarity of terrestrial and celestial matter.

(25) Are you not aware, PHILO, that it became *necessary* for Copernicus and his first disciples to prove the similarity of the terrestrial and celestial matter; ...

(CLMETEV 1779 Hume, *Dialogues concerning natural religion*)

With complex transitives, the subject of the matrix is mostly co-referential with the (understood) subject of the *to*-complement. In (26), for example, the implied subject of *to attempt* is Wyatt, the subject of the matrix clause *thought meete*.

(26) Throckmorton: ‘I aunswere, though Wyat thought *meete* to attempt so daungerous an Enterprise, and that Winter enformed me of it, you cannot extende Wyatt’s Deuises to be mine, and to bring me within the compass of Treason’ (PPCEME 1554 *Trial Throckmorton*)

However, exceptionally there is no such co-referentiality, as in (27), in which the

subject of the matrix *he*, i.e. Thomas More, is not the subject of the enforcing of conformity that he thinks is necessary.

(27) When he wrote ‘Utopia’ he advocated absolute freedom of opinion in matters of religion; in [sic] after years he believed it *necessary* to enforce conformity.

(CLMETEV 1829 Southey, *Sir Thomas More*)

When the matrix contains a causative verb (28), rather than one of cognition or verbalization, or a passive verb, as in (22) above, the identity of the subject of the *to*-infinitive often cannot be retrieved from the matrix either.

(28) Legislation and customer demand will make it *vital* to show that products and processes are ‘environmentally-friendly’. (CB, ukephem)

However, the majority of examples in our data are of the type illustrated by (26) in which the identity of the subject is given by the matrix. Constructions with an experiencer in the matrix, like complex transitives, typically have co-referentiality between the experiencer and the implied subject of the *to*-infinitive, as in (29), in which it is Mr. Touchett who is expected to throw himself into other scenes.<sup>16</sup>

(29) The change was effected with unusual celerity, for it was as needful to Mrs. Mitchell to be speedily established in a warm climate, as it was *desirable* to Mr. Touchett to throw himself into other scenes; (CLMETEV 1865 Yonge, *The clever woman of the family*)

In sum, the complex transitive and the experiencer-matrix constructions mostly provide the subjects of the *to*-infinitive by endophoric retrieval within the mandative construction itself, while *to*-infinitives with *for* + NP have overt subjects. Hence, these three constructions form environments in which subjects with specific third person reference do *not* involve the complex retrieval processes that these subjects require in extraposition constructions with a copular matrix. In the light of this point we will consider the distribution of general, specific third person and speech participant reference of the subjects of the *to*-complements in the four different constructions. Our starting hypothesis is that the complex transitive, experiencer-matrix and *for* + subject constructions attract specific, and in particular third person, subjects more than the construction with a copular matrix. If confirmed, this would be a tendency motivated by informational factors.

Table 11 presents the distribution of the three types of subjects across the four *to*-infinitival constructions over time.

@@ PUT TABLE 11 ABOUT HERE

If we focus on Late Modern English, the period that most strongly reversed the general tendencies, we see that our expectations are confirmed, most strongly for the complex transitives, and then, in decreasing order, for the *for* + subject and experiencer-matrix constructions. We find very high totals of specific subjects in these three constructions, viz. 89.33% in the complex transitive constructions, 79.23% in the constructions with *for* + subject, and 71.43% in the constructions with an experiencer in the matrix. In the

extraposition constructions with a copular matrix, 65.12% of specific subjects are found. For specific third person subjects, the contrast between the first three constructions and the copular extraposition construction is even more pronounced. Third person subjects account for 60.93% of the complex transitive constructions, 44.81% of the *for* + subject constructions, and 42.86% of the experiencer-matrix constructions, whereas they are found in only 19.50% of the copular *to*-infinitive constructions. An example of the latter is given in (30), in which the action of extemporizing was necessary for Mr. Sadler, the *he*-person mentioned in the previous discourse, who ‘had to’ improvise with a rope to climb the rigging of his air craft in his attempt to cross the Irish Channel from Dublin to Liverpool.

- (30) Ere he had left the land he discovered a rent in his silk which, occasioned by some accident before leaving, showed signs of extending. To reach this, it was *necessary* to extemporise by means of a rope a species of ratlins by which he could climb the rigging. (CLMETEV 1902 Bacon, *The dominion of the air*)

Clearly, the complex transitive, *for* + subject and experiencer-matrix constructions attracted specific and particularly third person subjects to *to*-complements. As the constructions together accounted for half (49.83%) of the *to*-complements in the Late Modern English data (see Table 10), it is only logical that they affected the overall distribution of degrees of generality/accessibility. This is how in Late Modern English the *to*-complements overall chalked up a majority of 76% of specific subjects and 38.32% of third person referents (see Table 9). However--and this is less self-evident--they also affected the distribution of degrees of generality/accessibility within the

construction with a copular matrix. In this construction, third person subjects are in comparison with Early Modern English (6.56%) and Present-Day English (4.99%) three and four times respectively more common in Late Modern English (19.50%) (see Table 11). The idea that *to*-complements can imply the less accessible third person subjects seems to have rubbed off on the extraposition construction with a copular matrix from the other constructions in which third person subjects are informationally less marked.

### <1> Conclusion

In this study of extraposition constructions with deontic adjectives, we have investigated the distribution of general/accessible subjects over *that*- and *to*-complements. Our main research questions were whether *that*- and *to*-clauses attracted different informational types of subjects and whether these proportions changed over time, thus constituting a contributing factor to the rise of *to*-complements in adjectival mandative constructions. The three analytical categories of reference we applied to our data were: general, speech participant and third person. The parameter of accessibility sets apart the first two types from the third, whereas the parameter of generality distinguishes the first type from the last two (section 4). We found that the increase of the *to*-infinitive at the expense of the *that*-clause in extraposition constructions with deontic adjectives in Middle English (cf. Van linden 2010a) went together with an increase of general and more accessible subjects in the *to*-complements, as hinted at in the literature (e.g. Los 2005: 292). This general trend was temporarily reversed in the Modern English period, after which the Present-Day English data reconnected with the Late Middle English data. These findings are summarized in Figure 1 below.



@@ PUT FIGURE 1 ABOUT HERE

In Figure 1, the main shades in the columns indicate the distribution of *that*-clauses (in grey) and *to*-clauses (in white). These show that the main shift from *that*- to *to*-complements occurred in Middle English. At the same time, the columns show the distribution of more accessible subjects (dotted pattern) and less accessible subjects (chequered pattern) across *that*- and *to*-complements (indicated by grey and white shade respectively). The figure reflects the results of the Fisher's exact tests for statistical significance presented in section 6. In Late Middle English, Early Modern English and Present-Day English, all characterized by a majority of *to*-clauses, these complements show a significant preference for more accessible subjects compared to the *that*-clauses, which specialize in accommodating less accessible subjects. The shifts from the earlier stages to Present-Day English generally increased the informationally more natural correlations. We therefore concluded that the accessibility of subjects definitely was a contributing factor to the rise of the *to*-infinitive in the mandative extraposition construction. One reason why extraposition constructions with deontic adjectives started to favor *to*-complements was because they provided an economic way of expressing desired action for general and speech participant referents. The other main factor was analogy with the complementation of verbal matrix predicates (Los 2005), in which the preferred coding of mandative complements also shifted from *that*- to *to*-complements (see Van Linden 2010a).

Apart from this general trend, Figure 1 clearly shows the temporary but very pronounced detour in the Modern period, especially in Late Modern English.

Statistically, this detour is significant in even more respects than the general tendencies, including for instance also the shifts of the relative frequencies of subject types within the *to*-complements. We have argued that, when looked at closely, this reversal is motivated by informational factors as well. The surprisingly large share of less accessible subjects in *to*-complements can be linked to the availability of three extraposition constructions with *to*-infinitives that typically provide the identity of the subject within the mandative construction itself. Two of them, the complex transitive and *for* + NP construction, were especially frequent in the Modern period. They affected the overall distribution of third person subjects in extraposed mandative *to*-complements (which by a fraction formed the majority of the three subject subtypes) and they even temporarily boosted the presence of less accessible subjects in the construction with a copular matrix. In this respect, the different subtypes within the whole paradigm of constructions with extraposed *to*-complements influenced each other. In this remarkable reversal of trends, we pointed out, stylistic fashions and a certain register bias in the Modern English data also played a role. In the rather formal, at times somewhat precious style of the literary data that make up most of our (Late) Modern English data collection, mandative constructions with extraposed *to*-complements were very common with specific and even with third person subjects.

Beyond the central question of the role of informational features of the subject in the rise of *to*-complements in mandative adjectival constructions, this study also presents us with a number of theoretical and methodological challenges. In the first place, the interaction between constructional and informational factors in language change needs further theoretical reflection. Most diachronic studies investigating this interaction, like Noël (2003) and the present study, focus on the mapping of

informational functions or features to syntactico-semantic elements and assume that the development will be towards optimization of the informational factors. However, a more fundamental question which is rarely asked today is whether the very interaction between syntax, semantics and pragmatics may change throughout the history of a language. According to Mathesius (1928), for instance, one of the crucial changes affecting the English clause was from an agent-oriented subject function towards a theme-oriented one, reflecting a systematic shift from predominance of the semantic to predominance of the pragmatic in the English language system. Studies will also have to be set up that can test such more fundamental hypotheses about changes in a language's 'characterology' (Mathesius 1928).

In addition, this study suggests that more theory formation is needed about short-lived changes, such as the cluster of correlated changes observed in the Modern English period. How should we conceptualize such temporary reversals of trends and how can we relate them to general trends? The great surprise of this empirical study was the short-lived but spectacular reversal in the correlation between informational subject types and *that*- and *to*-complements in Modern English. We have characterized it as a boom-and-bust phenomenon, fed by the sudden strong impact of three subtypes of extraposition constructions that constitute different informational environments than the one with a copular matrix (which has become the canonical extraposition construction in Present-Day English). In this case, the short-lived reversal has left little trace so that the Present-Day English figures can largely be seen as a continuation of Middle English. However, not all short-lived changes are likely to be so ephemeral. In any case, more reflection is needed on atypical changes such as very sudden and 'unsuccessful' changes.

A third topic that warrants more theoretical attention is the role of writing in language change. The--once controversial--point that casual spoken exchanges between peers constitute the most important locus of radical language change (cf. Halliday 1978; Du Bois 2003) has come to be generally accepted. However, the pendulum has now swung so far in that direction that writing is currently underrated and understudied as a locus of change. Yet, the sudden rise of specific and even third person subjects in *to*-complements in Modern English is very much associated with specific ways of expression and stylistic fashions in the writing of that period. The general questions of why and how specific changes take place in writing deserve much more attention, and stylistic fashion, the quick catching on of constructions and wordings, is bound to be an important factor here. Finally, we have pointed out that within writing different registers play a role in the ‘sharpness’ of the changes observed. In this respect, Davies’s (2009) plea for strict register consistency in the compilation of historical corpora deserves to be taken seriously.

---

<sup>1</sup> We gratefully acknowledge that the research reported on in this article was funded by the Interuniversity Attraction Pole (IAP) P6/44 of the Belgian Science Policy on ‘Grammaticalization and (Inter-)Subjectification’ and further supported by grant no. HUM2007-60706/FILO of the Spanish Ministry of Education and Science and the European Regional Development Fund. Van linden’s contribution was also partly funded by the Research Foundation Flanders – FWO (1.2.767.11.N.00). We owe a great debt of gratitude to Dirk Noël, who helped set out the basic research questions of this study. Earlier versions of this paper were presented at IS (Information structure between linguistics and psycholinguistics) 2009 Leuven and at ICHL 19 Nijmegen 2009. We

---

thank the audiences at both conferences for their encouraging comments and helpful suggestions. Our particular thanks go to the three editors and the anonymous referees of the first and second refereeing rounds for their very careful and well-considered comments.

<sup>2</sup> The data in this study are limited to extraposed complement constructions, as these form the only type that occurs throughout all diachronic stages of English. Moreover, *that-* and *to-*clauses in (preverbal) subject position, which first appear in Middle English (cf. Warner 1982: 65, 108; Fischer 1992: 313) are very infrequent and they carry a more marked pattern of information distribution (cf. Kaltenböck 2000).

<sup>3</sup> The synchronic data were extracted from the COBUILD corpus via remote log-in and are reproduced (in each case marked with CB) with the kind permission of HarperCollins Publishers.

<sup>4</sup> It is well-known that the form of the *to*-infinitive has changed over time (cf. Haspelmath 1989; Fischer 2000; Los 2005: 225–30). This was not different in the mandative extraposition construction (Van linden 2009: 159–62), in which, in addition to *to*-infinitives, also *for to*-infinitives were found, as in *Perfore it is good þanne for to stynte fro multitude of wordis* ‘Therefore it is good then to abstain from a multitude of words’ (PPCME a1450 (a1396) Hilton CPerf. (Paris angl.41) 8) (Van linden 2009: 160). *To-* and *for to*-infinitives are generally assigned a common analysis (cf. Fischer 1992: 324). It should be noted that bare infinitives are also found in the mandative adjectival construction (cf. Fischer 1992: 319), albeit it only three times in the Middle English data, as in *Hit is nedeful to hym be wise & warre þat schal an hors bye* ‘It is needful to him that will buy a horse to be wise and mindful’ (PPCME a1450

---

*Treat.Horses* (SIn 2584) 85). These examples are subsumed under the *to*-infinitives in the analyses.

<sup>5</sup> The *for* + NP + *to*-infinitive construction only emerged in the 14th century (see Table 10 below). As argued by, for instance, Fischer (1988, 1992: 330–3) and De Smet (2009: 1743–8), these early examples involve a benefactive *for*-PP (or ‘organic’ *for*) rather than a *for*-PP subject (or ‘inorganic’ *for*) (*contra* Lightfoot 1979: 186–99), cf. (i).

- (i) and alle they that desired the kynges frendship were there / sauynge reynard the  
foxe / the rede false pilgrym whiche laye in a wayte to doo harme / and thoughte  
it was not *good* for hym to be there /
- ‘And all who desired the king’s friendship were there, except Reynard the fox,  
the red false pilgrim who lay in wait to do harm and who thought it was not good  
for him to be there.’ (PPCME 1481 Caxton *Reynard* [OD col.] (Caxton) 51).

Truly unambiguous examples appear only in the 16th century (Fischer 1988; De Smet 2009). However, the question of the syntactic status of the *for*-PP is irrelevant to the present study. What matters is that the *for*-PP contains a possible and accessible candidate for the interpretation of the subject of the *to*-infinitive.

<sup>6</sup> The choice of lexical items reflects the definition of deontic modality adhered to in this study. Traditionally deontic modality has been defined in terms of the notions of obligation and permission, and adjectives that can encode such meanings include *compulsory*, *mandatory*, and *obligatory*. However, more recent accounts have argued that a distinction should be made between obligation and permission on the one hand, and the notion of desirability on the other hand. Thus, Nuyts et al. (2010) argue that the former are illocutionary (directive) notions, pertaining to the interactional system of

---

language, whereas the latter involve attitudinal meaning, which serves to qualify States of Affairs (SoAs). It is in accordance with this new approach to deontic modality that the adjectives studied have been restricted to ones that can be used to assess the desirability of SoAs - without imposing an obligation or granting permission.

<sup>7</sup> Table 2 shows that up to Early Modern English the adjective *good* is far more frequent than all the other adjectives. However, its occurrence in mandative extraposition is not so frequent compared to the total number of attestations. Its distributional development in *that*- and *to*-clauses is also comparable to that found with the other adjectives (see Van linden 2010b). We can thus safely conclude that the data of *good* do not distort the overall picture.

<sup>8</sup> It should be noted that in Late Modern English the queries for *good* and *necessary* were limited to the adjectives immediately followed by *that*, *to* and *for*, as the total number of tokens would otherwise have become unmanageable. For the Present Day English data, we used a query including anticipatory *it* to avoid as much noise as possible.

<sup>9</sup> It can be noted that the examples in (8) and (9) have a different copular form, *bið* and *is* respectively. More details on the characteristics and range of uses of these forms can be found in Petré and Cuyckens (2008) and Wischer (2008).

<sup>10</sup> *That*-clauses predominate more strongly in Late Old English than in Early Old English. We have no explanation for this.

<sup>11</sup> It should be noted that the *that*-complements in later stages of English progressively show fewer unambiguous subjunctive finite forms (cf. Van linden Forthcoming).

However, as detailed in Van linden (2010a: 32–36) the decline of the subjunctive, with

---

its past paradigm being affected first, did not have any bearing on the replacement of the *that*-clause by the *to*-infinitive.

<sup>12</sup> For instance, full NPs give a lot of lexical information and their referents have low accessibility, while pronouns are less informative and have referents which are highly accessible.

<sup>13</sup> The expression of definiteness and indefiniteness has changed over time and has come to be signalled in the way we know now only from the end of Middle English on. In Old English the indefinite article function was still incipient. The indefinite determiners *sum* and *an* were used to introduce new information, but they could also be absent in indefinite NPs, particularly when these were not referential or individualizing (Fischer 1992: 218). To complicate matters further, absence of a determiner with a singular common noun did not necessarily signal indefiniteness (Traugott 1992: 174). Moreover, the demonstrative pronoun *se* (*seo*, *þæt*) ('that') roughly covered 'the domains of both the demonstrative *that* and the definite article *the* in PDE' (Traugott 1992: 172). It was not until Middle English that a clear distinction developed: the invariant form *se/þe* became the general definite article, and the neuter form *þæt* came to function as a pure demonstrative (Fischer 1992: 217). The indefinite article *a(n)*, in turn, became a regular feature of indefinite NPs in Middle English (Fischer 1992: 218). For a summary of the differences between Middle and Present-Day English in the use of articles, see Fischer (1992: 218–21).

<sup>14</sup> Note that the total number of Present-Day English *to*-clauses in Tables 10 and 11 (2038) does not match the total number given in Tables 4, 7 and 9 (2039), because one example has been excluded.



---

<sup>15</sup> De Smet (2005) discusses the register composition of the CLMET, later extended into the CLMETEV.

<sup>16</sup> In our data, all examples involve co-referentiality. As with complex transitives, however, very exceptionally there is no co-referentiality either, as in (ii) below, taken from the Internet.

(ii) He added that it's very *important* to him to ensure that a portion of the profits from sales of the tablets go to something that will make a difference, be it fixing a plumbing problem at a local mosque or feeding hungry children around the world. (<http://www.infocusnews.net/content/view/37107/1127/>, accessed on 16 August 2009)

## Sources

YCOE = *York-Toronto-Helsinki Parsed Corpus of Old English Prose*. Taylor, Ann, Anthony Warner, Susan Pintzuk & Frank Beths (2003). The York-Toronto-Helsinki Parsed Corpus of Old English Prose. York: University of York.

Available at <http://www-users.york.ac.uk/~lang22/YCOE/YcoeHome.htm>

PPCME = *Penn-Helsinki Parsed Corpus of Middle English, Second Edition*. Kroch, Anthony & Ann Taylor (2000). Penn-Helsinki Parsed Corpus of Middle English, second edition. Available at <http://www.ling.upenn.edu/hist-corpora/PPCME2-RELEASE-3/index.html>

PPCEME = *Penn-Helsinki Parsed Corpus of Early Modern English*. Kroch, Anthony, Beatrice Santorini & Lauren Delfs (2004). Penn-Helsinki Parsed Corpus of Early Modern English. Available at <http://www.ling.upenn.edu/hist-corpora/PPCEME-RELEASE-2/index.html>

CLMETEV = Corpus of Late Modern English texts (Extended version). See De Smet (2005, 2008).

CB = *Collins COBUILD Corpus*. Clear, Jeremy, Gwyneth Fox, Gill Francis, Ramesh Krishnamurthy & Rosamund Moon (1996). COBUILD: The State of the Art. *International Journal of Corpus Linguistics* 1(2), 303–14.

## References

Ariel, Mira (1988). Referring and accessibility. *Journal of Linguistics* 24, 65–87.

——(1996). Referring expressions and the +/- coreference distinction. In: *Reference*

- and Referent Accessibility*, edited by Thorstein Fretheim & Jeanette K. Gundel, 13–33. Amsterdam: John Benjamins.
- (2001). Accessibility theory: An overview. In: *Text Representation: Linguistic and Psycholinguistic Aspects* (Human Cognitive Processing 8), edited by Ted Sanders, Joost Schilperoord & Wilbert Spooren, 29–87. Amsterdam/Philadelphia: John Benjamins.
- Burnley, David (1992). Lexis and semantics. In: *The Cambridge History of the English Language, Vol. 2: 1066–1476*, edited by Norman Blake, 409–99. Cambridge: Cambridge University Press.
- Chafe, Wallace L. (1994). *Discourse, Consciousness and Time: The Flow and Displacement of Conscious Experience in Speaking and Writing*. Chicago: University of Chicago Press.
- Davies, Mark (2009). Examining recent syntactic shifts with the Corpus of Contemporary American. Paper presented at ICAME 30, University of Lancaster, 27–31 May 2009.
- Dekeyser, Xavier (1986). Romans loans in Middle English: A re-assessment. In: *Linguistics across Historical and Geographical Boundaries: In Honour of Jacek Fisiak on the Occasion of his Fiftieth Birthday, Vol. 1: Linguistic Theory and Historical Linguistics* (Trends in Linguistics. Studies and Monographs 32), edited by Dieter Kastovsky & Aleksander Szwedek, 253–63. Berlin: Mouton de Gruyter.
- De Smet, Hendrik (2005). A corpus of Late Modern English Texts. *ICAME Journal* 29, 69–82.
- (2007). Nominal gerunds in 16th-century English: The function of the definite

- article. *Folia Linguistica Historica* 28(1–2), 77–113.
- (2008). *Diffusional Change in the English System of Complementation: Gerunds, Participles and For...to-infinitives*. Ph.D. dissertation, University of Leuven.
- (2009). Analyzing reanalysis. *Lingua* 119, 1728–55.
- Du Bois, John (1980). Beyond definiteness: The trace of identity in discourse. In: *The Pear Stories: Cognitive, Cultural and Linguistic Aspects of Narrative Production*, edited by Wallace L. Chafe, 203–74. Ablex: Norwood.
- (2003). Discourse and grammar. In: *The New Psychology of Language*, Vol. 2. *Cognitive and Functional Approaches to Language Structure*, edited by Michael Tomasello, 47–118. Mahwah, NJ: Lawrence Erlbaum Associates.
- Dutch, Robert A. & Peter M. Roget (1970). *Roget's Thesaurus of English Words and Phrases*. London: Longman.
- Fischer, Olga C. M. (1988). The rise of the *for* NP *to* V construction: An explanation. In: *An Historic Tongue: Studies in English Linguistics in Memory of Barbara Strang*, edited by Graham Nixon & John Honey, 67–88. London: Routledge.
- (1992). Syntax. In: *The Cambridge History of the English Language*, Vol. 2: 1066–1476, edited by Norman Blake, 207–408. Cambridge: Cambridge University Press.
- (2000). Grammaticalisation: Unidirectional, non-reversible? The case of *to* before the infinitive in English. In: *Pathways of Change: Grammaticalization in English*, edited by Olga Fischer, Anette Rosenbach & Dieter Stein, 149–69. Amsterdam: John Benjamins.
- Halliday, Micheal A. K. (1978). *Language as Social Semiotic: The Social Interpretation of Language and Meaning*. London: Arnold.

- (1994). *An Introduction to Functional Grammar*. 2<sup>nd</sup> edition. London: Arnold.
- Halliday, Michael A. K. & Ruqaiya Hasan (1976). *Cohesion in English*. London: Longman.
- Haspelmath, Martin (1989). From purposive to infinitive: A universal path of grammaticalization. *Folia Linguistica Historica* 10, 287–310.
- Huddleston, Rodney & Geoffrey Pullum (2002). *The Cambridge Grammar of the English Language*. Cambridge: Cambridge University Press.
- Hyland, Ken (2005). *Metadiscourse*. London: Continuum.
- Kaltenböck, Gunther (2000). *It*-extraposition and non-extraposition in English discourse. In: *Corpus Linguistics and Linguistic Theory: Papers from the Twentieth International Conference on English Language Research on Computerized Corpora*, edited by Christian Mair & Marianne Hundt, 157–75. Amsterdam: Rodopi.
- Kemenade, Ans van & Marit Westergaard (this volume). Syntax and information structure: V2 variation in Middle English.
- Lambrecht, Knud (2000). *Information Structure and Sentence Form: Topic, Focus and the Mental Representations of Discourse Referents*. Cambridge: Cambridge University Press.
- Langacker, Ronald (1991). *Foundations of Cognitive Grammar*, Vol. 2. *Descriptive Application*. Stanford: Stanford University Press.
- Lightfoot, Dwight W. (1979). *Principles of Diachronic Syntax*. Cambridge: Cambridge University Press.
- Los, Bettelou (2005). *The Rise of the To-infinitive*. Oxford: Oxford University Press.
- Lyons, Christopher (1999). *Definiteness*. Cambridge: Cambridge University Press.

- Martin, James (1992). *English Text: System and Structure*. Amsterdam: John Benjamins.
- Mathesius, Vilem (1928). On linguistic characterology. *Actes du premier Congrès International des Linguistes à la Haye*, 56–63.
- Middle English Dictionary* (2002). Edited by Francis McSparren. Michigan: University of Michigan. Available at <http://ets.umdl.umich.edu/m/med/> (Accessed 20 October 2006.).
- Noël, Dirk (2003). Is there semantics in all syntax? The case of accusative and infinitive constructions vs. *that*-clauses. In: *Determinants of Grammatical Variation in English* (Topics in English Linguistics 43), edited by Günter Rohdenburg & Britta Mondorf, 347–77. Berlin: Mouton de Gruyter.
- Nuyts, Jan, Pieter Byloo & Janneke Diepeveen (2010). On deontic modality, directivity, and mood: The case study of Dutch *mogen* and *moeten*. *Journal of Pragmatics* 42, 16–34.
- Oxford English Dictionary* (1989). Edited by John A. Simpson & Edmund S. C. Weiner. Second ed.; (1993–1997), edited by John A. Simpson, Edmund S. C. Weiner & Michael Proffitt. Additions; (2000–), edited by John A. Simpson. Third ed. (in progress, on line). Available at <http://dictionary.oed.com/> (Accessed 3 November 2006.).
- Pedersen, Ted (1996). Fishing for exactness. *Proceedings of the South Central SAS(c) User Group* 96, 188–200.
- Petré, Peter & Hubert Cuyckens (2008). Constructional change in Old and Middle English copular constructions and its impact on the lexicon. *Folia Linguistica Historica* 30, 311–65.

- Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech & David Crystal (1985). *A Comprehensive Grammar of the English Language*. London: Longman.
- Rothwell, William (1998). Arrivals and departures: The adoption of French terminology into Middle English. *English Studies* 79(2), 144–65.
- Taylor, Anne & Susan Pintzuk (this volume). The effect of information structure on object position in Old English: A pilot study.
- Traugott, Elizabeth C. (1992). Syntax. In *The Cambridge History of the English Language: Vol 1: The beginnings to 1066*, edited by Richard M. Hogg, 168–289. Cambridge: Cambridge University Press.
- Thesaurus of Old English*. Available at <http://leo.englang.arts.gla.ac.uk/oethesaurus/> (Accessed 17 October 2006.).
- Van linden, An (2009). *Dynamic, Deontic and Evaluative Adjectives and their Clausal Complement Patterns: A Synchronic-Diachronic Account*. Ph.D. dissertation, University of Leuven.
- (2010a). The rise of the *to*-infinitive: Evidence from adjectival complementation. *English Language and Linguistics* 14(1), 19–51.
- (2010b). The clausal complementation of *good* in extraposition constructions: The emergence of partially filled constructions. In: *English Historical Linguistics 2008: Selected Papers from the Fifteenth International Conference on English Historical Linguistics (ICEHL 15), Munich, 24–30 August 2008, Vol. I: The History of English Verbal and Nominal Constructions* (Current Issues in Linguistic Theory 314), edited by Ursula Lenker, Judith Huber & Robert Mailhammer, 95–120. Amsterdam: John Benjamins.
- (Forthc.). *Mapping Out Deontic Modality: English Adjectival Constructions in*

*Synchrony and Diachrony* [provisional title] (Topics in English Linguistics).

Berlin: Mouton de Gruyter.

Van linden, An & Kristin Davidse (2009). The clausal complementation of deontic-evaluative adjectives in extraposition constructions: a synchronic-diachronic approach. *Folia Linguistica* 43, 171–211.

Warner, Anthony (1982). *Complementation in Middle English and the Methodology of Historical Syntax: A Study of the Wyclifite Sermons*. London: Croom Helm.

Wischer, Ilse (2008). On the use of *beon* and *wesan* in Old English. Paper presented at ICEHL 15, University of Munich, 24–30 August.



Table 1.

The corpora used for each subperiod with their number of words.

Subperiod of English	Time span	Corpus	Number of words (millions)
Old English (OE)	750–1150	<i>York-Toronto-Helsinki Parsed Corpus of Old English Prose (YCOE)</i>	1.45
Middle English (ME)	1150–1500	<i>Penn-Helsinki Parsed Corpus of Middle English, Second Edition (PPCME)</i>	1.16
Early Modern English (EModE)	1500–1710	<i>Penn-Helsinki Parsed Corpus of Early Modern English (PPCEME)</i>	1.79
Late Modern English (LModE)	1710–1920	<i>Corpus of Late Modern English texts (Extended version) (CLMETEV) (De Smet 2005, 2008)</i>	15.01
Present-Day English (PDE)	roughly 1990–1995	<i>Collins COBUILD Corpus (CB) (only British subcorpora)<sup>1</sup></i>	42.10

Table 2.

The adjectives under investigation (cf. Van linden 2009: 63, 2010: 23, Forthcoming b).

Period	Strength	Adjectives
OE (2,335)	weak (2,220)	<i>andfenge</i> ‘suitable’ (23), <i>arlic</i> ‘fitting’ (5), ( <i>ge</i> ) <i>beorh(lic)</i> ‘fitting’ (7), <i>bryce</i> ‘profitable’ (3), ( <i>ge</i> ) <i>cop(lic)</i> ‘proper’ (3), ( <i>ge</i> ) <i>cweme</i> ‘agreeable’ (61), ( <i>ge</i> ) <i>cynde(lic)</i> ‘proper’ (65), <i>cynn</i> ‘becoming’ (7), ( <i>ge</i> ) <i>dafen(lic)</i> ‘proper’ (35), ( <i>ge</i> ) <i>defe(lic)</i> ‘fit’ (5), <i>fremful(lic)</i> ‘useful’ (12), <i>fremgendlic</i> ‘profitable’ (3), <i>geornlic</i> ‘desirable’ (5), <i>god</i> ‘good’ (1,733), ( <i>ge</i> ) <i>limplic</i> ‘fitting’ (17), ( <i>ge</i> ) <i>mæte</i> ‘meet’ (4), <i>medeme</i> ‘proper’ (15), ( <i>ge</i> ) <i>met(lic)</i> ‘fitting’ (13), <i>nyt(t)(lic)</i> ‘useful’ (35), <i>nyttol</i> ‘useful’ (1), <i>nytweorð(e)(lic)</i> ‘profitable’ (35), ( <i>ge</i> ) <i>radlic</i> ‘expedient’ (3), <i>rædlic</i> ‘expedient’ (1), <i>rihtlic</i> ‘proper’ (53), ( <i>ge</i> ) <i>risen(lic)</i> ‘convenient’ (28), ( <i>ge</i> ) <i>screpe</i> ‘suitable’ (4), ( <i>ge</i> ) <i>tæse</i> ‘convenient’ (1), <i>til</i> ‘good, suitable’ (4), <i>þæslic</i> ‘suitable’ (14), ( <i>ge</i> ) <i>þungen</i> ‘virtuous’ (25)
	strong (115)	<i>behef(e)(lic)</i> ‘necessary’ (7), <i>neadwis</i> ‘needful’ (1), <i>niedbeheafdlic</i> ‘necessary’ (1), <i>niedbe(hefe/hof)</i> ‘necessary’ (18), ( <i>ge</i> ) <i>niededlic</i> ‘compulsory’ (1), <i>niedbearf(lic)</i> ‘necessary’ (43), <i>þearf(lic)</i> ‘necessary’ (44)
ME (3,186)	weak (3,067)	<i>able</i> ‘suitable’ (33), <i>aise</i> ‘convenient’ (3), <i>bicumelich</i> ‘becoming’ (28), <i>comely</i> ‘appropriate’ (3), <i>commendable</i> (2), <i>competent</i> ‘suitable, proper’ (3), <i>convenient</i> (8), <i>covenable</i> ‘appropriate’ (30), <i>desiderable</i> ‘desirable’ (5), <i>desirable</i> (1), <i>expedient</i> (5), <i>fremful</i> ‘useful’ (6), <i>good</i> (2,525), <i>goodly</i> ‘proper’ (29), <i>helply</i> ‘useful’ (2), <i>just</i> (30), <i>kendeli</i> ‘proper’ (37), <i>lele</i> ‘proper’ (2), <i>limplic</i> ‘suitable’ (1), <i>medeme</i> ‘proper’ (3), ( <i>i</i> ) <i>mete</i> ‘meet’ (5), <i>profitable</i> (42), <i>proper</i> (4), ( <i>i</i> ) <i>queme</i> ‘agreeable, suitable’ (62), <i>rightful</i> ‘appropriate’ (133), <i>semeli</i> ‘fitting’ (18), <i>servisable</i> ‘suitable’ (2), <i>skilful</i> ‘proper’ (11), <i>vertuous</i> ‘morally good’ (34)
	strong (119)	<i>behef(e)lic</i> ‘necessary’ (20), <i>behofsam</i> ‘profitable, necessary’ (1), <i>behoveful</i> ‘necessary’ (1), <i>behovely</i> ‘necessary’ (4), <i>necessarie</i> (23), <i>needly</i> ‘necessary’ (1), <i>niedful</i> ‘needful’ (69)
EModE (4,640)	weak (3,756)	<i>advantageable</i> (1), <i>appropriate</i> (8), <i>commendable</i> (13), <i>commodious</i> (15), <i>competent</i> (14), <i>convenient</i> (192), <i>covenable</i> (2), <i>desirable</i> (13), <i>expedient</i> (27), <i>fit</i> (288), <i>fitting</i> (11), <i>good</i> (2,438), <i>important</i> (9), <i>just</i> (186), <i>meet</i> (120), <i>pertinent</i> (3), <i>profitable</i> (61), <i>proper</i> (137), <i>rightful</i> (4), <i>servisable</i> (9), <i>shapely</i> (1), <i>skilful</i> (32), <i>suitable</i> (27), <i>useful</i> (38), <i>virtuous</i> (107)
	strong (884)	<i>critical</i> (6), <i>essential</i> (51), <i>indispensable</i> (3), <i>necessary</i> (802), <i>needful</i> (16), <i>vital</i> (6)
LModE (10,780)	weak (7,593)	<i>appropriate</i> (189), <i>convenient</i> (420), <i>desirable</i> (415), <i>expedient</i> (93), <i>fit</i> (951), <i>fitting</i> (81), <i>good</i> (685), <i>important</i> (1,784), <i>meet</i> (51), <i>profitable</i> (172), <i>proper</i> (2,361), <i>suitable</i> (391)
	strong (3,187)	<i>critical</i> (380), <i>crucial</i> (6), <i>essential</i> (553), <i>indispensable</i> (222), <i>necessary</i> (1,623), <i>needful</i> (194), <i>vital</i> (209)
PDE (7,469)	weak (5,150)	<i>appropriate</i> (323), <i>convenient</i> (162), <i>desirable</i> (84), <i>expedient</i> (13), <i>fit</i> (306), <i>fitting</i> (78), <i>good</i> (1,241), <i>important</i> (2,598), <i>profitable</i> (40), <i>proper</i> (150), <i>suitable</i> (155)
	strong (2,319)	<i>critical</i> (120), <i>crucial</i> (193), <i>essential</i> (478), <i>indispensable</i> (16), <i>necessary</i> (1,032), <i>needful</i> (41), <i>vital</i> (439)









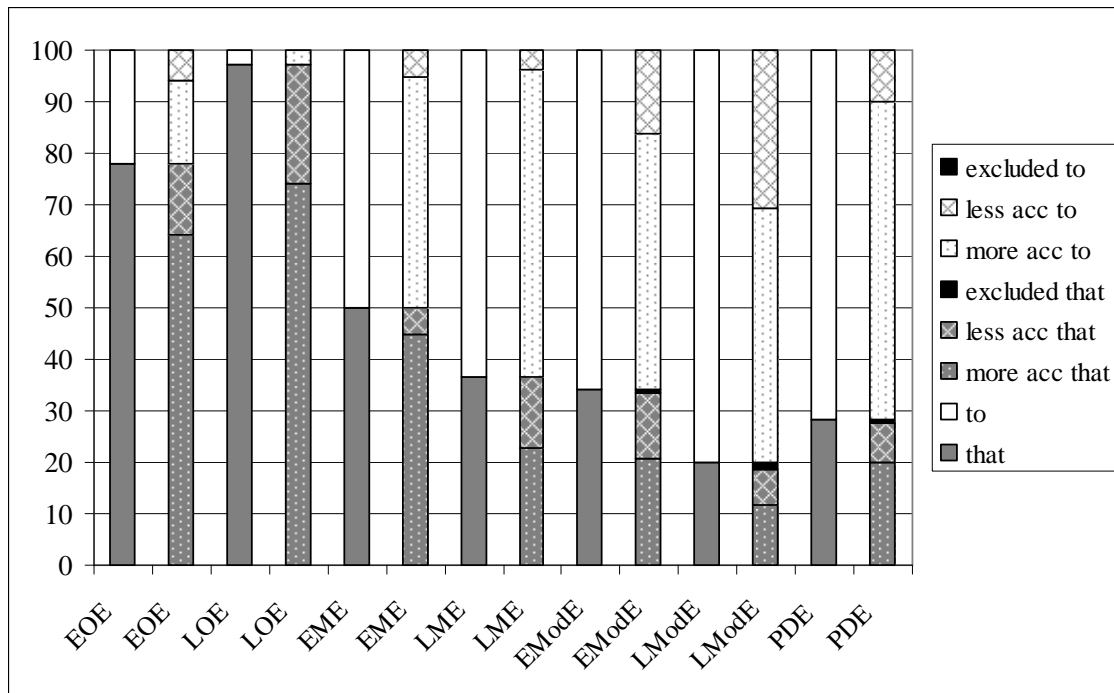


Figure 1.  
The distribution of *that*- and *to*-clauses and the accessibility of their subjects from Old to Present-Day English.

<sup>1</sup> The British COBUILD data include 42,099,593 words from the following subcorpora: ukephem (3,124,354), ukbooks (5,354,262), ukmags (4,901,990), ukspok (9,272,579), bbc (2,609,869), times (5,763,761), today (5,248,302), and sunnow (5,824,476).