ATLANTIS
Journal of the Spanish Association of Anglo-American Studies
37.1 (June 2015): 157-177
ISSN 0210-6124

On the Use of *make to* vs. *make ø* in Early English Medical Writing

Javier Calle-Martín and Jesús Romero-Barranco
Universidad de Málaga
jcalle@uma.es, jromer@uma.es

Object infinitive constructions are the most frequent type of non-finite complement clauses, in which the object infinitive may occur either marked (a *to*-infinitive) or unmarked (a bare infinitive). From a historical viewpoint, the bare infinitive is the preferred form in Old English, the number of examples being comparatively small however. This picture changed in Middle English and especially in early Modern English, when the *to*-infinitive begins to outnumber the bare infinitive in this kind of clause. The verb *make*, among others, is considered to be an exception to this, as it is observed to accept both variants from Middle English, even though it later progressed towards the final adoption of the bare construction in Present-Day English. Fischer associates this development of *make* with the introduction of the verb *cause* into English, which took over the indirect causation formerly expressed by the verb *make*, the latter "slowly finding itself restricted to the bare infinitive, expressing only direct causation" (1997, 127). The present paper investigates the construction *make to* vs. *make ø* in late Middle English and early Modern English medical writing with the following objectives: (a) to analyse the distribution of the marked and the unmarked infinitive with this verb in the period 1350-1700; (b) to classify the phenomenon according to different text types; and (c) to evaluate the contribution of the following factors in the choice of one particular infinitival form: (i) the presence of intervening elements between the verb and the object infinitive; (ii) the size of the object phrase; and (iii) the morphology of the matrix verb. The data used as source of evidence come from the *Corpus of Early English Medical Writing*.

Keywords: bare infinitive; early English medical writing; *make*; object infinitive constructions; *to*-infinitive

. . .

El uso de *make to* frente a *make ø* en el *Corpus of Early English Medical Writing*

En las cláusulas de objeto no finitas, el infinitivo puede aparecer marcado (+TO) o no marcado (-TO). Desde una perspectiva histórica, el Inglés Antiguo prefiere el infinitivo sin *to*, aunque el número de ejemplos es aún bastante escaso. En Inglés Medio se observa, no obstante, un cambio de tendencia que hace que la forma marcada comience a desplazar progresivamente a la variante no marcada. Como resultado de la tendencia anterior, los verbos tuvieron que adaptarse a uno u otro patrón dada la imposibilidad de conservar ambas alternativas. El verbo *make*, sin embargo, conservó los dos tipos de infinitivo hasta principios del período moderno. A la luz de lo anterior, el presente estudio pretende investigar la construcción *make + to* vs. *make + ø* en un corpus de inglés médico con los siguientes objetivos: (a) analizar la distribución de ambas construcciones en el período 1350-1700; (b) clasificar los ejemplos según la tipología del texto; y (c) comprobar la influencia de los siguientes factores en la elección del tipo de infinitivo: (i) la presencia de constituyentes entre el verbo principal y la cláusula objeto; (ii) la complejidad de dicho constituyente; y (iii) la morfología del verbo principal. Los datos del presente estudio proceden del *Corpus of Early English Medical Writing*.

Palabras clave: infinitivo marcado/no marcado; inglés médico; inglés medio tardío; inglés moderno temprano; *make*; cláusulas de objeto no finitas

1. Introduction

Among the different types of non-finite complementation, infinitive clauses are those "commonly used to report intentions, desires, efforts, perceptual states, and various other general actions," and are often expressed through a wide variety of verbs, i.e., speech act verbs (*ask, tell*), cognition verbs (*find, consider*), perception verbs (*see, feel*), verbs of desire (*hope, wish*), verbs of intention (*decide, choose*), verbs of modality or causation (*help, let*), verbs of existence (*appear, happen*), among the most frequent (Biber et al. 1999, 693).[1] In this type of constructions, the infinitive occurs in the complement of verbs and, depending on the verb, it may be either marked (+TO), i.e., a *to*-infinitive, or unmarked (-TO), i.e., a bare infinitive. In Present-Day English the bare infinitive complementation is exclusively restricted to the following types of verbs: (a) verbs of coercive meaning (*have*, *let*, *make*); (b) perceptual verbs of seeing and hearing (*feel*, *hear*, *notice*, *observe*, *overhear*, *see*, *watch*); (c) a residual class comprising the verbs *help* and *know* (Quirk et al. 1985, 1205).

Historically speaking, the use of the marked and the unmarked infinitive can be traced back to the Old English period, where "the two constructions were felt to be perfectly synonymous" (Gaaf 1904, 54; also Mitchell 1985, 874; Visser 1963-1973, 1359-1361; Kageyama 1992),[2] even though the unmarked form is observed to be rare in the period (Los 2005, 42). The ratio of *to*- and bare infinitives remains relatively stable until the late Middle English period, when the latter is observed to decrease drastically. According to Fischer, this change from *ø* to *to* can be explained from a twofold perspective: (a) the on-going diffusion of *to* as an infinitive marker after the disappearance of nominal case forms, which progressively blurred the original difference between *to* and *ø* (1997, 126); and (b) the substitution of *that*-clauses by infinitival complements, which also spearheaded the standardisation of the *to*-infinitive in Middle English (Manabe 1989, 54; Fischer 1996a, 253; Fischer 2000, 162; also Los 2005, 179-190). Although these two syntactic changes definitely contributed to the widespread diffusion of *to* with the majority of verbs in late Middle English, some others still preserve the choice of *ø* and *to*, a fact which has been arbitrarily-explained (Ohlander 1941, 58), lexically-determined (Warner 1982), or syntactically-driven (Fischer 1995, 8-19).[3]

---

[1] The present research has been funded by the Spanish Ministry of Science and Innovation (grant number FFI2014-57963-P) and by the Autonomous Government of Andalusia (grant number P11-HUM7597). These grants are hereby gratefully acknowledged. We would also like to thank Prof. Olga Fischer (University of Amsterdam) for her valuable comments on an earlier version of this article.

[2] The more widespread view is that the use of these constructions "is just a matter of idiosyncratic lexical selection" (Fischer 1996a, 251); however, Fischer explains that Callaway is one of the first linguists opposing the identification of *to*- and bare infinitives establishing "a link between matrix verbs taking dative case (or a PP) and those taking *to*-infinitives, and between verbs taking accusative case and the use of bare infinitives, thereby linking the infinitives to the different case-semantics of dative and accusative" (Callaway 1913, 60-71; Fischer 1996a, 251; also Mitchell 1985, §1549).

[3] Fischer finds it difficult to accept the free variation traditionally found in previous studies, offering a list of factors pointing to the fact that there is a syntactic distinction explaining the use of *to* rather than *ø* in late Middle English: (i) non-simultaneity of tense domains; (ii) non-direct perception; (iii) indirect causation; (iv) non-actuality; (v) *irrealis*; and (vi) passive constructions (Fischer 1995, 6-16).

The early Modern period also witnesses the progressive diffusion of the *to*-infinitive in this type of clause. In some particular cases, however, *ø* is observed to disseminate along with *to* with the same matrix verbs, the list including not only items like *see*, *hear, let* or *make*, which were already in use in Middle English, but also new items like *help* or *wish*, and, by the time of Shakespeare and Dryden, "the dominance of bare infinitives had largely been established" (Iyeiri 2012, 61; also Fanego 1994, 196-197).[4] The diffusion of the unmarked form with these verbs in the early Modern period has often been explained in terms of an analogy with the regular construction with *hear*, *feel* and other similar verbs (Onions 1965, §165; Lind 1983, 264). Kjellmer, however, rejects this argument considering that it would have also influenced other matrix verbs in the period and, in contrast, underlines the wide constructional possibilities of the verb *help*, which "can be assumed to have laid it open to influences in other directions" (1985, 159).[5]

The use of the unmarked form of the infinitive has also been extensively analysed in Present-Day English usage, not only as regards the distribution of independent verbs, with special reference to the verb *help* (McEnery and Xiao 2005, 161-187), but also considering the phenomenon as a whole (Mair 2002, 105-131). In all these studies the bare infinitive is reported to be more widely used in both British and American English, the spoken domain in particular, with a drastic increase in the last decades as a result of the process of Americanisation of British English, especially with the pattern verb + NP + infinitive clause (Biber et al. 1999, 735). Notwithstanding the general trend, there are also syntactic factors that trigger, directly or indirectly, the choice of a particular construction.[6]

Despite the number of contributions to the topic, in our opinion there is still an important gap in the field, especially from a historical perspective, as the phenomenon has been mostly discussed in relation to Old English (Callaway 1913; Mitchell 1985, §1549; Fischer 1996b, 107-133) and Middle English, particularly in registers such as fiction, poetry and correspondence (Jack 1991, 311-341; Fischer 1996a, 247-270; Fischer 1995, 1-30; Manabe 1989; Fischer 1997). To our knowledge, the topic is still in need of more empirical research as regards early Modern English in order to describe the historical development of *to* and *ø* in combination with some specific object-controlling verbs.

The verb *make* is a typical case in point as it shows the concomitant use of both types of infinitives. According to Mittwoch, this verb has traditionally fluctuated between the use of *to* and *ø* in the history of English, as shown in examples 1.a, 1.b, 2.a and 2.b, and

[4] In the particular case of the verb *help*, for instance, "there are isolated instances of the *help (someone) do* type in Middle English, and by the time of Shakespeare it seems to have been well established in the language, although the *help (someone) to do* type is vastly more frequent" (Kjellmer 1985, 158-159).

[5] "The semantic distinctions that can be made today between *help* with a *to*-infinitive and *help* with a bare infinitive are in all probability a secondary development" (Kjellmer 1985, 160).

[6] The following factors are reported to play an active role in the choice of the marked or the unmarked infinitive: (i) an intervening noun phrase increases the proportion of bare infinitives while an adverbial does not; (ii) the presence of a preceding infinitive marker raises the rate of bare infinitives; (iii) the presence of a preceding infinitive marker and an intervening noun phrase/adverbial increases the proportion of *to*-infinitives; (iv) passives exclusively occur with *to*-infinitives; and (v) the inflection of the matrix verb influences the choice of the *to*- or the *ø* infinitive (McEnery and Xiao 2005, 185-186).

therefore more substantial research is needed to explain why the latter has eventually won out (1990, 125).[7] In light of this, the present paper investigates the construction *make to* vs. *make ø* in late Middle English and early Modern English medical writing with the following objectives: (a) to analyse the distribution of the marked and the unmarked infinitive in combination with this verb in the period 1350-1700; (b) to study the distribution of the two variant expressions across the different text types; and (c) to evaluate the contribution of the following factors in the choice of the infinitive: (i) the presence of intervening elements between the matrix verb and the object infinitive, whether nominal, pronominal or adverbial (Kjellmer 1985, 159-160); (ii) the size of the object phrase (Rohdenburg 1996, 158-160); and (iii) the morphology of the matrix verb, whether a finite or a non-finite form (Lind 1983, 265-268; McEnery and Xiao 2005, 182-184).

(1.a) [A]nd *maketh to haue* good odour in the mouthe and *maketh to haue* ferme Flesshe who so wassheth hym often with it (*EMEMT*, Bacon, *Waters Artyfycialles*, 1550, f. 4v).

(1.b) [A]nd make a plaister thereof, and lay it vpon the sinewes that be stiffe, and it *will make them to stretch* (*EMEMT*, Dawson, *Good Huswifes Iewell*, 1596, f. 50v-51r).

(2.a) Now I shall endeavor *to make appear*, that by the common Methods and Medicins of Chirurgeons she is hinder'd, but assisted by mine (*EMEMT*, Colbatch, *Novum Lumen Chirurgicum*, 1698, p. 23).

(2.b) [T]he soul worketh by these spirits, and that in the nerve there is more then a bare faculty of sense and motion required to *make it move and feel*: for in the obstructed nerve there is the faculty still, but not the motion, because the spirits are intercepted. (*EMEMT*, Ross, *Arcana Microcosmi*, 1652, p.20)

According to Voigts' classification, medical writing is divided into academic textbooks, remedy books and surgical books. The vernacularisation of these three types of texts was carried out differently. In the case of academic and surgical treatises, "scientific writing in the vernacular was new and new conventions had to be created" based on Greco-Roman models so as to transfer features of Latin scientific writing to the vernacular (Voigts 1984, 313-335). On the contrary, "the vernacular tradition [of remedies] was long and the conventions of writing were already established in Old English . . . so that the texts are treated with a great deal of freedom" (Taavitsainen and Pahta 1998, 159). This characterisation of medical writing makes it the ideal test bed for investigating ongoing linguistic changes as they are generally manifested differently in the different text types, remedies being of a more colloquial character.

[7] As in other matrix verbs like *help* and *let*, the bare infinitive is more common than the *to*-infinitive both in British English and American English, becoming particularly dominant when there is an intervening noun phrase between the matrix verb and the infinitive clause (Quirk et al. 1985, 1205; Biber et al. 1999, 735).

2. Methodology

The data used as source of evidence come from the two sections of the *Corpus of Early English Medical Writing*: *Middle English Medical Texts* (henceforth *MEMT*), for the historical period 1350-1500 and *Early Modern English Medical Texts* (henceforth *EMEMT*), for the historical period 1500-1700. These corpora have been chosen both on quantitative and qualitative grounds. In quantitative terms, they amount to more than 1.8 million words, which is a sizeable input for the analysis of this type of constructions. The verb *make* presents a widespread distribution in both corpora with more than five hundred occurrences of this object-controlling verb. From a qualitative perspective, on the other hand, the *Corpus of Early English Medical Writing* is organised into three main branches: specialised treatises, surgical treatises and recipe collections,[8] the latter of a more colloquial nature (Pahta and Taavitsainen 2004, 7).

MEMT contains more than half a million words based on both edited medical texts and early printed books from 1350 to 1500. The bulk of these treatises are translations from Latin, dealing with a wide variety of topics, such as ophthalmology, gynaecology, urinoscopy, phlebotomy, epilepsy, syphilis and the plague (Méndez-Naya and Pahta 2010, 193). *EMEMT*, in turn, is a two-million-word corpus of medical writing for the period 1500-1700 covering "the full range of printed medical writing in the early Modern period, with its rich diversity" (Taavitsainen and Tyrkkö 2010a, 57). Following the late Middle English component, *EMEMT* is divided into "theoretical treatises", "surgical and anatomical treatises" and "remedies" (Taavitsainen and Tyrkkö 2010b, 65-66; Pahta and Ratia 2010, 73-74; Marttila 2010, 102-103; Tyrkkö 2010, 119-120). For comparison, the *EMEMT* material has been classified into four subperiods of fifty years each based on the year of printing indicated in the sources. Table 1 below reproduces the word count for the source data.

Table 1. Word count in *MEMT* and *EMEMT*

Corpus	Specialised texts	Surgical texts	Remedies	Total
MEMT	88,349	137,794	219,395	445,538
EMEMT	762,667	298,352	339,068	1,400,087
EMEMT1 1500-1549	59,602	21,910	46,814	128,326
EMEMT2 1550-1599	162,313	102,919	92,405	357,637
EMEMT3 1600-1649	228,135	50,771	71,047	349,953
EMEMT4 1650-1700	312,617	122,752	128,802	564,171

[8] For the sake of comparison, the categories "regimens" and "health guides" together with "philosophical transactions" have been disregarded because they are text types exclusively included in the *EMEMT* component (and not in *MEMT*).

As in previous research on the topic, the present study is concerned with non-coordinated infinitives functioning as the direct object of the matrix verb *make*.[9] The corpora provide a total of 565 instances of the object-controlling verb *make*, of which 217 derive from *MEMT* and 348 belong to *EMEMT*. We have exclusively selected those instances where variation is likely to occur and, for that reason, manual disambiguation was needed in order to eliminate the instances of *make* not followed by an infinitive clause, as shown in example 3 below.

(3) [F]irst of all and before he *make* any far procedynge, to defyne the thing, of the which he pourposeth to entreat. (*EMEMT*, Langton, *Uery Brefe Treatise*, 1547, f. 5r)

3. Analysis

The present section is divided into three parts. The first describes the distribution of the marked and the unmarked infinitive with the verb *make* over time, from 1350 to 1700. The second, in turn, discusses the phenomenon from the perspective of genre variation. The third examines the influence of certain syntactic factors in the choice of *to* or *ø*.

3.1. Chronology

This section assesses the distribution of the marked and the unmarked form of the verb *make* in *MEMT* and *EMEMT*. For the sake of comparison, Table 2 reproduces the results in absolute and relative figures together with normalised frequencies (per 100,000 words). Normalised counts are recommended here in view of the different dimension of *MEMT* and *EMEMT*, thus eliminating any text-length dependency.

Table 2. *Make to* vs. *make ø* in *MEMT* and *EMEMT* over time (n.f.)

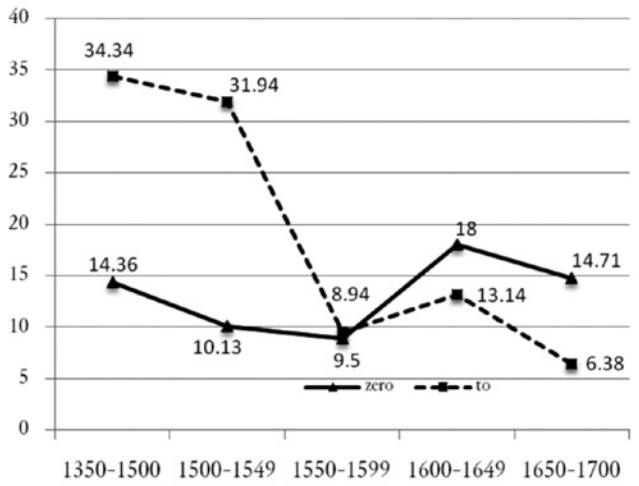
	ø			*to*			Total	
	Raw	%	*n.f.*	Raw	%	*n.f.*	Raw	*n.f.*
MEMT 1350-1500	64	29.4	14.3	153	70.5	34.3	217	48.7
EMEMT1 1500-1549	13	24.07	10.1	41	75.9	31.9	54	42.08
EMEMT2 1550-1599	32	48.4	8.9	34	51.5	9.5	66	18.4
EMEMT3 1600-1649	63	57.7	18	46	42.2	13.1	109	31.1
EMEMT4 1650-1700	83	69.7	14.7	36	30.2	6.3	119	21.09
Total	255			310			565	

[9] The factors triggering infinitive marking with coordinated infinitives have been observed to differ from those operating with non-coordinated infinitives (Fanego 1994, 192; Mustanoja 1960, 514).

According to these data, *to*-infinitives are observed to predominate over *ø* until the mid-sixteenth century, with 34.3 and 14.4 occurrences, respectively, per 100,000 words in the period 1350-1500 and 31.9 and 10.1 occurrences in 1500-1549. This distribution complies with Iyeiri's account of *make* in the fifteenth century as *to*-infinitives are far more frequent than bare infinitives (2012, 62),[10] while Fischer points out that "verbs such as *haten, bidden, let, gar, do* and *maken* are almost always found with the bare infinitive when used as causatives" (1992, 318); however, this argument does not entirely apply to the verb *make* since "bare infinitives are making only very slow progress at the end of the ME period" (Iyeiri 2012, 62).

A sharp fall in the use of *to* is noted from the year 1550, decreasing from 31.9 occurrences per 100,000 words in the period 1500-1549 to only 9.5 in 1550-1599 and later dropping further to 6.4 in 1650-1700. The period 1600-1649, however, shows 13.1 occurrences of the marked form of the verb, a rise that is surely associated with the ongoing diffusion of the construction in remedies. Interestingly enough, this decline of *to* coincides with a significant spread of *ø* towards the beginning of the seventeenth century as it increases to 18 and 14.7 occurrences per 100,000 words in the periods 1600-1649 and 1650-1700, respectively.[11]

Figure 1. *Make to* vs. *make* ø in *MEMT* and *EMEMT* across time (n.f.)

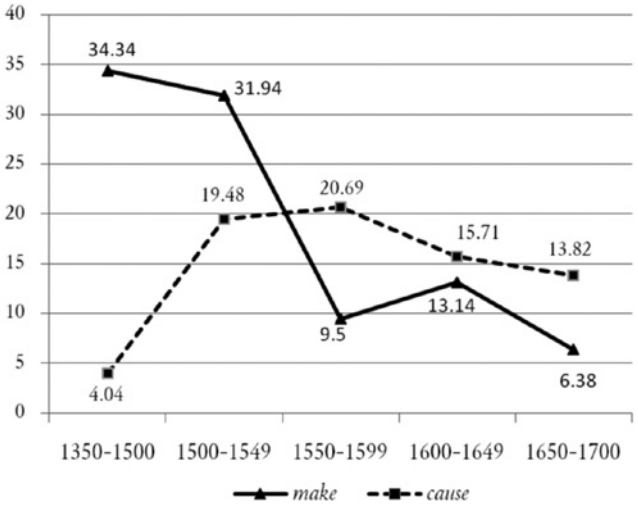


[10] There are, however, some exceptional texts in this respect, such as the late fourteenth century *Mirror of the Blessed Life of Jesus Christ* and *The Cloud of Unknowing*, among others (Iyeiri 2012, 62).

[11] For comparison, the distribution of the marked and the unmarked form of the infinitive with the verb *make* has also been calculated in the *Electronic Text Edition of Depositions* for the period 1560-1700 so as to corroborate these dates with speech-based material (Kytö, Grund and Walker 2011). This input also reveals a very drastic demise in the use of *to* from the second half of the sixteenth century on, together with the progressive rise of *ø* towards the year 1700.

In the course of Middle English when "the nominal case forms became indistinct . . . and when at the same time *to* began to develop into more of an infinitive marker, the original grammatical difference between *to*- and *ø*-infinitives became blurred" (Fischer 1997, 126; also Mustanoja 1960, 514). As a result of this process, a number of Middle English verbs required a choice between the marked and the unmarked infinitive as it was not possible for the same verb to select both the *to* and the *ø* infinitive (Fischer 1997, 131).[12] The verb *make*, along with certain others, is an exception to this, as it is found to accept both types of constructions from the Middle English period onwards (Visser 1973, 2261).

Figure 2. The development of the verbs *make* and *cause* followed by the marked infinitive (n.f.)



On historical grounds, the verb *make* has progressively developed towards the eventual adoption of *ø* to such an extent that in Present-Day English the use of the *to*-infinitive is significantly restricted to passive constructions such as *he was made to* . . . and the like (Rohdenburg 1996, 157; Quirk et al. 1985, 1206; Fischer 1997, 131). According to Fischer, the ongoing diffusion of *ø* in combination with the verb *make* may be justified from a lexical point of view as a result of the introduction of the verb *cause* into English towards the year 1385 (*MED* s.v. *causen* v.1-I; *OED* s.v. *cause*, v. I). This verb progressively took over the indirect causation formerly expressed by the verb *make*, the latter "slowly finding itself restricted to the bare infinitive, expressing only direct

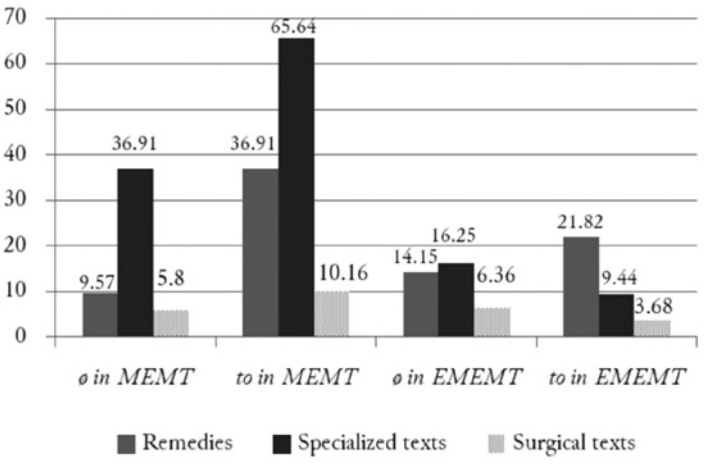
[12] According to Fischer (1997, 131), there are still a few relic exceptions, as in the case of the verb *help*. See Visser for a comprehensive list of these types of verbs: (a) verbs of physical perception; (b) verbs of causing; (c) verbs of inducing and forcing; (d) verbs of allowing and hindering; (e) verbs of wishing; (f) verbs of liking and disliking; (g) verbs of commanding and forbidding; (h) verbs of mental perception; (i) verbs of teaching; and (j) verbs of saying and declaring (1973, 2250-2265).

causation" (Fischer 1997, 127). Figure 2 reproduces the occurrence of the verbs *make* and *cause* followed by the marked form of the infinitive in the *Corpus of Early English Medical Writing*. As shown, the effect described by Fischer is confirmed insofar as the verb *make* begins to decline after the year 1350 with a sharp fall in the historical period 1500-1549. This coincides with the rise of the verb *cause* in the latter part of Middle English, to such an extent that towards the mid-sixteenth century it has already displaced *make* for the expression of indirect causation (20.7 and 9.5 occurrences per 100,000 words in the period 1550-1599 and 13.8 and 6.4 in the period 1650-1700, respectively).[13]

3.2. Genre variation

The distribution of *make to* and *make ø* has also been classified according to the three main categories of *MEMT* and *EMEMT*: "theoretical treatises," "surgical and anatomical treatises" and "remedies." In view of the different length of each category, the figures have also been normalised to a text of 100,000 words for comparison.

Figure 3. *Make to* vs. *make ø* in *MEMT* and *EMEMT* according to text types (n.f.)



As shown in Figure 3, the *MEMT* component presents an overwhelming preference for *to* across the different text types, remedies in particular, since *to* is found over three times more often than *ø* with 36.9 and 9.6 occurrences per 100,000 words, respectively. Specialised and surgical texts, in turn, also present a more widespread diffusion of *to*, since it approximately doubles *ø*. Specialised texts, for instance, show 65.6 and 36.9 occurrences of *to* and *ø* whilst the phenomenon is somewhat less frequent in surgical texts with 10.2 and 5.8 occurrences per 100,000 words.

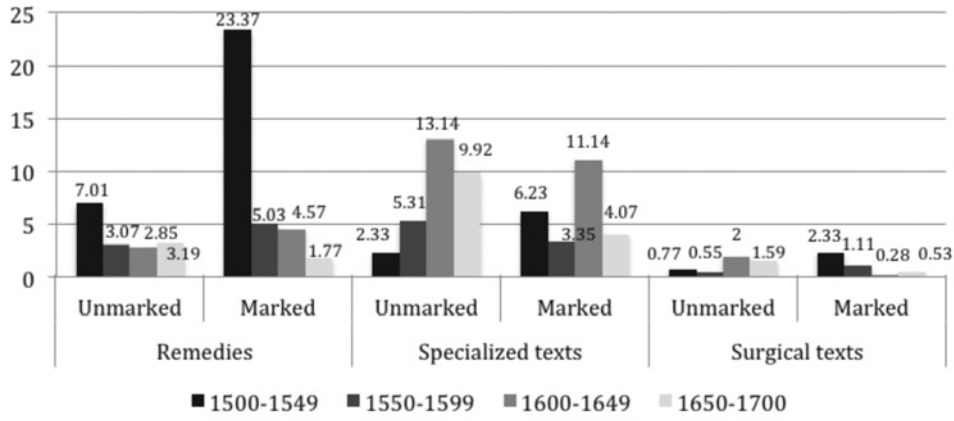
[13] Citing Churchill's *A New Grammar of the English Language* (1823), Visser acknowledges that the verb *cause* without the infinitive marker *to* has been traditionally considered a Scotticism (1973, 2256).

The *EMEMT* component, on the other hand, presents a slightly different state of affairs, with a more widespread diffusion of *ø* both in specialised and surgical texts, the former in particular. In contrast, the marked infinitive still outnumbers the bare infinitive in remedies, with 21.8 and 14.2 occurrences, respectively. The data obtained point to the fact that the dissemination of *ø* behaves differently across the different text types. Even though *ø* exceeds *to* in those texts written for a more learned audience (i.e., specialised and surgical texts), remedy collections are still more prone to the use of the *to*-infinitive.

These figures, however, provide us with a distorted image of the phenomenon in early English medical writing. If the early Modern period is taken as a whole, the systematic adoption of the *to*-infinitive in the first fifty-year subperiod considerably blurs the distribution of the phenomenon in the seventeenth century. For the sake of accuracy, Figure 4 reproduces this distribution in the different text types across time, where an ongoing diffusion of *ø* in the different text types, albeit with a different chronology, is observed. Even though the proliferation of *ø* was particularly active from 1550 in the case of specialised and surgical texts (the former with 5.3 and 3.4 occurrences of *ø* and *to*, respectively), *ø* does not outnumber *to* until 1650 in recipe collections, approximately one hundred years later.

The faster spread of *ø* in specialised treatises is hard to justify, especially if compared with the recipe collection, a text type which is often the prototypical recipient of syntactic changes in progress (Calle-Martín and Romero-Barranco 2014, 1-16). The target audiences of specialised treatises "range[d] from academic specialists to the widest popular readership" (Taavitsainen et al. 2011, 23), and perhaps this factor may have also contributed to the wider diffusion of *ø* in this typology of medical texts.

Figure 4. Development of *make to* and *make ø* in *EMEMT* according to text types (n.f.)



3.3. Conditioning factors

This section assesses the contribution of the following syntactic factors in the choice of bare and *to* infinitives with the matrix verb *make*: (a) the typology of intervening elements between the matrix verb and the infinitive, distinguishing whether a noun phrase, a pronominal or an adverbial intervenes; (b) the size of the object phrase; and (c) the morphology of the matrix verb *make*, considering the different forms of its conjugation, both finite forms (i.e., the present past or indicative) and non-finite forms (i.e., the infinitive or the *-ing* form).

3.3.1. Presence of intervening elements between the matrix verb and the object infinitive

This section investigates the typology of intervening elements that occur between the matrix verb and the object infinitive and which, in one way or another, trigger the choice of *to* or *ø* in these environments. It has been pointed out elsewhere that "*to*-infinitives are favoured when the matrix verb is separated from the complement by intervening elements" (Iyeiri 2012, 64; Warner 1982, 127). For instance, in Lind's analysis of the distribution of *help to*/*help ø* in a selection of detective novels (1983, 265-268), *ø* predominates (63.3% and 36.6%, respectively) whenever a noun phrase appears between the matrix verb and the object infinitive. However, it is not known how many of those noun phrases were actually pronominals, and therefore we are unable to check the likely influence of noun phrases or pronominals in these contexts.

Tables 3 and 4 show the distribution of the phenomenon in our data depending on whether a noun phrase, a pronominal or an adverbial appear in between the matrix verb and the object infinitive. In the late Middle English component (*MEMT*), the widespread adoption of *to* in these environments does not allow us to detect any likely influence of the typology of the intervening element. As shown, *to* predominates over *ø* both with and without intervening elements, irrespective of whether noun phrases, pronominals or adverbials are involved. Of these, noun phrases are slightly more prone to the use of the *to*-infinitive than pronominals (74.2% and 62.1%, respectively). When an adverbial is involved, *to* also prevails. In this same fashion, the absence of intervening elements also points to a wider diffusion of the *to*-infinitive construction (61.9%).

Table 3. Intervening elements between the matrix verb and the object infinitive in *MEMT* (%)

	Ø		*to*		
	Raw	%	Raw	%	Total
Noun phrase	25	24.7	76	74.2	101
Pronominal	31	37.8	51	62.1	82
Adverbial	0	0	13	100	13
No intervening element	8	38.1	13	61.9	21

The early Modern English component shows a more revealing picture. A noun phrase does not seem to be a decisive factor contributing to the choice of *to* or *ø* since a balanced distribution of both types is obtained, *to* slightly predominating over *ø* (57.3% and 42.6%, respectively). Pronominals and adverbials, on the other hand, exert a more active role. While *ø* is mostly preferred when a pronominal appears between the matrix verb and the infinitive clause (with a rate of 83.6% in the corpus), *to* is more likely to appear when an adverbial intervenes (63.1%). Concomitantly, the absence of intervening elements also plays an important role, *to* being the preferred form in these environments (83.3%).

Table 4. Intervening elements between the matrix verb and the object infinitive in *EMEMT* (%)

	Ø		*to*		Total
	Raw	%	Raw	%	
Noun phrase	78	42.6	105	57.3	183
Pronominal	102	83.6	20	16.3	122
Adverbial	7	36.8	12	63.1	19
No intervening element	4	16.6	20	83.3	24

This picture does not exactly tally with the distribution of *to* and *ø* with the verb *help* in Present-Day English. Even though Lind's pioneering study provides us with a higher degree of omission with an intervening nominal (1983, 269), Kjellmer later demonstrated (a) that there is not such general tendency in the LOB corpus as *to*-infinitives are generally preferred, irrespective of an intervening nominal or not; and (b) that "the ratios of *help* + nominal to *help* + no nominal are in each case higher for the bare infinitives than for the *to*-infinitives" (1985, 158).[14]

3.3.2. The size of the object phrase

The choice of the marked and the unmarked infinitive with the verb *make* has often been interpreted in terms of metrical needs, the unmarked form being "often used in verse and poetic prose" (Visser 1973, 2261). Even though this was Rohdenburg's initial suspicion in his analysis of fourteen early Modern English narrative texts, he was later convinced that the guiding factor depended upon the size or complexity of the object expression in the sense that "object phrases followed by marked infinitives contain twice as many words as those associated with unmarked infinitives" (Rohdenburg 1996, 158). In essence then, it is a cognitive process which dictates whether to insert the infinitive marker depending upon the syntactic complexity of the intervening noun phrase.

[14] These studies do not distinguish whether an actual noun phrase, pronominal or adverbial, appears in that syntactic environment.

Table 5. Average number of words of the object phrase in *MEMT* and *EMEMT*

		Raw	*Average number of words*
MEMT	*ø*	64	1.3
	to	153	1.7
EMEMT	*ø*	191	1.4
	to	157	2.1

Table 5 reproduces the average number of words of the object phrase in the corpus. The figures obtained tentatively validate the active role of syntactic complexity in the selection of the infinitive marker. In spite of the systematic adoption of the *to*-infinitive in the late Middle English component, the data confirm a wider diffusion of *to* depending on the complexity of the intervening noun phrase, 1.7 and 1.3 words with *to* and *ø*, respectively.

The early Modern English component, on the other hand, witnesses the rise of the unmarked form of the infinitive with the verb *make*, therefore giving room for the syntactic competition of both constructions in the period. It is precisely in this context where the average number of words of the object phrase is observed to play a more decisive role inasmuch as the average number of words of the intervening noun phrase nearly doubles that of *ø* (2.1 and 1.4 words, respectively), as shown in the following instances:

(4) [H]alfe breathlesse, and almost speechlesse, looking very ghastly; which made many inquire the cause; which as soone as hee could make them understand, some boldly ventur'd in, and found nothing but a Fawne, that had been tyed up in the Garden (*EMEMT*, Bradwell, *Physick for the Plagve*, 1636, p. 93)

(5) But Hee that commandeth their course, and altereth them at his pleasure: Hee that made the Sunne and Moone to stand still for Iosuah, yea drew the Sunne tenne degrees backe for Hezekiah, and caused the Starres to. (*EMEMT*, Bradwell, *Physick for the Plagve*, 1636, p. 10)

Even though the complexity principle is corroborated in the majority of the corpus instances, it must also be noted that there are some sporadic exceptions to this rule. Example 6, for instance, renders an unmarked infinitive with a complex noun phrase, while example 7, in turn, shows a marked infinitive with a single intervening element. Even though these constructions are scant in our data, they slightly distort the figures since the difference between longer and shorter clauses would have been somewhat greater.

(6) Let none of them be found among you, that maketh his sonne, or his daughter go through the fire, or that vseth witchcrafte, or is a regarder of times. (*EMEMT*, Brasbridge, *Poore Mans Iewel*, 1578, p. 19)

(7) [O]ur medicine, which shall be applyed, so much ye more or lesse drying, but the Empericks truely if any medicine applyed doth not make flesh to grow, hee verely beholdeth, but yet being ignorant, whether that springeth because his medicine dryeth to little or much. (*EMEMT*, Galen, *Methodus Medendi*, 1586, f. 48v)

3.3.3. The morphology of the matrix verb

This section explores the influence of the morphology of the verb in the selection of the infinitive, distinguishing the non-finite forms (i.e., *to make* and *making*) together with the finite forms *make* (present tense), *makes* (3rd person singular) and *made* (including both the simple past and the past participle). Table 6 reproduces the results in absolute and relative figures.

Table 6. Morphology of the matrix verb in *MEMT* and *EMEMT*

	MEMT					*EMEMT*				
	ø		*to*		Total	*ø*		*to*		Total
	Raw	%	Raw	%		Raw	%	Raw	%	
To make	12	60	8	40	20	39	65	21	35	60
Making	0	0	3	100	3	3	60	2	40	5
Make	40	34.4	76	65.5	116	88	59.8	59	40.1	147
Makes	9	14.1	55	85.9	64	39	39.8	59	60.2	98
Made	3	21.4	11	78.5	14	21	57.8	16	42.1	37

The Middle English component presents a more widespread diffusion of the *to*-infinitive regardless of the morphology of the verb, with the only exception of the infinitive form (*to make*), plausibly as an attempt to avoid the euphony, "two *to*'s [*sic*] being felt as repetitive" (Kjellmer 1985, 159; also Aitchison 1994, 25-27). This shows that morphological differences themselves are not relevant, but only the echo caused by the repetition of *to*. Special attention must be paid, however, to the use of *to* with the 3rd person singular form *makes,* totalling 85.9%, followed by the perfective form *made* with 78.5% and the present form *make* representing 65.5%.

In *EMEMT*, *ø* is again more likely to occur with the infinitival form *to make*, representing 65% of the instances. These results tally with the distribution of *help* in Present-Day English inasmuch as this verb is clearly reluctant to take a *to*-infinitive when the matrix verb is in the infinitive mood to avoid the use of two *to*s in a sequence (Kjellmer 1985, 159-160; also Lind 1983, 266).[15] The inflected form *making*, in turn, presents a very limited occurrence in the corpus with just five instances, three of them with *ø* and two with the marked form.

[15] In this same vein, Kjellmer also formulates why this verb might have been influenced by euphony and combinations like *to try to*, *to start to*, etc. have not followed the same development. Unlike these two verbs, the verb *help* shows a higher level of variability and therefore less resistance to new constructional variants. Thus, "once the new pattern *help someone do* had arisen, *help* became constructionally like *see, hear, make,* and like them it came to take a *to*-infinitive in the passive voice" (Kjellmer 1985, 160).

When the verb *make* appears in a finite form, the percentages are not particularly important. The base form *make* (either in the present tense or after an auxiliary verb) is chosen over *ø* in 59.8% of the instances. The inflected form *makes*, in turn, is more prone to the use of *to* (60.2% in our data).[16] When the matrix verb is in the simple past and the present perfect, *ø* is preferred over *to* in 57.8% of the cases in our data.

4. Summary and conclusions

The present paper has investigated the use of *to* and *ø* in combination with the verb *make* in corpora of late Middle English and early Modern English medical writing, paying particular attention to their distribution both across time (1350-1700) and across different textual categories (in terms of the traditional classification into general treatises, specialised treatises and remedy collections). The study has analysed the occurrence of the marked and the unmarked infinitive in combination with the verb *make* in the *Corpus of Early English Medical Writing*, which has provided us with a total of 565 infinitive clauses. These data have allowed us to reach the following conclusions.

The early Modern period marks a transitional period in the development of the verb *make* in combination with an object infinitive clause. From a chronological perspective, the marked form is observed to decline sharply towards the mid-sixteenth century, which coincides with a significant diffusion of the *ø* form towards the beginning of the seventeenth century. According to Fischer (1997, 127), this rise of *ø* is associated with the introduction of the verb *cause* in English, which progressively subsumed the indirect causation hitherto expressed by the verb *make*, the latter then being restricted to the unmarked form to express direct causation.

Even though there is a noticeable use of *to* across the different text types in late Middle English medical writing, the early Modern English component corroborates the ongoing diffusion of *ø* in the different text types, but following different time scales. The proliferation of *ø* is dated towards the year 1550 in the case of specialised and surgical texts but the phenomenon is not witnessed in remedy collections until the mid-seventeenth century, approximately one hundred years later. This different chronology is difficult to justify especially in the light of the more colloquial character of remedies, which are in principle the prototypical recipient of these ongoing morphosyntactic changes.

The third part of the work examines the likely influence of the so-called conditioning factors to determine whether they play an active role in the use of the marked or the unmarked form of the infinitive as confirmed in other types of writing. Two factors are

[16] In his analysis of the verb *help* in present day English, Lind also notes the wider distribution of the *to*-infinitive in this environment (1983, 266-268). However, Kjellmer later demonstrated that Lind's results depended upon the corpus inasmuch as Kjellmer's analysis of the LOB and BROWN corpora led him to conclude that *ø* is the preferred form, irrespective of the morphology of the verb in the present tense (1985, 157).

found to have a bearing on the choice of the infinitival form. Cognitive complexity is the underlying mechanism which in many cases triggers the choice of one particular infinitive, assuming that "more explicit variants are preferred in more complex environments" (Rohdenburg 1996, 173).[17]

The present study has shown, firstly, that the typology of intervening elements between the verb *make* and the infinitive clause directly or indirectly triggers the use of *to* or *ø*, in the early Modern English period in particular. Even though an intervening noun phrase is not observed to be a decisive factor, the unmarked form is noted to diffuse more widely when there is a pronominal between the matrix verb and the infinitive. On the contrary, the marked form is more likely to occur when an adverbial splits the verb and the infinitive. With a non-intervening element, the infinitive marker *to* noticeably predominates over *ø* in our data. This preference may be interpreted as a result of cognitive complexity in the sense that the *distance principle* determines that any insertion between the matrix verb and the subject of the infinitive clause substantially favours the more explicit variant (Rohdenburg 1996, 166-197). In the particular case at hand, pronominals are usually monosyllabic words with a light syntactic weight, especially if compared with adverbials that consist of longer phrases separating the matrix verb and the infinitive. This then explains the widespread diffusion of the *to*-infinitive when an adverbial appears in that environment.

Secondly, the size or complexity of the object phrase has also been examined to determine whether it contributes to the choice of the marked and the unmarked form of the infinitive. The *complexity principle*, also known as the *transparency principle*, according to Rohdenburg, postulates that in the case of grammatical options "the more explicit ones will tend to be favoured in cognitively more complex environments" (1996, 151). In the light of this cognitive process, the present study tentatively supports the idea that the greater the complexity of the phrase, the more likely the *to*-infinitive is to occur, as the average number of words of the object phrase is 1.7 and 2.1 words in *MEMT* and *EMEMT*, respectively.

Thirdly, this study has also analysed the role of the morphology of the verb in the choice of the infinitival form. Our data tentatively show that morphological differences are not relevant in the choice of the infinitive. It is only the echo caused by the repetition of *to* which contributes to the selection of the bare infinitive. Thus, while the unmarked form is more widespread when the verb *make* appears in the infinitive mood in order to avoid the likely repetition of two *to*s in a series, the other morphological forms do not present significant tendencies.

[17] In a recent article, cognitive complexity is also found to be the triggering factor in the choice of *that* and *ø* in a corpus-based investigation of complement clauses in early English medical writing (Calle-Martín and Romero-Barranco 2014, 1-16).

Sources

EMEMT = *Early Modern English Medical Texts*. 2010. Compiled by Irma Taavitsainen, Päivi Pahta, Turo Hiltunen, Martti Mäkinen, Ville Marttila, Maura Ratia, Carla Suhr and Jukka Tyrkkö. CD-ROM with EMEMT Presenter software by Raymond Hickey. Amsterdam and Philadelphia: John Benjamins.

ETED = *An Electronic Text Edition of Depositions 1560-1760* (ETED). 2011. Edited by Merja Kytö, Peter J. Grund and Terry Walker. Available on the CD accompanying *Testifying to Language and Life in Early Modern England* by Merja Kytö, Peter J. Grund and Terry Walker. Amsterdam and Philadelphia: John Benjamins.

MEMT = *Middle English Medical Texts*. 2005. Compiled by Irma Taavitsainen, Päivi Pahta and Martti Mäkinen. CD-ROM with MEMT Presenter software by Raymond Hickey. Amsterdam and Philadelphia: John Benjamins.

Works Cited

AITCHISON, Jean. 1994. "'Say, Say It Again Sam': The Treatment of Repetition in Linguistics." *SPELL: Swiss Papers in English Language and Literature* 7: 15-34.

BIBER, Douglas, Stig Johansson, Geoffrey Leech, Susan Conrad and Edward Finegan. 1999. *Longman Grammar of Spoken and Written English*. London: Longman.

CALLAWAY, M. 1913. *The Infinitive in Anglo-Saxon*. Washington: Carnegie Institution.

CALLE-MARTÍN, Javier and Jesús Romero-Barranco. 2014. "On the Use of *that*/ø as Object Clause Links in Early English Medical Writing." *Studia Neophilologica* 89 (1): 1-16.

FANEGO, Teresa. 1994. "Infinitive Marking in Early Modern English." In *Papers from the 7th International Conference on English Historical Linguistics*, *Valencia, 22-25 September 1992*, edited by Francisco Fernández, Miguel Fuster and Juan José Calvo, 191-203. Amsterdam and Philadelphia: John Benjamins.

FISCHER, Olga. 1992. "Syntax." In *The Cambridge History of the English Language. Volume II. 1066-1476,* edited by Norman Blake, 207-408. Cambridge: Cambridge UP.

—. 1995. "The Distinction between *to* and Bare Infinitival Complements in Late Middle English." *Diachronica* 12: 1-30.

—. 1996a. "Verbal Complementation in Early ME: How Do the Infinitives Fit in?" In *Papers from the 8th International Conference on English Historical Linguistics*, edited by Derek Britton, 247-70. Amsterdam: John Benjamins.

—. 1996b. "The Status of *to* in Old English *to*-infinitives: A Reply to Kageyama." *Lingua* 99: 107-33.

—. 1997. "Infinitive Marking in Late Middle English: Transitivity and Changes in the English System of Case." In *Studies in Middle English Linguistics*, edited by Jacek Fisiak, 109-34. Berlin: Mouton de Gruyter.

—. 2000. "Remarks on the De-grammaticalization of Infinitival *to* in Present-Day American English." In *Pathways of Change. Grammaticalization in English*, edited

by Olga Fischer, Anette Rosenbach and Dieter Stein, 149-69. Amsterdam and Philadelphia: John Benjamins.

Gaaf, W. van der. 1904. "Some Remarks on *þencan* and its M.E. and Mod.E. Representatives." *Englische Studien* 34: 52-62.

Iyeiri, Yoko. 2012. "The Complements of Causative *make* in Middle English." In *Middle and Modern English Corpus Linguistics. A Multi-dimensional Approach*, edited by Manfred Markus, Yoko Iyeiri, Reinhard Heuberger and Emil Chamson, 59-74. Amsterdam: John Benjamins.

Jack, G. 1991. "The Infinitive in Early Middle English Prose." *Neuphilologische Mitteilungen* 92: 251-99.

Kageyama, Taro. 1992. "AGR in Old English *To*-Infinitives." *Lingua* 88: 91-128.

Kjellmer, Göran. 1985. "*Help to*/*help ø* Revisited." *English Studies* 66 (2): 156-61.

Kurath, Hans, Sherman M. Kuhn and Robert E. Lewis, eds. 1952-2001. *Middle English Dictionary*. Ann Arbor: U of Michigan P. Online version in *Middle English Compendium*. Edited by Frances McSparran and Paul Scaffner. University of Michigan Digital Library Production Service, 2001. http://quod.lib.umich.edu/m/med [MED].

Kytö, Merja, Peter J. Grund and Terry Walker. 2011. "Introduction." In *Testifying to Language and Life in Early Modern England*, edited by Merja Kytö, Peter J. Grund and Terry Walker, 1-14. Amsterdam and Philadelphia: John Benjamins.

Lind, Åge. 1983. "The Variant Forms *help*/*help ø*." *English Studies* 64 (3): 263-73.

Los, Bettelou. 2005. *The Rise of the To-Infinitive*. Oxford: Oxford UP.

Mair, Christian. 2002. "Three Changing Patterns of Verb Complementation in Late Modern English: A Real-Time Study Based on Matching Text Corpora." *English Language and Linguistics* 6 (1): 105-31.

Manabe, Kazumi. 1989. *The Syntactic and Stylistic Development of the Infinitive in Middle English*. Fukuoka: Kyushu UP.

Marttila, Ville. 2010. "Recipe Collections and Materia Medica." In *Early Modern English Medical Texts. Corpus Description and Studies*, edited by Irma Taavitsainen and Päivi Pahta, 101-9. Amsterdam and Philadelphia: John Benjamins.

McEnery, Anthony and Zhonghua Xiao. 2005. "HELP and HELP to: What Do Corpora Have to Say?" *English Studies* 86 (2): 161-87.

Méndez-Naya, Belén and Päivi Pahta. 2010. "Intensifiers in Competition. The Picture from Early English Medical Writing." In *Early Modern English Medical Texts. Corpus Description and Studies*, edited by Irma Taavitsainen and Päivi Pahta, 191-213. Amsterdam: John Benjamins.

Mitchell, Bruce. 1985. *Old English Syntax*. 2 vols. Oxford: Clarendon Press.

Mittwoch, Anita. 1990. "On the Distribution of Bare Infinitive Complements in English." *Journal of Linguistics* 26: 103-31.

Murray, James A. H., Henry Bradley, William A. Craigie and Charles T. Onions, eds. 1884-1928. *The Oxford English Dictionary*. 2nd ed. 1989. Online edition. Edited by

John A. Simpson, Michael Proffitt et al., 3rd ed. 2000. Oxford: Oxford UP. http://www.oed.com/ [OED].

Mustanoja, Tauno. 1960. *A Middle English Syntax. Part I: Parts of Speech*. Helsinki: Société Néophilologique.

Ohlander, Urban. 1941. "A Study on the Use of the Infinitive Sign in Middle English." *Studia Neophilologica* 14: 58-66.

Onions, Charles T. 1965. *An Advanced English Syntax Based on the Principles and Requirements of the Grammatical Society*. London: Swan Sonnenschein.

Pahta, Päivi and Irma Taavitsainen. 2004. "Vernacularisation of Scientific and Medical Writing in its Sociohistorical Context." In *Medical and Scientific Writing in Late Medieval English*, edited by Irma Taavitsainen and Päivi Pahta, 1-22. Cambridge: Cambridge UP.

Pahta, Päivi and Maura Ratia. 2010. "Treatises on Specific Topics." In *Early Modern English Medical Texts. Corpus Description and Studies*, edited by Irma Taavitsainen and Päivi Pahta, 73-99. Amsterdam and Philadelphia: John Benjamins.

Quirk, Randolph, Sydney Greenbaum, Geoffrey Leech and Jan Svartvik. 1985. *A Comprehensive Grammar of the English Language*. London and New York: Longman.

Rohdenburg, Günter. 1996. "Cognitive Complexity and Increased Grammatical Explicitness in English." *Cognitive Linguistics* 7: 149-82.

Taavitsainen, Irma and Jukka Tyrkkö. 2010a. "The Field of Medical Writing with Fuzzy Edges." In *Early Modern English Medical Texts. Corpus Description and Studies*, edited by Irma Taavitsainen and Päivi Pahta, 57-61. Amsterdam and Philadelphia: John Benjamins.

—. 2010b. "General Treatises and Textbooks." In *Early Modern English Medical Texts. Corpus Description and Studies*, edited by Irma Taavitsainen and Päivi Pahta, 65-72. Amsterdam and Philadelphia: John Benjamins.

Taavitsainen, Irma and Paivi Pahta. 1998. "Vernacularization of Medical Writing in English: A Corpus-Based Study of Scholasticism." *Early Science and Medicine* 3: 157-85.

Taavitsainen, Irma, Peter Murray Jones, Päivi Pahta, Turo Hiltunen, Ville Marttila, Maura Ratia, Carla Suhr and Jukka Tyrkkö. 2011. "Medical Texts in 1500-1700 and the *Corpus of Early Modern English Medical Texts*." In *Medical Writing in Early Modern English*, edited by Irma Taavitsainen and Päivi Pahta, 9-29. Cambridge: Cambridge UP.

Tyrkkö, Jukka. 2010. "Surgical and Anatomical Treatises." In *Early Modern English Medical Texts. Corpus Description and Studies*, edited by Irma Taavitsainen and Päivi Pahta, 119-26. Amsterdam and Philadelphia: John Benjamins.

Visser, F. Theodorus. 1973. *An Historical Syntax of the English Language*. 3 vols. Leiden: Brill.

Voigts, Linda Ehrsam. 1984. "Medical Prose." In *Middle English Prose: A Critical Guide to Major Authors and Genres*, edited by A. S. G. Edwards, 315-35. New Brunswick, NJ: Rutgers UP.

WARNER, Anthony R. 1982. *Complementation in Middle English and the Methodology of Historical Syntax*. London: Croom Helm.

Received 1 July 2014 Revised version accepted 26 February 2015

Javier Calle-Martín is Senior Lecturer at the University of Málaga (Spain). His research interests are Historical Linguistics and Manuscript Studies. He is the leading researcher of a project for the electronic edition and compilation of an annotated corpus of late Middle English and Early Modern English *Fachliteratur*. He has published in journals such as *Neuphilologische Mitteilungen*, *Folia Linguistica Historica, English Studies, NOWELE* and the *Australian Journal of Linguistics*.

Jesús Romero-Barranco holds a BA in English Language and Literature from the University of Málaga (Spain). He has recently obtained an MA in English Language and Literature from the University of Málaga, where he collaborates in a research project pursuing the electronic edition of hitherto unedited early Modern English *Fachliteratur*.

Address: Departamento de Filología Inglesa, Francesa y Alemana. Campus de Teatinos, s/n. 29071, Málaga, Spain. Tel.: +34 952131786.