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Historical sociolinguistic approaches to derivational morphology: A study of speaker gender and nominal suffixes in Early Modern English

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ABSTRACT

Sociolinguistic variables, such as gender, help nuance historical claims about language change by identifying which subsets of speakers either lead or lag in the use of different linguistic variants. But at present, scholars of historical sociolinguistics have focused primarily on syntax and inflectional morphology, often leaving derivational morphology unexplored. To fill this gap in part, this paper presents a case study of men's and women's use of five different nominal suffixes – *-ness*, *-ity, -age*, *-ment*, and *-cion* – within the fifteenth and sixteenth century portions of the *Corpus of Early English Correspondence*. This study finds that men led women in the use of derivatives ending in some suffixes (*-cion* and *-ment*), while women generally led men in the use of *-ity.* Discovering that different suffixes likely have different histories that depend, in part, on social variables, the paper argues that additional synchronic and diachronic studies of derivational morphology and social variation are needed.

1. Introduction

Speakers of Present Day English are often confronted with the following sort of dilemma: Is the right word *passiveness* or *passivity*? Romaine (1983: 179) notes that this problem is certainly not a new one; speakers of Early Modern English were deciding between several viable derivatives with the same base and roughly the same meaning, such as *propension*, *propenseness*, *propensity*, and *propensitude*. There are likely many phonological, semantic, contextual, and sociolinguistic factors that impact a speaker's proclivity for one derivative over another. A fascinating proposition is that a speaker's

gender[1] may influence his or her preferences for using a particular suffix: in other words, it may be possible that men tend to prefer *passivity* to *passiveness*, or even prefer *-ity* formations to *-ness* ones more generally.

This study explores this possibility by examining the relationship between gender and the use of derivational morphology in the history of English. It first surveys existing literature on these matters, finding much attention to diachronic studies of gender and syntax or inflectional morphology, but scant material on gender and derivational morphemes. It then presents a case study of men's and women's use of different derivational suffixes during the fifteenth and sixteenth centuries. More specifically, it examines various trends in the use of five nominal suffixes – *-ness*, *-ity*, *-age*, *-ment*, and *-cion* – within the *Corpus of Early English Correspondence* (*CEEC*). The paper discovers that there is, in fact, some interplay between the social variable of gender and the spread and use of words with particular suffixes. Men are more prone than women to use derivatives ending in *-cion* and *-ment*, while women are somewhat more likely to prefer lexemes ending in *-ity*. Ultimately, the paper argues for the value of studying the social dimensions of change in derivational morphology, urging further synchronic and diachronic analyses of these linguistic areas.

2. Previous studies of derivational suffixes and gender as a social variable

Studies of derivational morphology in Present Day English have, for the most part, aimed to determine the semantic and combinatorial properties of bases and affixes (e.g. Aronoff 1976; Fabb 1988) and measure and define affixal productivity (e.g. Baayen 1989; Bauer 2001). Diachronic studies, many of which focus on the historical development of nominal suffixes, have followed suit. Dalton-Puffer (1996) provides the most comprehensive account of borrowed derivational morphology in Middle English. Based on

1 Even though the term *sex* as a biological identifier for speaker classification is appropriate for this study, I have followed the lead of scholars such as Nevalainen – Raumolin-Brunberg (2003) and Säily – Suomela (2009) in choosing *gender* as the primary social variable to investigate. Nevalainen – Raumolin-Brunberg (2003: 110) convincingly argues that "it is not biology that ought to be focused on, but the social roles and practices the two sexes typically assume in society". Because these roles and practices become essential in explaining differences in each gender's use of certain derivational suffixes historically (see section 4, in particular), *gender* was the more relevant terminological choice for this study.

data from the *Helsinki Corpus*, her work offers a descriptive overview of the use, semantics, and productivity of native and borrowed suffixes in Middle English. Cowie – Dalton-Puffer (2002) offers various approaches for studying derivational productivity from a diachronic perspective, especially in light of the limited data often available in historical studies. Lloyd (2005) addresses the semantic differences among the suffixes *-ment, -ance, -age, -ation,* and *-al* in Middle and Early Modern English. Analyzing data primarily from Early Modern English to the present day, Kaunisto (2007) focuses strictly on lexemes ending in *-ic/-ical* from a lexicological perspective. And Anderson (2000) tracks neologisms in the *Oxford English Dictionary* (*OED*) to account for the productivity of derivational suffixes from the twelfth century to the present day. She identifies broad yet significant trends, such as increased neologizing among all nominal suffixes during the fifteenth and sixteenth centuries.

Despite such important findings, very few of these studies have considered the impact of social variation on the use and development of derivational suffixes in the history of English. Cowie (1998) does consider the impact of register variation on the historical development of suffixes such as *-ity*, *-ness*, and *-tion*. For example, with reference to data from the *ARCHER* and the *Helsinki* corpora, she demonstrates that from the seventeenth century onwards, scientific and medical registers have tended to prefer *-ity* to *-ness* nominalizations, while fiction, sermons, and letters have tended to use *-ness* more than *-ity* (1998: 223). Fleischman (1977) explains the development of *-age* as an English suffix with some reference to its social history: she contends that *-age* was used widely in the Middle Ages by particular social groups (e.g., merchants and guildsmen) for deriving or borrowing words designating taxes, fees, and dues. But these and other studies have not empirically explored the relationship between specific social variables, such as gender, and derivational usage.

One exception to this trend is Romaine (1983), which considers, among other factors, the impact of social variables such as gender and age on the use of derivational suffixes in Present Day English. Romaine (1983: 182-183) designs an experiment to test speaker intuitions about possible words ending in *-ness* or *-ity*, such as *perceptiveness* vs. *perceptivity*. More specifically, she provides a list of 100 words to 80 informants, asking them to decide if only the *-ness* derivative is acceptable, or if only the *-ity* derivative is acceptable, or if both derivatives are acceptable. In terms of the "social dimension of individual variability", Romaine (1983: 187) summarizes her findings as follows:

> Men on the whole tend to accept both *-ness* and *-ity* forms less often than women, but this is mainly due to the great difference between men's and women's scores in the youngest age group. Men also tend to accept more *-ity* only forms, particularly in the youngest age group. As for the dimension of age, younger speakers tend to accept more forms with both *-ness* and *-ity* than older speakers. Older speakers tend to divide their judgements into *-ness* only and *-ity* only.

Interestingly, her study finds that gender and age may play some role in derivational usage, with men exhibiting a slight preference for *-ity* forms, and younger speakers and women more likely to accept both *-ness* and *-ity* derivatives off of the same base. Of course, these results should be interpreted cautiously, as her sample size is rather small. And Romaine herself affirms (1983: 182-196) that social variation should be only one of several criteria used to assess productivity: morphologists must also consider phonological constraints, semantic characteristics, and the morphological form of the base. Even so, her study provides some evidence of potential correlations between social variables and derivational use in the present day, inviting further investigation into whether the social variable of gender may have played a role in the diachronic development of these suffixes.

Historical sociolinguistic research has provided increasing insight into the effects of gender on language change in English. But such studies have typically focused on variation in syntax and inflectional morphology, often leaving the interplay between gender and derivational morphology unexamined. Applying social network theory to letters written in the fifteenth century, Bergs (2005) examines several social variables (including gender) and the varied uses of personal pronouns, relative clauses, and light verb constructions. Kytö (1993) finds in the Early Modern English portions of the *Helsinki Corpus* that women are more likely than men to use the third-person singular present tense verbal inflection *-s* in the register of letters. Arnaud (1998) argues that, in personal correspondence from the eighteenth and nineteenth centuries, women lead men in the increasing use of the present progressive verbal inflection *-ing*.

These diachronic sociolinguistic studies of syntax and inflectional morphology are largely corroborated by the series of case studies presented in Nevalainen – Raumolin-Brunberg's book *Historical Sociolinguistics* (2003). The authors not only discover that men and women often adopt linguistic variants at different rates historically, but they also find that women tend to lead language changes in the history of English. Their evidence from the

CEEC includes the use of *you* over *ye* (2003: 118-119) and the replacement of third-person singular *-th* with *-s* (2003: 122-124), both of which were led by women in most sub-periods of the fifteenth through seventeenth centuries. However, the authors do identify a few variables in which men lead changes: e.g., the decline of multiple negation (2003: 128-129) and the replacement of relative pronoun *the which* with *which* (2003: 129-130). They argue (2003: 130-131) that these exceptions are likely due to "supralocal changes led by men" which were "typically channelled through learned and professional usage". The loss of multiple negation, in particular, was "promoted by male professionals and systematically led by men in the upper and middle sections of society". The authors indicate (2003: 112) that their results, including the exceptions, generally confirm Labov's (2001: 293) "gender paradox": "women conform more closely than men to sociolinguistic norms that are overtly prescribed but conform less than men when they are not". In other words, developing professional norms predictably impacted men's language use more than women in certain parts of the grammar, such as multiple negation, primarily because women were mostly excluded from professional social spheres during these centuries. For these specific types of changes, women tended to lag behind men. But since there was otherwise little overt language prescription in the centuries preceding the eighteenth century, women – as predicted by Labov's theory – have tended to lead most linguistic changes in the Early Modern era.

These studies have revealed much about the relationship between gender and diachronic syntax and inflectional morphology. But what remains unclear is whether these sociolinguistic trends also apply to historical changes in the use of derivational morphology. By examining type counts of *-ity* and *-ness* in data from the seventeenth-century portion of the *CEEC*, Säily – Suomela (2009) finds that gender significantly impacts the number of types of derivatives in *-ity* used by speakers. In their data, women used far fewer types of *-ity* than did men; interestingly, there was no statistically significant difference in the use of *-ness* types between men and women. While Säily – Suomela (2009) provides a helpful consideration of the impact of social variables on derivational usage, as a historical study it is limited in a couple of respects: (1) it considers only two suffixes, whereas many more nominal suffixes were rapidly growing in use during the Early Modern period; and (2) its primary focus is on statistical models for evaluating the relationship between productivity and social variables in one time period (the seventeenth century), rather than on changes in the use of derivational

suffixes over time[2]. Even though Romaine (1983) observes differences in gender preferences for one derivational suffix over another (i.e., competing forms with *-ity vs. -ness*) in the present day, we do not yet know if similar differences are observable among a wider variety of suffixes in eras of English earlier than those explored in Säily – Suomela (2009). Anderson (2000) has shown an increase in neologized nominal derivatives during the fifteenth and sixteenth centuries, but we do not yet know if women in this era were more likely to use certain derivatives than men. To shed light on these questions, in the following sections I provide a case study of nominal derivatives ending in suffixes that became increasingly productive in English during the fifteenth and sixteenth centuries – specifically, lexemes suffixed with *-ness*, *-ity, -age*, *-ment*, and *-cion* – with particular attention to men's and women's usage of these forms.

3. Methods and data collection[3]

As Nevalainen – Raumolin-Brunberg (2003: 29) has demonstrated, personal letters are "one of the most oral written genres". In historical studies, letters represent the written data that come closest to the everyday speech of English-speaking peoples. Letters are also typically well-dated, enabling accurate diachronic studies of language. And most can be classified along a number of sociolinguistic dimensions, such as gender of author/addressee, age, and class.

To conduct this diachronic analysis of borrowed derivatives, texts were selected from the *CEEC*[4]. The *CEEC* is a 2.7 million word corpus of personal letters written by over 778 informants, from the beginnings of the records of the genre (ca. 1410) to 1681. Individual letters are coded for sociolinguistic variables such as gender and age of writers and addressees. Men are much more represented than women in all sub-periods, in part because they tended to have greater access to literacy during this time. Multiple social classes are represented in the corpus, though the upper classes are more

2 Säily – Suomela (2009: 105-106) briefly considers change in the use of *-ity* during the seventeenth century, noting that letter writers increase the range of types used in 1640-1681 compared to 1600-1639.

3 The quantitative data in sections 2 and 3 also appear in my unpublished dissertation, Palmer (2009: 265-280).

4 The texts of the *CEEC* were taken from the publicly available *PCEEC* (*The Parsed Corpus of Early English Correspondence*). The description of the corpus in this section is taken primarily from Nevalainen – Raumolin-Brunberg (2003: 43-49).

strongly represented. The corpus has some geographic diversity, including letters from East Anglia, London, the North, and the Royal Court. Because of the corpus's general representativeness, this study adopts Nevalainen – Raumolin-Brunberg's (2003: 49) view that

> […] while the CEEC may not in all respects represent the entire language community from the fifteenth to seventeenth centuries, it nevertheless provides quite a reliable sample of the informal language used by the language community, or at least by the literate writing community, of Tudor and Stuart England.

As such, the use of derivational morphemes in letters can be assumed to represent patterns of use that were likely present within this literate community. Lexemes with these suffixes may have been further diffused from literate speakers to less literate speakers, but there is no available evidence to describe how this process might have taken place.

To enable diachronic analysis, texts were grouped into fifty-year sub-periods, 1401-1450 (CEEC1), 1451-1500 (CEEC2), 1501-1550 (CEEC3), and 1551-1600 (CEEC4). Because nominal derivatives have been a focus in many previous studies of derivational morphology, they were also chosen for analysis and comparison in this study. Derivatives were identified by using the AntConc concordancer. Native suffix *-ness* was selected, as were borrowed suffixes *-age, -ity, -cion,* and *-ment.* These suffixes are five of the most frequently occurring suffixes in the *Helsinki Corpus* (Dalton-Puffer 1996), and all of them are used to create abstract nominals in English. The inclusion of native *-ness* – a morpheme that has been generally considered "fully productive" historically (Romaine 1983: 179) – allows for a baseline to which trends in the borrowed suffixes can be compared. These borrowed suffixes were relatively new to English in the fifteenth and sixteenth centuries, and data from the *CEEC* reveal their varied patterns of growth over time[5].

Certain derivatives were excluded from the present analysis. The lexeme *highness* was an outlier in sub-period CEEC3 (1501-1550), as letter writers used it in unusually large numbers as an address or reference to the king or other superiors. In fact, it accounted for almost two-thirds of all uses

5 In fact, as Dalton-Puffer (1996: 219) points out, it is usually impossible to know in diachronic studies whether or not a derivative (e.g. *determination*) is either a whole word borrowing from French or Latin or a composite form produced from a borrowed base (*determine*) and a productive suffix (*-ation*) in English. For simplicity, this study assumes that each token occurrence of a derivative equals one token occurrence of a suffix.

of *-ness* in that one sub-period, a pattern which was not observed in any other sub-periods in the present study. As such, this highly lexicalized item *highness* was excluded from the present analysis.

All claims of statistical significance were based on chi-square tests conducted with the software SPSS. A difference was typically considered significant if the p-value was less than 0.05.

Fig. 1 provides the normalized frequencies of *-ness*, *-ity*, *-age*, *-ment*, and *-cion* in the four sub-periods of the present study:

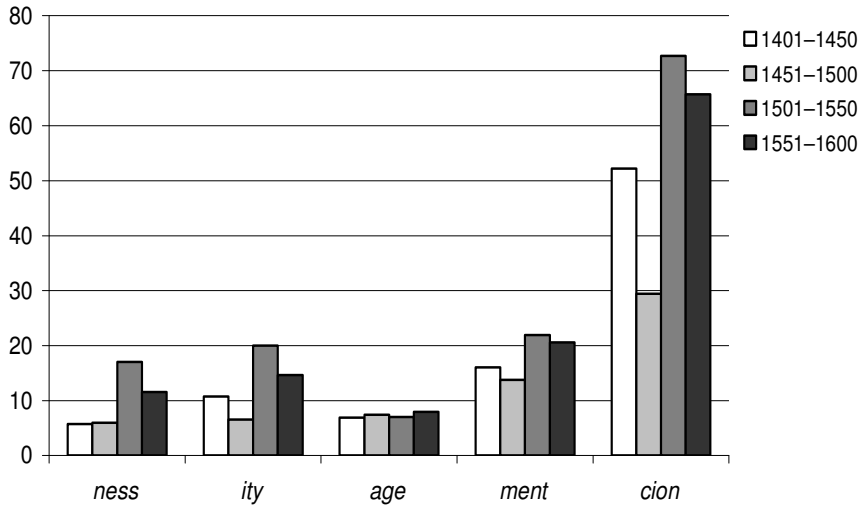

Figure 1. Suffix frequencies in sub-periods of the *CEEC*. The vertical axis represents normalized frequencies, the number of tokens per 10,000 words in the corpus, with *highness* excluded

Perhaps the most remarkable trend observed in Fig. 1 is the usage of *-ness.* Somewhat surprisingly, productive native suffix *-ness* is roughly equal in frequency with native suffix *-ity*. The native form is consistently less frequent than *-ment*, and much less frequent than *-cion*. If personal correspondence is the closest representative sample to the everyday language use of English people in the fifteenth and sixteenth centuries, then these data suggest that usage of *-ness* was in relative decline compared to the use of several other borrowed derivatives. An interesting question here is whether or not this trend in *-ness* was an effect of the relatively more frequent use of borrowed derivatives. In other words, *-ness* may have become less useful as a nominal in written expression because its borrowed peers became more useful, particularly if *-ness* was competing with other deadjectival patterns

such as *-ity.* While this is an intriguing proposition, it is difficult (or perhaps impossible) to prove with any certainty. There is some small evidence that, in terms of individual lexical decisions, there were some forms that may have competed for use (e.g. *ableness* vs. *ability*, *confusedness* vs. *confusion*). But these sorts of potential equivalents sharing the same base are rare in the *CEEC*. Other synonymic choices may have been at play (e.g., the choice of *absurdity* or *oddity* over *strangeness*). But, especially because glossing was rare in the *CEEC*, it is usually impossible to know if individual writers were aware of these lexeme pairs and if they were treating them as semantic equivalents. Because of these limitations in the historical data – specifically, the rare occurrences of competing forms and lack of metalinguistic reflection on word choice – it is impossible to design a study of derivational choice akin to Romaine's (1983) work. Even so, the *CEEC* allows for aggregate comparisons of the use of different derivatives by different social groups, including men and women in various sub-periods.

In terms of the borrowed derivatives, *-age* remains approximately at the same frequency throughout the fifteenth and sixteenth centuries. The other borrowed suffixes all show growth in the sixteenth century compared to the fifteenth century – especially *-cion*, whose usage climbs to over 70 occurrences per 10,000 words. These results may seem somewhat surprising since, as Cowie (1998) has shown, less formal genres such as personal correspondence tend to be marked more often with frequent *-ness* derivatives than with *-cion* derivatives, which tend to characterize medical and scientific writing. However, letter writers in the *CEEC* – men, in particular, who were more likely to be educated in professional discourses than were women – likely drew upon so many *-cion* derivatives because they came from a variety of lexical fields that consist largely of Latinate word stock, including legal, religious, and political discourses. Thus borrowed derivatives from Latin (using *-cion* as a suffix) increased in use over time, due to increasing perceived usefulness of the forms by certain subgroups of speakers. Such considerations of gender in diachronic analyses of derivational morphology will be explored in greater quantitative and qualitative detail in the following section.

4. Analysis of gender and several nominal suffixes in the *CEEC*

In the overview of research on gender and language change in English in Nevalainen – Raumolin-Brunberg (2003), the authors do not mention derivational morphology at all. But they do indicate, without citing a specific study, that lexical borrowing is one of the main types of change led by men

in the Tudor and Stuart periods. The only evidence they offer (2003: 118) is that many lists of hard-words, such as Cawdrey's *Table*, were specifically targeted towards women. Cawdrey's Preface (1604) overtly declares that his hard words were

> *gathered for the benefit & helpe of Ladies, Gentlewomen, or any other vnskilfull persons.* Whereby they may the more easilie and better vnderstand many hard English wordes, which they shall heare or read in Scriptures, Sermons, or elswhere, and also be made able to vse the same aptly themselues.

It is reasonable to assume that, because women generally had lower rates of education and literacy in the fifteenth and sixteenth centuries, they may have been less inclined to employ Latin and French borrowings and, consequently, derivatives including suffixes from these languages (e.g., *-age*, *-cion*, *-ity, -ment*). Indeed, Cawdrey explicitly describes hard words as those "borrowed from the Hebrew, Greeke, Latine, or French"; a short sample from the list's A-section alone finds entries with definitions for *acquisition, affinitie, arrerages, and ambushment.* If Cawdrey's *Table* serves as an accurate indicator of words unlikely to be part of women's English, then one would expect men to generally lead women in the use of borrowed derivatives during this period. Similarly, since only one *-ness* derivative (*lithernesse* 'slouthfulnes, idlenes') appears in the entirety of Cawdrey's list, it might be the case that there is less visible gender differentiation in the use of derivatives with the native suffix.

The data from the *CEEC*, presented in Tab. 1, confirm these predictions for some derivative types but not others:

Table 1. Gender distributions of suffixes. In the first column, the number following each suffix corresponds to the period in which it occurred – e.g., *cion1* refers to the use of *-cion* in period CEEC1. The numbers provided in the second and third columns are normalized frequencies (number of tokens per 10,000 words). The token *highness* was excluded from this analysis

Suffix/Period	Men	Women
1	2	3
cion1	60.2	15.2
cion2	30.5	24.9
cion3	75.6	23.2
cion4	65.3	68.0

1	2	3
ment1	18.9	3.2
ment2	14.8	8.4
ment3	22.2	16.9
ment4	21.4	15.8
age1	6.5	8.8
age2	7.6	6.6
age3	7.2	3.1
age4	8.3	5.6
ness1	6.8	3.2
ness2	6.1	5.4
ness3	16.8	21.3
ness4	11.5	12.0
ity1	9.9	14.4
ity2	5.9	9.5
ity3	20.5	11.9
ity4	13.8	19.4

The largest differences in gendered use occur with deverbal nominals *-ment* and *-cion*. In all four sub-periods, men lead women in the use of *-ment* derivatives[6]. The differences are even more exaggerated for *-cion*, which men use much more often than women until the second half of the sixteenth century, when women's use roughly equals that of men's. This difference in usage was most likely due to the differing social spheres inhabited by men and women during this period. Nevalainen – Raumolin-Brunberg (2003: 114) describes the social situation as follows:

> As to **being**, [that is] integration into society, gender differentiation could hardly have been more marked. An individual's rights to participate in decisions and activities influencing his/her life were

6 Statistical tests show that there may be no significance in the differences between men's and women's frequency of use of *-ment* derivatives in the sixteenth century. The p-values for chi-square tests are 0.167 for CEEC3 and 0.056 for CEEC4, which is on the borderline for statistical significance (assumed when $p < 0.05$). However, because men consistently use *-ment* more than women in all sub-periods, the overall trend is certainly noteworthy.

> sharply gendered: Tudor and Stuart men ruled every aspect of the public sphere, including national and local politics, the economy, the church and the legal system.

A majority of the lexemes ending in *-ment* and *-cion* emerged from these very spheres – politics (e.g., *administration*, *commision*), economics (*payment, assignment*), religion (*confession*, *temptation*), and law (*ratification*, *inditement*). Hence, it is easy to understand why men might be far more likely to use these terms more often and earlier than women: these derivatives are more likely to have reflected men's day-to-day experience. A representative example of such male professional discourse occurs when Thomas Cromwell uses the lexeme *impediment,* making a legal request to Arthur Lisle for safe passage of his possessions (my italics):

(1) Withe one seruaunt and two horses or geldynges twenty poundes in money and other his laufull cariage and utensiles. And without any vnlawfull serche let or *ympedyment*, Wherfore I require you to cause that he may sopasse without any disturbaunce accordyng to the kynges pleasure in that behalf.

This lexeme *impediment*, in fact, occurs 6 times with male writers in the first two centuries of the *CEEC*, but only once with women. Such evidence here and in Tab. 1 suggests that *-ment* and *-cion* lexemes follow the pattern of hard words, which diffused into English usage typically via men's usage more often than women's.

The data for *-ness* and *-age*, however, do not tell the same story. It is noteworthy that neither suffix shows statistically significant differences in the language of men and women in any sub-periods of the fifteenth or sixteenth centuries. As a native nominal, *-ness* derivatives would be less likely to be considered hard words, and thus may have been equally accessible to both men and women. But *-age* is a borrowing whose lexemes often denote economic, political, and familial entities. So it would be reasonable to predict that men might have led in its usage; Cawdrey (1604) lists several *-age* derivatives as hard words for women, such as *heritage, patronage,* and *suffrage*. However, studies such as Burnley (1992: 449) have indicated that *-age* has tended to be one of the most naturalized borrowed nominal suffixes, much more likely to combine with native bases than other borrowed suffixes (e.g., *stoppage*). Perhaps the even distribution between genders displayed in Tab. 1 is a sign that speakers perceive *-age* and its derivatives to be less hard

than other borrowings, much more like native *-ness* than borrowed *-cion*. The fact that both genders used *-age* in similar frequencies throughout these two centuries may reflect that *-age* was more integrated into English than its borrowed peers.

The suffix *-ity* exhibits the most complex gender distribution. In all periods but CEEC3, it is used more often by women than by men. The surge in men's use in CEEC3 coincides with an influx of learned forms ending in *-cion* and *-ment* used by men; male writers in the early sixteenth century suddenly begin to use words such as *generality, perplexity,* and *particularity*. In the fifteenth and early sixteenth century, women were more likely to use *-ity* forms that have been attested in the *OED* in much earlier periods: e.g., *adversity* [13th (c.)], *charity* [12th (c.)], and *trinity* [13th (c.)]. Many of these lexemes emerge from devotional discourses, perhaps suggesting that women were more likely than men to write with non-vocational spiritual references. While not exclusive to female writers, such spiritual reference quite often appears in closings that express well-wishing for a loved one, as Margaret Stuart illustrates in her 1516 letter to her brother Henry VIII (my italics):

(2) And the Holy *Trenyte* have you my most derest broder in tuycion and governance

Because many of these *-ity* forms had already existed in English well before this period, they may not have been limited to professional religious registers dominated by men. And interestingly, by the end of the sixteenth century, women began to add to the types of *-ity* derivatives they used, including a wider range of technical, abstract, and non-religious terminology (e.g., *absurdity, audacity, generality*). Women outpaced men again in overall use of *-ity* in the final sub-period.

These results may initially seem somewhat surprising, especially compared to prior studies of gender and the use of *-ity*. Unlike Romaine (1983), in which men have been shown to have a preference for *-ity* forms in Present Day English (at least compared to *-ness* formations), the historical data on *-ity* from the Early Modern period show that women generally tended to use *-ity* forms more so than men. Of course, an aggregate tendency for one social group to use a derivative type more frequently than another (as measured in a corpus) should not automatically be considered identical in kind to the tendency of one gender to choose one competing derivative type over another (as measured by experiments with live informants). Nevertheless, the corpus data from the Early Modern period do indicate

women's preference for *-ity*, defined in terms of overall frequency of usage in letter writing, which seems to contrast with men's preference of *-ity* derivatives observed in present-day studies of competing forms.

Revealing a gendered preference perhaps similar to that discovered in Romaine (1983), Säily – Suomela (2009) has argued that, in the seventeenth-century data from the *CEEC*, women used a significantly smaller range of *-ity* types than did men. So it may seem surprising that the data from the fifteenth and sixteenth centuries show women outpacing men in the use of *-ity* derivatives in three out of the four sub-periods, at least in terms of total tokens. Taking these studies together, one might be tempted to speculate that a significant language change related to gender occurred during the Early Modern period: women led in the earliest stages of *-ity* use, but were eventually outpaced by men beginning in the seventeenth century. But it should be remembered here that token and type counts do not always correlate with one another – a relatively unproductive suffix such as *-th* in *health* and *growth* may have high token counts in a corpus with a very small corresponding number of available types (Bauer 2001: 190-191). So the results of Säily – Suomela (2009), which focuses on type frequencies and productivity and does not provide analysis of overall token frequencies, cannot be directly compared to those of the present study, which focuses on token counts. In any case, it is certainly significant to note that even though women consistently used fewer types of derivatives in *-ity* in each sub-period of the present study[7], women still exhibited higher overall token frequencies of *-ity* derivatives than did men in all but one sub-period. And this gendered tendency stands in stark contrast to patterns observed with other nominal suffixes, especially men's general preferences for derivatives in *-cion* and *-ment*.

5. Conclusion

This paper has shown that borrowed derivatives follow different trajectories in terms of their gendered use in the fifteenth and sixteenth centuries. Men

7 The difference in absolute type frequencies between genders is largely a function of corpus size and content: the *CEEC* contains far more letters by men than by women, so it is not surprising that men used a wider range of *-ity* types. In fact, the type numbers for several nominal suffixes used by women in the *CEEC* were so small that type frequency based on gender was determined not to be a useful measure of comparison between sub-periods. The token frequencies proved far more revelatory in terms of determining statistically significant differences.

tend to use *-ment* and *-cion* more than women, most likely because these endings often appeared in lexemes borrowed from learned and professional discourses. Women overall tend to use *-ity* more than men. While this general trend perhaps contrasts with the present-day data in Romaine (1983), the third sub-period (1501-1550) does show men using *-ity* derivatives, many of which were highly learned, more often than women. And because there is no gender differentiation in men's and women's use of *-ness* or *-age* throughout the fifteenth and sixteenth centuries, it is possible to speculate that *-age* derivatives may have been, like *-ness*, more integrated into general English usage – and less susceptible to high or low frequency uses by particular social subgroups – than other borrowed suffixes. To confirm such speculation, however, more historical sociolinguistic research on *-age* is necessary.

Furthermore, the preceding analysis has illustrated that sociolinguistic variables, such as gender, help to nuance our understanding of the growth of derivational morphology historically, identifying which subsets of speakers were leading or lagging in the use of various suffixes. And it complements our emerging yet incomplete understanding of language change. Studies such as Nevalainen – Raumolin-Brunberg (2003) have shown that women often, but not always, lead changes in syntax and inflectional morphology historically. My study has presented a similarly complex situation for diachronic changes in the use of derivational suffixes in the Early Modern period: in the fifteenth and sixteenth centuries, women generally led one change (the increasing use of derivatives with *-ity*, even if women weren't always neologizing with the suffix); men clearly led two others (the increasing uses of derivatives with *-ment* and *-cion*); and neither gender led in the use of *-ness* and *-age*. It should be noted, of course, that such observed patterns reflect larger historical trends in the language if and only if the *CEEC* provides an accurate reflection of the language use of men and women during these centuries. It is entirely possible that overall trends in the use of certain derivatives might differ markedly in a different corpus – certainly if different registers are investigated, as has been shown by Cowie (1998) and Palmer (2009). And even if another corpus of letters that rivaled the size of the *CEEC* were available, it is possible that the token counts for various nominal derivatives might differ significantly if the topics of those letters differed significantly from those in the *CEEC*. Even so, the findings from the present study suggest that different affixes may have different, individual histories, each of which potentially depends on social variation. And linguists, historical or otherwise, can evaluate the relevance of different social variables on the use of derivational suffixes only if they attempt to

explore those variables in the first place. It is clear that more diachronic and synchronic research on a wider variety of affixes in different eras of English – including the impact of variables such as age, gender, class, and sexuality on derivational usage and change – is needed to complete this quite complicated picture.

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The Old English causative verb *hatan* and its demise[1]

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ABSTRACT

This paper examines the causative use in prose texts of the Old English verb *hatan*. A number of questions are asked here: to what extent can *hatan* be considered an 'implicative' verb, implying that the action described by its complement was necessarily performed? In what kind of syntactic and semantic environments does *hatan* appear? And what is its relationship to the other causative verbs in Old English? The distributional properties of *hatan* are compared to those of other, semantically similar verbs.

The paper also investigates the circumstances in which *hatan* disappears. It shows that the loss of *hatan* occurs in stages, the first of which is the disappearance of the implicative, causative uses, in the face of lexical competition from *let*.

1. Introduction

My intention in this paper is to examine the causative use of the verb *hatan* in Old English prose and the circumstances surrounding its rather abrupt disappearance towards the end of the Old English period. *Hatan* is an unusual verb in that, much like its Gothic cognate *haitan*[2] or its modern German and Dutch cognates *heissen* and *heten*, at various stages in their history, it appears to have at least two distinct uses[3]. It can occur with a "naming" sense, either

1 I should like to thank the anonymous reviewers for all their very helpful comments and suggestions.

2 See Cloutier (2010).

3 This is something of a simplification. *Gehatan* is also used, generally in the prefixed form, to mean 'promise'. For an attempt to "unify" the different meanings of *hatan*, see Nagucka (1980).

in a relic "medio-passive" construction[4], or as a straightforward transitive verb, with passive morphology, as in (1) and (2), respectively:

(1) *Sum swyðe gelæred munuc com suþan ofer sæ* […] *and se munuc* ***hatte*** *Abbo.* (St. Edmund, II 341: 1)

[A very learned monk came from the south over the sea […] and the monk was called Abbo.][5]

(2) *Seo boc is* ***gehaten*** *Genesis, þæt ys 'gecyndboc'* (Heptateuch, 5: 1)

[The book is called Genesis, that is 'original book'.]

It is also used with an infinitive complement, and occasionally with a finite complement introduced by *þæt*. Its basic meaning in these constructions seems to be something like 'order, command', although there is evidence that the 'order' sense shades at times into something closer to the meaning of causative *have* in modern English. It is with uses of this type that I shall be concerned here.

2. Causative *hatan*

Royster (1918) was perhaps the first to point out that *hatan* can, in some contexts at least, be considered a fully-fledged causative verb. He makes a distinction between "perfective" and "imperfective" uses of *hatan*, which could be illustrated by (3) and (4), respectively:

(3) *Þa wearð ðis ðam casere gecydd, and he* ***het*** *ðone dry him to gefeccan* […]. *Simon bræd his hiw ætforan ðam casere.* (Homilies, 376: 10)

[This was then made known to the emperor, and he commanded the magician to be brought to him […]. Simon changed his appearance before the emperor.]

(4) *Se cing* ***het*** *hi* ***feohtan*** *agien Pihtas,* ⁊ *hi swa dydan* ⁊ *sige hæfdan swa hwar swa hi comon.* (*ChronA: 449*)

['The king ordered them to fight against the Picts, and they did so, and were victorious wherever they went.]

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4 Medio-passive *hatan* had a separate preterite form *hatte*, as opposed to *het* or *heht* for the other meanings.

5 All the translations and glosses given here, unless otherwise stated, are those of the author, who obviously accepts full responsibility for any errors or omissions.

Simon in (3) is the magician in question. In order for him to change shape before the emperor, it is clear that the emperor's command must necessarily have been carried out. One could gloss this example by a *have* + past participle construction in modern English: *he had the magician brought to him*. In (4), however, the writer has to state explicitly that the order was both given and performed, by means of the underlined *did so* phrase. *Have* + past participle would be inappropriate here: **he had them fight against the Picts, and they did so*. *Hatan* seems to evoke both the giving of an order and its execution in (3), but only the giving of the order in (4). Today, following Karttunen (1971), we would probably use the terms "implicative" to describe the use of *hatan* in (3), and "non-implicative" in cases such as (4).

2.1 Causatives and implicativity

Implicativity is one of the properties which has been used to define the notion of a causative verb (see Shibatani 1976). It allows a distinction to be made between causatives, such as modern English *make*, *have*, *cause*, and *get*, and the so-called "manipulative" verbs of ordering and asking, which remain non-implicative. Consider, for instance, (i) and (ii):

(i) *She **made**/**had** him open the door.*
(ii) *She **got**/**caused** him to open the door.*

Both imply that the door was necessarily opened. This is an entailment, and as such cannot be cancelled, as (iii) and (iv) show:

(iii) **She **made**/**had** him open the door, but he didn't open it.*
(iv) **She **got**/**caused** him to open the door, but he didn't open it.*

The first part of each sentence, with a causative verb, is contradicted by the second, which affirms that the event did not take place. Verbs of ordering and asking can, of course, be used in modern English with implicit causative or implicative meaning, as in (v):

(v) *She **ordered**/**commanded**/**asked** him to leave the room. Once he had gone, she regretted it.*

This time, however, we rely on the context to inform us that the referent of *he* did indeed leave the room, and that the order or the request was

performed. This is a pragmatic inference rather than an entailment, and like all pragmatic inferences (Grice 1989: 44) it can be cancelled:

(vi) *She **ordered**/**commanded** /**asked** him to leave the room, but he didn't.*

In this instance, there is no contradiction. One question that we could ask is to what extent *hatan* functions as an implicative causative in Old English. In order to have a better understanding of the causative functions of *hatan*, we need to look at how it fits into the Old English causative group, and how its distribution compares to that of the other causatives.

2.2 Old English causatives

Verbs such as *gespanan*, *sendan*, and even *habban* are used sporadically with causative meaning, although causative *habban* is particularly rare (Kilpiö 2010). *Geniedan* also occurs as a coercitive causative, much like modern *force*. However, as has been pointed out elsewhere (Lowrey 2010, 2012), the most frequent causatives in Old English are *hatan* and (*ge*)*don*. These verbs are in largely complementary distribution, in that (*ge*)*don* appears most frequently in those contexts from which *hatan* is systematically absent, such as when the complement is a small clause or, as in the following examples, with a finite complement in contexts where the Causer or the Causee are non-agentive:

(5) *Se arleasa **deð** þæt fyr cymð ufan swilce of heofonum on manna gesihðe.* (Homilies, 6: 6)

[The impious one will cause fire to come from above, as if it were from heaven, in sight of men.]

(6) *Myrra **deð**, swa we ær cwædon, þæt þæt deade flæsc eaðelice ne rotað.* (Homilies, 118: 11)

[Myrrh, as we have before said, causes dead flesh not to rot easily.]

The agentive causative, on the other hand, appears to be *hatan*. One finds, in Old English prose texts, very many instances like (3) above, where *hatan*, in the presence of an agentive Causer and an agentive (implicit) Causee, is clearly used with implicative meaning. For example, it occurs regularly in the *Anglo-Saxon Chronicle* in the narration of historical facts, where a king, an archbishop, or some other authority figure orders something to be done, and the order is automatically deemed to have been carried out. As Royster (1918:

82-83) points out, in an age when social hierarchies enjoyed considerable respect, the conclusion that an action had indeed been performed as ordered would have been easy to draw:

(7) *Her **het** Oswiu cining ofslean Oswine cining on .xiii. kalendas Septembris, ⁊ þæs ymbe .xii. niht forðferde Aidanus biscop on .ii. kalendas Septembris.* (ChronE, 650)

[Here king Oswiu ordered king Oswine to be slain on 13th September, & twelve days beforehand bishop Aidan died, on 2nd September.]

The chronicler in (7) is not merely informing us that Oswiu *gave the order* to kill Oswine on September 13th. The latter met his death on that day, just as the unfortunate bishop had met his shortly before. Both the giving of the order and the execution (no pun intended!) are considered to have been carried out.

Similar examples can be found in the English version of Bede's *Historia Ecclesiastica* when historical facts are related:

(8) *Ond he wæs bebyrged on Sce Andreas cirican þæs apostoles, ða Æþelberht se cyning in þære ilcan Hrofesceastre ær **heht** getimbran.* (Bede, 192: 30)

[And he was buried in St. Andrew the Apostle's church, that king Ethelbert had ordered to be built in that same city of Rochester.]

The *hatan* construction in (8) tells us more than the simple fact that that the king had given the order for the church to be built. Both the ordering and the construction are assumed to have taken place, the latter being viewed as an attested historical fact.

Sometimes it is the immediate context which makes it clear that the order has indeed been carried out, as in (3) above, in (9), and in (10):

(9) *Þa ne mihte Iudas meteleas þær abidan, ac **het** abrecan þone weall, þeah þe he brad wære. Eodon ða ealle inn, ⁊ ofslogon ealle ða hæðenan & aweston ða burh.* (Maccabees, 21: 394)

[Judas could no longer wait there without food, but ordered the wall to be broken down, although it was broad. Then they all went in and slew all the heathens and laid waste to the town.]

(10) *Hælend þa gestod ond hine **het** to him gelædon. On mid þy þe he him genealæhte, he him tocwæð: Hwæt wilt þu þæt ic þe do?* (Blickling, 10: 17)

> [The Saviour stood there and ordered him to be brought to him. And when he drew close to him, he said to him: What do you want me to do for you?]

Obviously, the wall in (9) must have been broken down, in order for the next actions in the sequence, (going in, slaying the heathens, and laying waste to the town), to take place. Similarly, in (10), the phrase *he him genealæhte* shows that the blind man was indeed brought into Christ's presence. Otherwise, of course, the question could not have been asked.

In (7) - (10), *hatan* + infinitive could - and probably should - be translated into modern English by an implicative *have* + past participle construction. Obviously, the past narrative context in Old English prose texts, most of which contain either Bible stories or tales relating the exploits of the rich and powerful, tends to favour implicative interpretations of *hatan*. Nonetheless, the regularity with which *hatan* occurs with implicative meaning is striking.

The above examples illustrate a second important factor here: the grammatical construction in which the causative verb appears. It will be noticed that in all the implicative examples quoted so far, *hatan* appears in what Denison (1993: 165) calls the V+I ("Verb + Infinitive") construction, in which the Causee, a second agent on each occasion, is left implicit. V+I can be compared to the traditional "AcI" structure which, following Visser (1973: §2055), I shall call VOSI ("Verb + Object or Subject + Infinitive") as seen in (4), in which the Causee is present in the surface structure[6]. As shown in Lowrey (2002, 2013), causative V+I in Middle English is associated with a particular type of causation, in which:

- Both the causer and the (understood) causee are agents;
- The infinitive is invariably transitive, followed either by a NP complement or by a *that*- clause, and the predicate telic in nature, very often an "accomplishment" according to Dowty's (1979) classification;
- The causative itself generally denotes a single, specific causative act, and, in the narrative context of most Middle English texts, is very often in the preterite or imperative form.
- These constructions are often rendered by *have* + past participle in modern English.

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6 Unless otherwise stated, the terms V+I and VOSI are used in this paper to denote constructions in which the particle *to* does **not** appear before the infinitive. The variant of VOSI with *to* will be referred to as VOSI[to]. V+I with pre-infinitival *to* is essentially a Middle English innovation, and will not be dealt with here.

V+I in Old English is used in very much the same way. Interestingly, throughout almost the whole Old English period, *hatan* is the only verb to appear regularly in this construction. Only in very late texts does *lætan* begin to supplant it. There are no instances of *lætan* V+I, for instance, in *ChronA*, the oldest of the *Chronicle* manuscripts.

2.3 Implicative and non-implicative *hatan*

Since apparently implicative uses of *hatan* were so frequent, one might expect what was initially a pragmatic inference (as triggered by verbs of ordering and commanding in modern English) to become lexicalised, and *hatan* to become a fully-fledged implicative causative much like modern *make* or *have*. This, however, proves not to be the case, presumably because non-implicative uses of *hatan* also remain frequent throughout the Old English period, as in (4) above, and in (12) and (13):

(11) *…& **het** hi beon bliðe on his gebeorscipe, & heo him behet þæt heo swa wolde.* (Judith, 10: 244)

[…and [he] commanded her to be happy at his feast, and she promised him that she would.]

(12) *Com þa to his apostolum, and hi gefrefrode, and geond feowertigra daga fyrst him mid wunode;* […] *and **het** hi faran geond ealne middangeard, bodigende fulluht and soðne geleafan. Drihten ða on ðam feowerteogoðan dæge his æristes astah to heofenum, ætforan heora ealra gesihðe.* (Homilies, 28: 5)

[[He] then came to his apostles, and comforted them, and for a space of forty days sojourned with them […] and ordered them to go all over the earth, preaching baptism and true faith. Then, on the fortieth day of his resurrection, the Lord ascended to heaven in sight of them all.]

In both cases, the two events (the ordering and what is ordered) are viewed as independent. While the ordering has clearly taken place, the second, ordered event may or may not do so at a later stage.

Once again the construction in which *hatan* appears is relevant to the manner in which the sentence will be interpreted. In all the non-implicative uses quoted thus far, *hatan* appears in the VOSI construction, and this reflects a clear overall tendency for V+I to be associated with implicative interpretations of *hatan*, while VOSI and the (much rarer) finite clause structure (V+*þæt*) tend to occur in non-implicative contexts. This should not

be thought of as some kind of hard and fast rule, however. Complement selection by causative verbs is subject to variation, and one sometimes finds instances of *hatan* VOSI used implicatively, as well as non-implicative uses of *hatan* V+I:

(13) *Þa* ***het*** *se cyning ða anlicnysse towurpan. Hwæt þæt folc ða caflice mid rapum hi bewurpon, and mid stengum awegdon; ac hi ne mihton for ðam deofle þa anlicnysse styrian.* (Homilies, 464: 17)

[The king then commanded the image to be cast down. So the people then quickly threw ropes around it, and levered it with stakes, but they could not, for the devil, stir the image.]

Despite the V+I construction, the meaning of *hatan* is restricted here to the giving of the order, the following sentence making it clear that the order could not be carried out.

There seems to be an approximate but by no means perfect match between the semantics and the syntax. I assume V+I to be some kind of 2-place structure, possibly emphasising the importance of the caused event, and VOSI to be at least potentially 3-place, perhaps stressing more readily the transmission of an order from one agent to another. Probably the most accurate way of describing the distribution of *hatan* V+I and *hatan* VOSI would be to consider that what Smith (1996) would call their respective "variational spaces", the set of all the contexts in which each construction is likely to appear, overlap, as in Fig. 1:

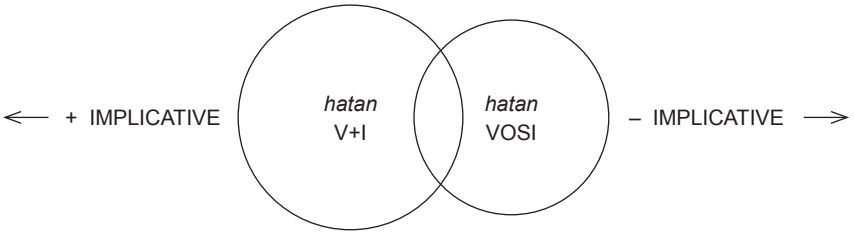

Figure 1. Variational space, *hatan* V+I and *hatan* VOSI

The variational space of *hatan* V+I will contain a greater number of implicative uses, that of *hatan* VOSI a majority of occurrences where the verb is used non-implicatively. Speakers will, however, sometimes hesitate between the two forms, causing their respective variational spaces to overlap. This overlap should not be viewed as the result of performance errors, but rather as something which is "communicatively necessary" (Smith, 1996: 45). Individual speakers, when confronted with a choice between two or more

variables, do not display systematically homogenous behaviour, and do not always select the same option(s). As Weinreich et al. put it: "language is characterised by synchronic oscillation in the speech of individuals" (1968: 166). It is this variation in the choices made by individual speakers that Fig. 1 is intended to illustrate.

The compatibility of causative *hatan* with the V+I construction is interesting. This property clearly distinguishes *hatan* not only from its causative "partner" (*ge*)*don*, but also from manipulative verbs of asking or ordering such as *biddan* and (*be*)*beodan*. This shows up if we compare these verbs in terms of complement selection across individual texts. Table 1 below shows the distribution of *hatan*, *gedon*, *biddan* and (*be*)*beodan* in Ælfric's *Homilies* (the first volume, approximately 100,000 words) by complement type:

Table 1. Distribution of *biddan*, (*be*)*beodan*, *hatan*, and (*ge*)*don* by complement type, Ælfric's *Homilies* (vol. I)

	V+I	VOSI	VOSI[to]	V+þæt	V+NP+þæt
biddan	–	–	–	15	21
(*be*)*beodan*	1	–	–	7	24
hatan	42	6	–	2	3
(*ge*)*don*	–	2	–	17	1

Table 1 highlights just how frequent the verb *hatan* was, even in later Old English, and particularly in the V+I construction, associated with agentive Causers and Causees. (*Ge*)*don* on the other hand, the causative which appears principally in non-agentive contexts, is absent from V+I. One can also compare *hatan* with (*be*)*beodan*, another verb signifying 'order, command', and theoretically very close to *hatan* in meaning, which occurs but once in V+I and otherwise displays a clear preference for the V+NP+*þæt* structure, examples of which are given in (15):

(14) *Ic* ***bebead*** *þearfum, þæt hí blissodon on heora hafenleaste.* […] *Þam cildum ic* ***bead****, þæt hí gehyrsume wæron fæder and meder to halwendum mynegungum.* (Homilies, 378: 21)

[I ordered the poor to rejoice in their indigence. […] I ordered the children to obey [their] father's and mother's salutary admonitions.]

The verb (*be*)*beodan* has two internal arguments: a dative NP, and a further clausal argument, the subject of which is usually co-referential to the dative

NP. Notice too that (*be*)*beodan* is used non-implicatively in both instances in (15). The acts of ordering are obviously considered to have taken place, whereas the second events, the rejoicing and the obeying, may or may not do so subsequently. This is relatively typical of the use of (*be*)*beodan* in the *Homilies*. Again, there is some degree of variation here, and (*be*)*beodan*, much like modern *ask* or *order*, does sometimes give rise to the inference that the second event did indeed take place. On the whole, however, non-implicative uses of (*be*)*beodan* tend to outnumber implicative ones, whereas the opposite seems to be true of *hatan*.

That the distribution patterns illustrated in Table 1 are no isolated phenomenon, but representative of a general trend in Old English, can be seen from the corresponding figures for five other texts; the English version of Bede's *Historia* (approximately 80,000 words), the *Blickling Homilies* (30,000 words), the A or 'Parker' MS of the *Anglo-Saxon Chronicle* (15,000 words), Marsden's edition of the *Heptateuch* (68,000 words), and *Appolonius of Tyre* (6,500 words):

Table 2. Distribution of *biddan*, (*be*)*beodan*, *hatan*, and (*ge*)*don* by complement type, *Bede*

	V+I	VOSI	VOSI[to]	V+þæt	V+NP+þæt
biddan	–	1	–	16	28
(*be*)*beodan*	–	1*	2**	4	9
hatan	42	20	–	6	3
(*ge*)*don*	–	1	–	2	–

* More exactly, a VOSI construction with a passive complement.

** To simplify the presentation, I have included under this heading one construction in which the matrix verb is in the passive, followed by a *to*- infinitive.

Table 3. Distribution of *biddan*, (*be*)*beodan*, *hatan*, and (*ge*)*don* by complement type, *Blickling*

	V+I	VOSI	VOSI[to]	V+þæt	V+NP+þæt
biddan	–	–	–	6	16
(*be*)*beodan*	–	–	–	2	13*
hatan	16	5	–	–	–
(*ge*)*don*	–	1	–	4	–

* I have included among the 13 occurrences of *bebeodan* V+NP+*þæt* three in which the matrix verb is in the passive.

Table 4. Distribution of *biddan*, (*be*)*beodan*, *hatan*, and (*ge*)*don* by complement type, *ChronA*

	V+I	VOSI	VOSI[to]	V+þæt	V+NP+þæt
biddan	–	–	–	1	2
(*be*)*beodan*	–	–	1	–	2
hatan	18	3	–	–	–
(*ge*)*don*	–	–	–	–	–

Table 5. Distribution of *biddan*, (*be*)*beodan*, *hatan*, and (*ge*)*don* by complement type, *Heptateuch*

	V+I	VOSI	VOSI[to]	V+þæt	V+NP+þæt
biddan	–	–	–	10	22
(*be*)*beodan*	–	1	–	4	19
hatan	29	16	–	–	1
(*ge*)*don*	–	–	–	15	–

Table 6. Distribution of *biddan*, (*be*)*beodan*, *hatan*, and (*ge*)*don* by complement type, *Appolonius*

	V+I	VOSI	VOSI[to]	V+þæt	V+NP+þæt
biddan	1	1	–	2	4
(*be*)*beodan*	–	–	–	–	–
hatan	15	4	–	–	–
(*ge*)*don*	–	–	–	–	–

Although the texts were selected on a random basis, they nonetheless present a selection of Old English prose from a variety of sources, on religious and secular themes, and span much of the recorded Old English period: *Bede* and *Blickling* are both classed as O2 by date of origin on the Helsinki Corpus scale[7], whereas the *Homilies*, the *Heptateuch* and *Appolonius* are from the O3 period and *ChronA* straddles O2 and O3. What is significant is the relative consistency of the distribution of *hatan*, across all these periods and registers, even in a heavily Latin-influenced text such as *Bede*.

The patterns observed in each text are reminiscent of those observed for Middle English in Lowrey (2002, 2013), where the verb that serves as the "central" causative, used most extensively with agentive Causers and Causees,

7 The Helsinki scale is as follows: O1 pre- 850; O2 850-950; O3 950-1050; O4 1050-1150.

is also the verb that appears most frequently in the V+I construction. In Northern dialects, for example, *gar* functions as the central, V+I causative, while *let* is used in much the same capacity in the West and the South, and *don* more commonly in the East. Alongside the central causative, we find a second verb, associated more readily with non-agentive contexts. In Early Middle English, especially, the most frequent second causative is *maken*. The Old English texts presented here display a similar pattern, with *hatan* playing the role of the agentive, V+I causative, and (*ge*)*don* that of the second causative.

The contrast between the complements selected by *hatan* and those selected by (*be*)*beodan* and by *biddan*, which could also give rise to the implicative inference discussed in 2.1, is striking. Fischer (1992: 53-54) points out that it is not uncommon for verbs of her "persuade type" (which includes verbs of ordering) to come to be used as "pure causatives", and suggests *hatan* and *biddan* as possible English examples. Its frequent use in the V+I construction suggests that *hatan* has advanced substantially further along the road to causative status than either *biddan* or (*be*)*beodan*.

3. What happens to *hatan*?

Given the high frequency with which *hatan* occurs in Old English prose texts, and its central position among the causatives, the question as to why and how it should disappear becomes even more intriguing. Unfortunately, its loss seems to coincide with the period when the Old English written standard collapses, and reliable evidence becomes thinner on the ground. Nonetheless, there are good reasons to believe that one of the causes, at least, of *hatan*'s demise was lexical competition from causative *lætan*.

3.1 The rise of the *lætan* causative

Throughout most of the Old English period, *lætan* is used, sometimes in V+I, more commonly in VOSI, with its modern so-called "permissive" sense[8]. There are signs, however, in later Old English that its meaning has begun to shift in a causative direction:

8 For the sake of convenience, I use the term "permissive" to describe the meaning expressed by modern *let*, although this is, of course, largely inaccurate. "Permission" can only be given when both the causer and the causee are Agents. A more accurate term might be that proposed by Talmy (1985: 301), "cessation of impingement", the idea that the subject of *let* ceases to impede or prevent the realisation of a situation involving the subject of the infinitive.

(15) *He gegaderode hundseofontig manna of Israhela folce, þa he* ***let*** *standan beforan ymbe utan þa eardungstowe.* (Heptateuch, 142: 12)

[He gathered seventy men of the people of Israel, whom he had stand round about the tent.]

Moses, the referent of *he*, is organising his forces, and places his men around the tent in question. A causative reading is the only one that fits the context here. Otherwise, *lætan* VOSI is used generally in the *Heptateuch* with an unambiguously permissive meaning, although the *Homilies* text also contains one example which seems to hesitate between a permissive and a causative reading:

(16) *Se mildheorta Drihten, ðe* ***læt*** *scinan his sunnan ofer ða rihtwisan and unrihtwisan gelice, and sent renas and eorðlice wæstmas godum and yfelum.* (Homilies, 406: 28)

[The merciful Lord, who lets/makes his sun shine over the righteous and unrighteous alike, and sends rains and earthly fruits to the good and evil.]

It is the spread of causative *lætan*, apparently, that spells the end for causative *hatan*. Royster (1922: 351) speaks of the "synonymity of *hatan* and *lætan* in late OE", while Timofeeva (2010: 108), noticing an increase in the frequency of *lætan* V+I, suggests that this "may well mean that the two structures [*lætan* and *hatan* V+I] started to compete in some contexts". I think that Timofeeva's intuition is correct.

3.2 *Hatan* and *lætan*, two verbs in competition

To find evidence of competition between these two verbs, I compared their relative distribution in *ChronE*, the only version of the *Chronicle* to continue on into the Early Middle English period. A significant change occurs in the entries dated after 1040. Before that date, the relative distribution of *lætan* and *hatan* follows the general Old English pattern:

Table 7. Distribution of *hatan* and *lætan*, *ChronE*, pre - 1040

	V+I	VOSI
hatan	19	1
lætan	1	2

To simplify matters, I have restricted the comparison to infinitive complements. *Lætan* is altogether rare with finite *þæt*- complements.

Other Old English narrative texts display a very similar distribution. The corresponding figures for *Appolonius*, for example, are given in Table 8:

Table 8. Distribution of *hatan* and *lætan*, *Appolonius*

	V+I	VOSI
hatan	15	4
lætan	–	1

In both cases, causative *lætan* is rare. The verb occurs most frequently in the VOSI construction, with the modern, so-called permissive meaning and does not come into competition with *hatan*. If we take the *ChronE* entries for the years from 1040 onwards, however, a very different pattern emerges:

Table 9. Distribution of *hatan* and *lætan*, *ChronE*, 1040-

	V+I	VOSI
hatan	11	1
lætan	28	4

There has been a considerable increase in the frequency of *lætan*, especially in the V+I construction, where it is used as a causative. *Lætan* is now twice as frequent as *hatan* in this type of context. Similarly, *hatan*, present in all but one of the occurrences of causative V+I in the first part of *ChronE*, occurs in less than 29% of those found in the second part, and is apparently in decline.

A closer look at the data reveals that *hatan* and *lætan* V+I now appear in exactly the same kinds of environment, principally with agentive causers and (implicit) causees, and with the same types of verb. Compare, for instance, the 12th century entry involving *let niman / let gebringon* in (18) with the earlier *het nimon / gebringon* in (19):

(17) *And se cyng* […] *þone biscop Rannulf of Dunholme* ***let*** *niman.* ⁊ *into þam ture on Lundene* ***let*** *gebringon.* ⁊ *þær healdan.* (ChronE, 1100)

[And the king […] had bishop Ranulf of Durham taken & brought to the Tower of London & held there.]

(18) *se cyng þa genam eall heora æhta.* ⁊ ***het*** *nimon Sigeferðes lafe* ⁊ *gebringon binnon Mealdelmes byrig*. (ChronE, 1015)

[the king then took all their possessions & had Siegferth's widow taken & brought to Malmsbury.]

The predicates embedded beneath both verbs fit the profile for V+I defined in 2.2. They are almost invariably agentive, transitive, and generally telic in character. In the same way, *het makian* appears in (20) in much the same type of context as *let* (*ge*)*makian* in (21) & (22):

(19) *Ac þa ða se cyng geseah þæt he hine gewinnan ne mihte. þa* ***het*** *he makian ænne castel to foran Bebbaburh.* (ChronE, 1095)

[But when the king saw that he could not win it, then he had a castle built just outside Bamborough.]

(20) *⁊ se cyng ferde ⁊ besæt þone castel æt Arundel. ac þa he hine swa hraðe gewinnan ne mihte. he* ***let*** *þær toforan castelas gemakian*. (ChronE, 1102)

[And the king went forth and laid siege to the castle at Arundel, but as he could not win it straight away, he had castles built before it.]

(21) *Ac þa ða se cyng geseah þæt he nan þingc his willes þær geforðian ne mihte. he ongean into þison lande for. ⁊ hraðe æfter þam. he be þam gemæron castelas* ***let*** *gemakian*. (ChronE, 1097)

[But when the king saw that he could accomplish nothing of what he wanted there, he returned into this land and immediately afterwards he had castles built near the borders.]

It would appear, then, that the two verbs are indeed in competition. The new form, of course, wins out. *Hatan* V+I appears in the *Chronicle* for the last time in the entry dated 1096. Interestingly, causative *lætan* V+I is always implicative, a further indication that the structure it replaces, *hatan* V+I, was used implicatively too.

Evidence that the decline of causative *hatan* continues into Middle English is provided by La3amon's *Brut*, a late 12th century text of Western origin, in the dialect that conserves the greatest number of West Saxon features:

Table 10. Distribution of *haten* and *let* by complement type, *Brut*, ll 9,000-14,500

	V+I	VOSI	V+þæt	V+NP+þæt
haten	3	64	6	1
let	46	27	–	–

Table 10 shows the distribution of both *haten* and *let* across some 5,500 lines of La3amon's poem. It shows a marked rise in the frequency of *lætan/let*,

which can be directly ascribed to increased causative use, principally in the V+I construction. *Let* has now replaced *haten* as the agentive, V+I causative. *Haten* remains frequent, but is now largely confined to the VOSI construction, where it always has the non-implicative 'order' sense, as in (23):

(22) *Arður* ***hehte*** *þene king cume; and bringen his aldeste sune / and he swa dude sone; þe king of Denemarke.* (Brut, 11 652)

[Arthur ordered the king to come, and bring his eldest son, and he, the king of Denmark, did so straight away.]

The causing and the caused events are presented as independent, the author adding the *do so* phrase to signify explicitly that the action ordered by Arthur was indeed performed. The decline in the use of *haten* at this stage concerns only causative V+I contexts, from which it has been evinced by *let* (in the Western dialect) in what appears to be a fairly straightforward lexical swap. In purely manipulative, ordering contexts, however, implicative *let* and *haten* do not come into competition, and the latter continues to function much as it had before in such circumstances. And of course, no competition arises in the 'naming' sense. *Haten* continues to occur with the latter meaning both as an ordinary passive and as a medio-passive.

3.3 Other possible factors contributing to the loss of causative *hatan*

Mention should perhaps be made here of an important word order change that takes place in English at about the time when causative *hatan* is lost and which, as Fischer (1992) points out, directly affects causative constructions: the shift from underlying SOV to SVO order. This is one of the factors suggested by Fischer to explain the spread of the "learned AcI construction", and ultimately the loss of V+I.

Fischer examines strings involving a causative verb (*let*, in her Middle English examples), an intermediate NP and an infinitive. Of particular interest here are her "subject construction", in which the intervening NP is the subject of the infinitive (our VOSI with an intransitive infinitive), and what she calls the "object construction", where the NP is the object of the infinitive whose subject is left unexpressed (our V+I). As Fischer observes, the change from SOV to SVO will cause speakers increasingly to analyse the NP in sequences of this type as the subject of the infinitive. The idea is interesting in view of the tendency mentioned in 2.2 for V+I to occur principally with transitive infinitives. In contexts of this type, VOSI and

V+I would have been in complementary distribution. With the lone NP appearing in what is henceforth seen as a subject position, it is easy to imagine how the V+I construction might have been felt to be anomalous, and become obsolete.

It is not clear, though, why this change should have affected *hatan*. One might be tempted to suggest that, as the older form, *hatan* could have been closely associated with the earlier SOV order, and given way to a newer verb at the same time as the new word order supplanted the old. This, however, seems not to have been the case. First of all, as Fischer (1992: 50) points out, the transition to SOV does not immediately cause the loss of V+I. Instead, the object NP is simply sent, initially, to the new post-verbal object position, a syntactic option that remains productive until the end of the Middle English period: Lowrey (2002) notes at least 147 unambiguous occurrences of causative *let* V+I in Malory's late 15th century *Morte d'Arthur*, for instance, with basic SVO order. Furthermore, the fact that the loss of SOV V+I does not lead directly to the loss of *hatan* is demonstrated by the existence of a number of attested examples of *hatan* V+I in later Old English texts with the new SVO order, as in (9) and (20) above or again in (24), below:

(23) *Ða eode heo ut and* ***het*** *feccan hire hearpan*. (Appolonius, 24: 26)
[Then she went out and had her harp fetched.]

In none of these examples is the object NP sent to the end because of exceptional "heaviness", a factor that sometimes caused the object NP to appear in post-infinitival position even under SOV. Clearly, *hatan* V+I continued to be used, initially at least, with the new SVO order. Lexical rivalry with *lætan* remains the probable primary cause of the disappearance of causative *hatan*.

4. Conclusion

There seems to be ample evidence to support Royster's (1918) view that *hatan* did indeed function as a fully fledged causative, at least in the Old English prose narratives, when some kind of hierarchical relationship between the causer and the causee was involved. The implicative or perfective inference, to use Royster's terminology, never seems to fully lexicalise, however. *Hatan* expresses a range of meanings, from the simple giving of an order, the so-called manipulative sense, to the idea that an order was not only given

but also carried out. It has also been shown that the choice of complement construction goes some way to determining the meaning. In other words, causative meaning is not the exclusive preserve of the causative verb alone, but is constructed rather by the association in context of a given verb with a given complement type.

Further confirmation of *hatan*'s causative status is provided by the circumstances of its loss. Although *hatan* no longer exists at all in Modern English, we have seen that causative meaning is lost before its other meanings, due to lexical competition from implicative *lætan*. This would again seem to indicate that *hatan* was very probably felt to be an implicative verb in precisely those contexts in which *lætan* comes to replace it. Non-implicative *hatan* survives, however, because at no stage is it concerned by competiton from *lætan*.

Of course, a number of questions remain to be answered, not least of which concerns the reason why *hatan* and *lætan* came to compete. Is it a case of *hatan*'s decline causing *lætan* to shift towards more frequent causative use, so as to fill a slot left vacant, or is it an expansion of the variational space of *lætan* to include more causative meanings that forces *hatan* out of the causative sub-system? The odds would appear to favour the second hypothesis. The trend which sees *lætan*, even in VOSI constructions, begin to acquire causative meaning in late West Saxon Old English, and which continues on into early Western Middle English, probably indicates that it is the use of *lætan* which expands, creating a push-chain effect. But what triggers the increased frequency of *lætan*? One can also wonder, given the rapidity with which the change takes place once the West Saxon literary standard has collapsed, to what extent *hatan* may have been kept alive "artificially" in the late West Saxon written standard, long after *lætan* had replaced it in everyday speech. Further research will obviously be necessary if we are to attempt to answer these questions.

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Popularising scientific discourse for an academic audience: The case of Nobel lectures

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ABSTRACT

The language of popularisation has been the object of in-depth investigations from various perspectives. The overall idea is that it is not a distorted simplification of scientific knowledge for non-specialists but rather a reformulation and re-contextualization of scientific knowledge in a more direct form. Starting from this assumption, the present research aims at disclosing how and to what extent scientific knowledge is rendered in popularised language by members of the medical academic community for an academic audience, such as that of the Nobel Prize lectures. The investigation seems to suggest that there are differences in the communication strategies adopted to render scientific knowledge into effective popularised language, constructed as a set of communicative events which involve the transformation and recontextualization of specialist discourse. In this sense, it is primarily featured by the properties of the communicative context in which it takes place: participants and their role, their purposes, beliefs and knowledge.

1. Introduction

The language of popularisation has recently attracted interest in the field of linguistics. Attempts have been made to define the scope and boundaries of the discourse of popularisation (Hilgartner 1990; Jacobi 1990; Thoiron – Béjoint 1991; Cooter – Pumfrey 1994; Calsamiglia 2003; Gotti 2003; Myers 2003; Calsamiglia – van Dijk 2004; Paul 2004; de Oliveira – Pagano 2006; Giannoni 2008; Leake 2012). Other investigations have paid attention to the role played by the media in popularisation while bridging the gap between scientific knowledge and lay experience (Barton 1998; Beacco et al. 2002; Ciapuscio 2003; Moirand 2003; Dossena 2008), which can be expressed even through

metaphorization (Leane 2001; Skorcynska 2001; Knudsen 2003; Pramling – Säljö 2007). Research has also focussed on the language of popularisation for pedagogical purposes (Sharma 1972; Parkinson – Adendorff 2004, 2005).

The dominant view of popularisation is that it is a process by means of which scientific findings are disseminated outside the communities that produce, and to a certain extent 'own', such knowledge (Giannoni 2008: 212). This overriding yet naïve perspective of popularisation is based on the assumption that it is a simplification of specialized knowledge for non-specialists (Hilgartner 1990: 519; Myers 2003: 265). Such a distorted concept lies in the belief that genuine scientific knowledge is available to experts, whereas popularised knowledge targets non-experts. It also assumes that two types of discourse exist, one within and one outside scientific institutions and that popularisation is realized as a translation from one discourse to the other. Such a misrepresentation of popularisation implies the existence of an unbalanced power-relationship between experts and non-experts in which knowledge is assigned to experts (Myers 2003: 266). Yet scientific knowledge is expressed in as many contexts as possible, and a distinction based on scientific knowledge vs. popularised knowledge in turn requires the definition of the borders existing between 'genuine' experts or specialists and 'popularised' audiences (Hilgartner 1990: 525, 529). Indeed, as rightly claimed by Myers (2003: 267), popularisation is a process involving different actors, institutions, and forms of authority.

As a matter of fact, the boundary between genuine scientific knowledge and popularised representations is anything but clear (Hilgartner 1990: 524). Popularisation is indeed a matter of degree and operates along a continuum, going from researchers to the educated public with practitioners positioned somewhere in the middle (Hilgartner 1990; Myers 2003; Giannoni 2008). The contexts within which this continuum operates range "from laboratory 'shop talk', to technical seminars, to scientific papers in journals, to literature reviews, grant proposals, textbooks, policy documents, and mass media accounts" (Hilgartner 1990: 524).

Probably, the ambivalence of the concept of popularisation lies in the term itself: by popularisation we mean not only re-contextualizing and reformulating a (scientific) source text to allow for comprehension and accessibility by various audiences (Ciapuscio 2003: 210; de Oliveira/Pagano 2006: 626), who can thus elaborate lay versions of scientific knowledge to be integrated with existing knowledge; we also mean the diffusion of scientific texts among members of the scientific community stepping outside their very limited specialism (Myers 2003). There is therefore a need for disambiguating

the two forms of popularisation. On the one hand, there is the discourse of popularised science; on the other, the discourse of scientific popularisation. As we can see from Table 1 below, the discourse of popularised science texts refers to those texts which are used to set scientific knowledge in a readable and meaningful way addressed to non-specialist readers; the discourse of scientific popularisation refers to the type of texts used by expert members of the scientific community to disseminate scientific knowledge across specializations.

Table 1. Discourses of popularisation

	Discourse of popularised science	Discourse of scientific popularisation
Target	laymen, wider public	members of scientific community
Text type	mass media accounts; web documents (blogs; forums); government policy documents.	laboratory talk; grant proposals; project delivery; textbooks; mass media accounts; web documents (blogs; forums); policy documents.
Purpose	knowledge construction	knowledge dissemination

In other words, the discourses of popularisation are shaped by target and purpose (Gotti 2003). We need therefore to construct a new way of representing popularisation across a continuum going from popularised science to scientific popularisation (cf. Fig. 1).

Figure 1. Popularisation

To the best of my knowledge, the only studies carried out on the way in which discourse is 'popularised' by expert members of the scientific community for the sake of (a) professionals belonging to the same community and (b) members of a professional group of experts whose expertise is not within the same field as that of authors, are the ones by Giannoni (2008) and by Paul (2004), respectively. It is therefore the aim of this research to disclose how and to what extent scientific knowledge is disseminated as scientific

popularisation by the members of the medical academic community for other professionals outside the same profession. More precisely, I will investigate in what ways this occurs at such a prestigious academic event as the Nobel Prize Lecture. By comparing Nobel Prize Winner Lectures (NL) with the corresponding Research Article (RA)[1] the winners wrote and for which they were awarded, I will use a Corpus Linguistics approach in order to detect the key semantic domains in NL differing from the RA. This will show how popularisation can be achieved despite any possible professional-related conditioning effects. The discussion of the relative results will be carried out in the following paragraphs.

2. Methodological approach

The study analyses the NLs held in 2009, given by two Nobel Prize winners for Medicine or Physiology: Elizabeth H. Blackburn, who discussed the NL "Telomeres and Telomerase: The Means to the End" and Carol W. Greider, who presented the NL "Telomerase Discovery: The Excitement of Putting Together Pieces of the Puzzle" (with the related videos and slides). These will be later compared with the RA that the two Nobel Prize winners wrote back in 1985, that is "Identification of a specific telomere terminal transferase activity in Tetrahymena extracts"[2], where they scientifically described their discovery. The choice of these lectures was determined by the fact that (a) the two winners worked together in the project leading them to the telomerase discovery; (b) the two Nobel Laureates wrote together the RA about the telomerase discovery, which was eventually published in *Cell.*

The Nobel lectures were downloaded from www.nobelprize.org[3], and the research article was provided by the University of Bergamo Interlibrary Loan Office. Copyright permission to use and reproduce the Nobel Lectures was granted by the Nobel Prize Foundation[4]; copyright permission to use the above-mentioned research article for personal and non-commercial use is granted by *Cell* at http://www.cell.com/cellpress/TermsandConditions.

1 The NLs corpus comprises 23,875 words; the RA corpus includes 7,081 words.

2 The article was published in *Cell* (1985) 43(2/1): 405-13.

3 Elizabeth H. Blackburn's Lecture, "Telomeres and Telomerase: The Means to the End" was downloaded from http://www.nobelprize.org/nobel_prizes/medicine/laureates/2009/blackburn-lecture.html and Carol W. Greider's one, "Telomerase Discovery: The Excitement of Putting Together Pieces of the Puzzle" from http://www.nobelprize.org/nobel_prizes/medicine/laureates/2009/greider-lecture.html [27/09/2012].

4 Personal email received on April 12, 2012.

The documents were saved in pdf format and later transformed in text files for their use in concordancing software programs. The quantitative (Biber et al. 2007; Dörnyei 2007) and qualitative (Coffey – Atkinson 1996; Miles – Huberman 1994) analyses carried out in my research are based either on automatic or manual searches, or both. For the computer-based counts, Wordsmith Tool 4.0 (Scott 2007) and Wmatrix3[5] (Rayson 2009) search options have been used. The results, based on log-likelihood statistics ($p < 0.01$) and presented in standardised figures (per 1,000 words), were then accompanied by manual correction to rule out any non-relevant cases. For a classification of key semantic domains in the corpus, I scanned the target texts twice: the first time to locate any occurrence of such features; the second time to verify their actual status on contextual and pragmatic grounds.

3. Background

3.1 The Nobel Prize and the NL

The Nobel Prize in Physiology or Medicine, as described in Alfred Nobel's will, is dedicated to "the person who shall have made the most important discovery within the domain of physiology or medicine" (http://www.nobelprizemedicine.org/?page_id=2266 [18/10/2012]). According to the Nobel Foundation statutes, the Nobel Laureates are required "to give a lecture on a subject connected with the work for which the prize has been awarded" (http://www.nobelprize.org/nobel_ prizes/medicine/video_lectures.html [18/10/2012]). All NLs are theoretically open to the general public. It is usually rather difficult to find a place at the medicine lectures, since the main auditorium at Karolinska Institutet is quite small[6]. For this reason, they are also transmitted by video link to two other adjacent lecture halls. According to Tatiana Goriatcheva, Administrator of the Nobel Committee for Physiology or Medicine[7], the audience mainly consists of professors, scientists and research students from Karolinska Institutet as well as Stockholm University, and the Nobel Laureates know in advance that it is this type of audience they are targeting.

5 Available at http://ucrel.lancs.ac.uk/wmatrix3.html.

6 Email communication by Jonna Petterson Informatör/ Public Relations Officer Nobelstiftelsen (Oct. 8, 2012).

7 Email communication by Tatiana Goriatcheva, Administrator of the Nobel Committee for Physiology or Medicine (Oct 18, 2012).

The 2009 Nobel Prize for Physiology or Medicine was awarded to Elizabeth H. Blackburn, Carol W. Greider, and Jack W. Szostack "for the discovery of how chromosomes are protected by telomeres and the enzyme telomerase" (http://www.nobelprize.org/nobel_prizes/medicine/laureates/2009/blackburn-diploma.html, [20/10/2012]). The NLs the two Laureates held in Norway were about this outstanding discovery.

4. Discussion

At a superficial level, the most evident difference between the RA and the NLs lies in the type of headings and subheadings they have, as we can see from Table 2 below.

Table 2. Different headings and subheadings

Headings & subheadings		
RA	Greider's Lecture	Blackburn's lecture
1	2	3
Summary **Introduction** **Results** • Cell Free Extracts Contain a Telomere Elongation Acfivity That Incorporates Only dGTP and dTTP • Addition of Teiomeric Sequence Repeats Is Template Independent • The Sequence $(TTGGGG)_n$ Is Added to the Synthetic Telomere Primer • Tetrahymena $(TTGGGG)_n$ Repeats Are Added In Vitro to a Yeast Teiomeric Oligomer	Identifying the puzzle: telomere sequences defined Curious facts about telomeres: some pieces of the puzzle Collecting more pieces of the puzzle: telomere sequence addition Looking for telomere elongation: defining the edges of the puzzle A puzzle-solving strategy: getting the assay right Testing ourselves: do the pieces really fit, or are we forcing them? The next part of the puzzle: sequence information	**INTRODUCTION** **BEGINNING THE ENDS** *"You corn kernels, …may you succeed, may you be accurate."* Popul Vuh **THE TELOMERE CONCEPT** *"This is the beginning of the end."* Charles Maurice de Talleyrand 1754-1838 (announcing Napoleon's defeat at Borodino). **DIVING INTO POND WATER** *"Now this is not the end. It is not even the beginning of the end. But it is, perhaps the end of the beginning."* Sir Winston Churchill, Speech in November 1942 **THE LINES OF EVIDENCE THAT LED TO THE CONCEPT THAT TELOMERASE ACTIVITY EXISTED TETRAHYMENA CELLS BY A BIOCHEMICAL APPROACH** *"If your knees aren't green by the end of the day, you ought to seriously*

1	2	3
• Elongation Activity Is Present in Both Newly Developing and Vegetative Tetrahymena Cells • Enzymatic Properties of Telomere Elongation **Discussion** **Experimental Procedures** • **Cell Cultures** • **Extract Preparation** • **Synthetic Oligomers** • **In Vitro Reaction Conditions** • **Gel Electrophoresis** • **Quantitative Incorporation Assays** • **Preparation of S100 Fractions and Micrococcal Nuclease Digestion** **Acknowledgments** **References**	Following the clues: is there a template? A change in venue: seeing the puzzle from a different perspective Is this the right puzzle piece? Models can show the solution to the puzzle Solutions to puzzles show the way to more interesting questions **Acknowledgments** **References**	*re-examine your life."* Bill Watterson (American Author of the comic strip Calvin & Hobbes, b. 1958) **THE DISCOVERY OF TELOMERASE** *"…to make an end is to make a beginning."* T.S. Eliot 1888-1965, Four Quartets: "Little Gidding" **DEMONSTRATION OF THE REVERSE TRANSCRIPTASE ACTION OF TELOMERASE *IN VIVO*** *"They didn't have to walk around to see what was under the sky; they just stayed where they were. [And] as they looked, their knowledge became intense."* Popul Vuh, p. 165. **DEMONSTRATION OF THE NEED FOR TELOMERASE FOR CELL GROWTH** *"Like as the waves make towards the pebbled shore, So do our minutes hasten to their end."* William Shakespeare, 1564–1616, Sonnet 60. **TELOMERES AS PROTEIN-DNA COMPLEXES** *"Having well polished the whole bow, he added a golden tip."* Homer ("Smyrns of Chios"), The Iliad (bk. IV, III). **TELOMERES AS A DYNAMIC HOMEOSTATIC SYSTEM** *"Stability is not immobility."* Klemens von Metternich, Austrian statesman, 1773–1859. **SIMILAR MOLECULAR MACHINERIES: DIFFERENT LIFE HISTORIES** *"Have regard to the end."* [*Lat., Finem respice* (*or Respice finem*).] Chilo of Sparta (Chilon).

1	2	3
		TELOMERASE IN HUMAN HEALTH AND DISEASE a) *Telomerase in cancer cells* *"We ought to consider the end in everything." [Fr., En toute chose il faut considerer la fin.]* Jean de la Fontaine, Fables (III, 5). b) *Telomere maintenance and human life histories "The end crowns all, And that old common arbitrator, Time, Will one day end it."* William Shakespeare 1564–1616, The History of Troilus and Cressida (Hector act IV, v). **ACKNOWLEDGEMENTS** **REFERENCES**

As we all know, RAs need to have a distribution of information following the IMRD moves and steps that characterize each of the RA sections (Maci 2012). In addition to the IMRD structure, RA authors have to present an abstract, the purpose of which is "to meet the need to share information within the community of specialists who are constantly seeking to connect the findings of other researchers to their own" (Giunchi 2002: 277). RAs begin by presenting the context and background information, and must end by stating outcomes and research conclusions. This is clearly perceivable from the RA taken into consideration here, which follows the IMRD pattern with a violation in the sense that the *Methods* section is inserted *after* the *Discussion*. This move-shifting is, in my opinion, determined by the urgency underlying the importance of the discovery, which could be rhetorically emphasized only by breaking with the conservatism of the IMRD structure and transferring the methodological approach which led to the discovery of the telomerase enzyme to the end of the paper.

In terms of genre structure, the NLs have a story line as all narratives do: the narrative path defined by the paragraph headlines creates human-interest stories. In Greider's Lecture, the discovery was the solving of a *puzzle*; in that of Blackburn, the discovery, related to the *end* of the DNA message, is shown as metaphorically represented by history, politics and literature. In addition, this story has a beginning (found, for example, in excerpts (1) and (4), taken from Greider's and Blackburn's lectures, respectively), a complicating action, a resolution (as expressed in quotes (2) and (5) of

Greider's and Blackburn's lectures), and an evaluation (seen in passages (3) and (6) quoted from Greider's and Blackburn's lectures, respectively) in much the same way as indicated by Labov's schemata (2001, 2002) of fully--formed oral narratives[8]:

(1) Tracing the beginnings of the interwoven stories of science can be arbitrary, as beginnings are so often lost in the mists of time. For me, arguably the story of telomeres and telomerase began thousands of years ago […] (Blackburn 2009: 257)

(2) I tried to identify the proteins on *Tetrahymena* telomeres, but did not succeed in this. It was others' work, initially using yeast molecular genetic approaches, that unlocked the door to telomeric proteins. (Blackburn 2009: 272)

(3) Certainly, these findings and implications are taking the field of telomere and telomerase biology into realms far from the single-celled pond microorganisms in which I began this work. (Blackburn 2009: 278)

(4) The story of telomerase discovery is a story of the thrill of putting pieces of a puzzle together to find something new. This story represents a paradigm for curiosity-driven research and, like many other stories of fundamental discovery, shows that important clinical insights can come from unlikely places. (Greider 2009: 297)

(5) At first it was frustrating: if telomerase was already being inactivated by Oligo3 and adding RNase H had no further effect, how could I do the experiment? This frustration soon faded when, having talked about this result with my friends and puzzling more, I realized there was a much more interesting explanation for these results. […] (Greider 2009: 312)

(6) When I went to the lab to develop the X-ray film, I was thrilled to see a repeating pattern of elongation products that extended up the gel. (Figure 5B). (Greider 2009: 315)

In narratives, the chronological order of events is usually interrupted by flashbacks, mainly responsible for the to-and-fro course typical of story--telling, thanks to many endo- and exophoric references that are meant

8 According to Labov, oral narratives are structured by the following parts: *Abstract*, *Orientation*, *Complicating action*, *Resolution*, *Coda* and *Evaluation*, with the latter pervading all the other components.

to facilitate comprehension. A similar pattern seems to be followed in Blackburn's and Greider's NLs; however, the redundancy created by flash-backs does not seem to be necessary as the scientists have elaborated a *written* NL with referential signposts that allow readers to understand and make sense of their texts. The chronological order of the event is, thus, respected.

The NLs can be seen as a story-telling of how the two scientists started their research which brought them to the discovery and, at the same time, an explanation of the scientific value of the discovery itself. The opening paragraphs of their lectures are reported in excerpt (1) and (4), which, in Labov's terms, can be considered the *beginning*. After speaking for some time about both Blackburn's lab staff (where Ms Greider was a post-doc researcher) and the way in which they worked together, the two scientists introduce the *complicating action* in their NL narratives, which is here quoted in examples (2) and (4): both Blackburn and Greider report their frustration and inability to find any explanations for their intuition. These excerpts, however, contain the first hint at the *resolution*, the way in which the scientists found the solution to their problems. Excerpts (3) and (6) offer, respectively, Blackburn's and Greider's indication of their *evaluation* of the whole story: as Labov indicates (2001, 2002), *evaluation* may overlap any of the oral narrative components and does not necessarily follow the chronological order of the events (as is the case of the excerpt (6) here reported).

Interestingly, all these narratives are accompanied by figures which are extremely technical and are clearly for a specialized audience, as we can see in Figure 2 below, and which are not present in the original research article:

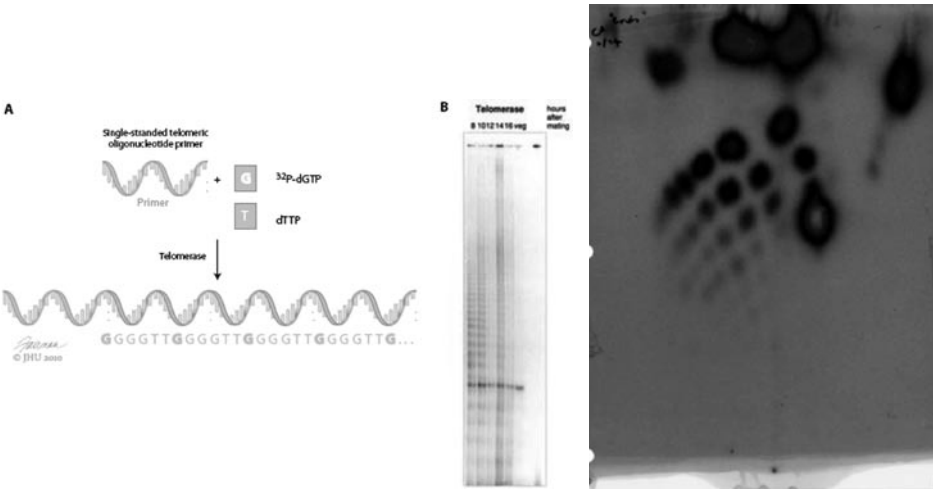

Figure 2. Use of specialized figures (Greider 2009: 350 – left; Blackburn 2009: 261 – right)

As Giunchi (2002: 288) claims, these narrative features entail the tendency to relate discourse in medical popular texts to the real world of the reader through the inclusion of constituent elements such as those that "stress the local angle" by providing the reader with technical explanations of concepts and principles upon which research is based.

In order to see what popularised angle things are seen from in the NL, I used WMatrix software to compare the two subcorpora on the basis of their semantic fields[9]. The summary of the results (only the top 20 semantic fields out of 199) are offered in Table 3 below. As we can see, the NL semantic fields pivot around the technicalities of the hard sciences. Nevertheless, there are some semantic areas, namely *person pronouns &* (*person*) *adjectives*[10]; *not understanding*; *boosters*; *farming and horticulture*; *food*; *thought and belief*, which are unexpected as they do not seem to pertain to scientific discourse, as indirectly confirmed by their total absence as key semantic domains in the RA corpus.

Table 3. Nobel Lecture (left) vs. research paper (right) key semantic domains

Key semantic domains	
Nobel Lectures	Research Article
1	2
person pronouns & adjectives	scholar surnames and enzyme names
likely	numbers (figures and years)
(chemical/physiological) substance and material	genetic abbreviations
interested, excited and energetic	physical structure of enzymatic DNA
Time: period	measure unity

9 WMatrix automatically tags words at the lexical, grammatical and semantic level. Computation is based on log-likelihood statistics ($p < 0.01$) to show key items at the top. Semantic tagging is generated by USAS, the UCREL (University Centre for Computer Corpus Research on Language, Lancaster) semantic analysis system, a software tool for undertaking the automatic semantic analysis of English spoken and written data.

10 It is true that (*person*) *pronoun & adjectives* are perceived as belonging to a grammatical category rather than a semantic one. Nevertheless, within the 21 USAS semantic categories listed in hierarchical order, the last one is denoted as "Z: names and grammatical words" (http://ucrel.lancs.ac.uk/usas/). Such a category includes deictical items which help the construction of the contextual reference necessary for meaning-making. Pragmatics, too, considers pronouns, through grammatical expression of deixis, as semantically constructing the speaker's context (cf. Huang 2007).

1	2
People (human disease/cell population)	(chemical) quantity
Not understanding (puzzle)	(chemical) inclusion
Existing (verb *to be*)	(physical) quantity – little
comparing: different	(physical) quantity – much/many
telomere	DNA structural repetition
knowledgeable	cell fusion
time: beginning	(chemical) substances and materials (solid)
getting and possession (have/get/ obtain/maintain)	DNA message transmission
degree: boosters	knowledge
part (microscopic enzimatic)	(chemical) marker
work and employment (lab)	long/tall/wide
science and technology (experiments and radioactivity)	(chemical) preparation
cause-effect/connection	ratio
time period: short	quantity increase
disease (cancer/dementia)	absence
time: old age (aging and senescence)	measurement: volume
linear order (DNA and RNA sequence)	(chemical) substance: liquid
trying hard (experimental attempts)	(chemical) colour – darkness
important (medical significance)	(chemical) dry
moving, coming, going (experimental process)	(chemical) colour – light
alive (cell immortality)	temperature: hot
farming and horticulture	general actions /making
anatomy and physiology (chromosome and cells)	substance and material: liquid
food	(chemical) reaction
thought and belief	temperature

While some key semantic domains, such as the *substance and material* domain, are present both in NLs and RA, the complete absence of the semantic domains listed by WMatrix as *person pronouns & adjectives*; *not*

understanding; *boosters*; *farming and horticulture*; *food*; *thought and belief* in the RA corpus suggests that the lexical items they include can be regarded as strategic indicators of popularised forms of knowledge dissemination. For this reason, therefore, in the following paragraphs I will concentrate on their description. Leaving aside, for the moment, the semantic field categorized by WMatrix as *Z: names and grammatical words* which the subcategory *Z8 pronouns etc.*[11] belong to (and for which an analysis will be provided in the following paragraphs), here I will consider the categories of *farming and horticulture*; *food*; *interested, excited and energetic*; *not understanding*; *boosters*; *thought and belief*.

The semantic categories of *farming and horticulture* and *food* (both of them belonging to the *F – Food & Farming* macro-category computed by WMatrix) can be accepted as borderline between specialised and non-specialised semantic areas (and consequently, between popularised and technical language) because of the presence of telomerase in food or farming products, as Greider and Blackburn (1985: 405) indicate in their RA (my emphasis):

(7) Structural and functional studies of chromosomes and linear piasmids in yeast have shown that the only DNA elements essential for telomere function are the simple G+C-rich teiomeric sequence repeats, in the correct orientation

and reconfirm in their own NLs:

(8) The identification of tandem repeats in the telomeres of Tetrahymena was followed by the identification of similar repeats in the telomeres of other organisms, including Oxytricha, Physarum, *yeast*, and trypanosomes. (Greider 2009: 297)

(9) It was known that "like begets like", so that if one used the kernels from the biggest ears of *corn* in the planting for next year, a better *crop* would result. (Blackburn 2009: 257)

That the semantic categories of *farming & horticulture* and *food* can be regarded as having a scientific rather than popularised value seems to be indirectly confirmed by the fact that the NL keyword list generated by a comparison

11 See http://www.comp.lancs.ac.uk/ucrel/usas/.

between the NLs and the RA[12] does not contain any occurrences of either *crop* or *corn* as keywords (as seen in example (9) above). Furthermore, though the item *yeast* (27 hits, STTR[13] 1.13) is included as an NL keyword, it has an extremely weak keyness, since it occupies position no. 1,670[14]. In addition, a closer analysis of the *F Food & Farming* category elaborated by WMatrix indicates that this group is characterized by the words (*orto-/phyro-*)*phosphate* (27 hits STTR 1.13), *bicarbonate* (3 hits, STTR 0.13), referring to chemical substances, and by the words *cultivation* (12 hits, STTR 0.50) and *field* (16 hits, STTR 0.67), for which their metaphorical meanings related to the concepts of *virus cultivation* and *chemical field*, respectively must be intended. Interestingly, none of these words is found in the RA, which may indicate that they are used in the NLs because of their popularising contribution to the NLs themselves.

The semantic area of *interested, excited and energetic* (see Figure 3 below), belonging to the macro-category defined in WMatrix as *X Psychological actions, states & processes*[15], reveals the presence of such terms as *interest** (16 hits, STTR 0.67), *curious* (7 hits, STTR 0.29), *excit** (5 hits, STTR 0.20) and *active* (20 hits, STTR 0.83), which are all absent in the RA.

While *interest** and *active* are ambivalent as they can refer both to the author's concern or interest in the activity done in the experiment and also to the scientific relevance (*interest**) and activity of the chemical elements involved in the experiment itself (*active*), the words *excit** and *curious* are indications of the author's personal evaluation of the lab practice and the consequent discovery (my emphasis):

(10) Drawing out the telomere elongation model helped to clarify my thinking about telomerase. Thinking about the model also immediately raised several new questions that I was *curious* to address. For

12 See Tables 4 and 5 below.

13 In Corpus Linguistics, the ratio between types and tokens is indicated by its acronym TTR, where *tokens* are the running words of the corpus, i.e., the number of words contained in the corpus; *types* refer to each different kind of word in a corpus. Since the resulting figure may vary according to the length of the texts forming the corpus, the TTR is normally *standardized*; in other words, in order to be sure that the TTR represents fair results and percentages, the ratio is calculated for the first 1,000 running words, then calculated afresh for the next 1,000, and so on to the end of the text or corpus (see Hunston 2002: 17).

14 That *yeast* has no keyness in the NL corpus does not come as a surprise, since the lexeme is also found in the RA with 37 hits (STTR 5.22), which seems to confirm its use as a specialised term.

15 See http://www.comp.lancs.ac.uk/ucrel/usas/.

t yet also at times wonderfully	exciting	. The willingness to keep an ope
damentally this story shows how	curiosity	and an interest in solving inter
tory shows how curiosity and an	interest	in solving interesting problems
sity and an interest in solving	interesting	problems can lead to a lifetime
blems can lead to a lifetime of	exciting	discoveries . IDENTIFYING THE PU
, albeit with some variation .	CURIOUS	FACTS ABOUT TELOMERES : SOME PIE
E Liz Blackburn and others were	interested	to know how the simple repeats f
was first identified , several	curious	facts about telomeres were uncov
seen in gel in part A. A second	curious	fact was that the telomeres in t
t a conference , they were both	interested	in DNA ends . They knew about th
DNA ends . They knew about the	curious	structure of telomeres and their
, Liz and Jack noticed another	curious	fact : the Tetrahymena telomeres
hey had started out . They were	curious	to know why . So , together with
iz and Jack the existence of an	active	elongation mechanism in yeast ,
incorporate DNA precursors more	readily	than a piece of DNA containing n
hat if there was an enzyme that	actively	elongated telomeres , we might b
lly present in the nuclei to be	active	. We also added radiolabeled dCT
of endogenous DNA . These were	exciting	times. once I could repeatedly s
come in to the lab every day ,	eager	to test the next set of experime
Cech , who had a long-standing	interest	in both telomeres and RNA , was
h RNAse . He agreed that was an	interesting	experiment . Throughout the day
erase) . I would then take the	active	fractions and subject them to an
gure 7B) . I then examined the	active	fraction to look for an RNA that
ays present when telomerase was	active	. I purified the RNAs from activ
tive . I purified the RNAs from	active	fractions , and labeled them wit
manner , after each column the	active	fractions were loaded on a subse
ine agarose B) Gel showing the	active	fractions for each of the column
NAs , all RNAs from each of the	active	fractions was end labeled with 3
tes . To do this , the RNA s of	interest	were cut out of a high-resolutio
inants that were present in the	active	fractions due to the high abunda
RNA as the best candidate ; my	interest	was really a hunch since I had s
uzzle . Since telomerase was an	interesting	enzyme and our experiments clear
uence on the sequencing gel was	exciting	, as it mirrored what would be e
THE RIGHT PUZZLE PIECE ? It was	exhilarating	to have the sequence of an RNA t
realized there was a much more	interesting	explanation for these results .
Oligo 3 binds to and blocks the	active	site of telomerase . This inhibi
TO PUZZLES SHOW THE WAY TO MORE	INTERESTING	QUESTIONS Drawing out the telome
everal new questions that I was	curious	to address . For example , does
th . But the key is to keep the	excitement	and to follow the leads that are

Figure 3. *Interested, excited and energetic* semantic field

> example, does the proposed translocation step actually occur? […] This question, which I had not thought of before I drew the model, was suddenly a burning one for me. I went on to tackle this next puzzle in a later paper (Greider, 1991). Many other questions arose as we continued our work on telomerase. […] Putting together puzzle pieces is challenging, fun, and extremely gratifying, especially when they lead to new understanding in biology. This process of making a hypothesis and following leads is not a linear one: there are many twists and turns in the path. But the key is to keep the *excitement* and to follow the leads that are the most rewarding. (Greider 2009: 315)

The excerpt in (10) above seems to represent in words what goes on in the scientist's mind (which is also explicitly indicated by the nominalised forms *thinking* – which in the NLs occurrences three times, STTR 0.12 – and by

the past form *thought* – which appears eight times in the NLs, STTR 0.33) when s/he knows that the solution to the problem is somewhere in the data they have, but s/he does not know how to find it. The reader follows with the same *crescendo* tension the scientist feels following his/her thoughts, and begins to realize the excitement forerunning the imminent discovery, when all the pieces of the puzzle are suddenly set in the right place.

The *non-understanding* semantic domain, belonging to the macro-category defined in WMatrix as *X Psychological actions, states & processes*[16], is characterized by the terms *puzzle* (27 hits, STTR 1.13) and the unique occurrence of the item *perplexing* (STTR 0.04), as we can see in Figure 4 below):

? PUTTING TOGETHER PIECES OF THE	PUZZLE	Nobel Lecture , December 7 , 200
ıe thrill of putting pieces of a	puzzle	together to find something new .
rating , at times misleading and	perplexing	, but yet also at times wonderfu
ıg discoveries . IDENTIFYING THE	PUZZLE	: TELOMERE SEQUENCES DEFINED Tel
JENCES DEFINED Telomeres posed a	puzzle	for biologists for a many years
) , 1941 ; Muller , 1938) . The	puzzle	of how these ends functioned rem
? TELOMERES : SOME PIECES OF THE	PUZZLE	Liz Blackburn and others were in
? COLLECTING MORE PIECES OF THE	PUZZLE	: TELOMERE SEQUENCE ADDITION Whe
and they saw a way to use these	puzzle	pieces to perform a long-shot ex
using this strategy . This last	puzzle	piece was a very important one.
TION : DEFINING THE EDGES OF THE	PUZZLE	When I joined Liz s lab in May o
ı so we had another piece of the	puzzle	. But how did our nine-month sea
ı our nine-month search for this	puzzle	piece unfold ? Figure 4 . Initia
ɜ most productive way to solve a	puzzle	is to attack it with the right s
ve described above , we sat and	puzzled	about the fact that both the tel
, 1985) . THE NEXT PART OF THE	PUZZLE	: SEQUENCE INFORMATION The next
have the final key piece of the	puzzle	. Since telomerase was an intere
) A CHANGE IN VENUE : SEEING THE	PUZZLE	FROM A DIFFERENT PERSPECTIVE I f
This clone was clearly a central	puzzle	piece . I went on to verify that
ı been right . IS THIS THE RIGHT	PUZZLE	PIECE ? It was exhilarating to h
ılts provided the most important	puzzle	pieces . The RNase H experiment
this result with my friends and	puzzling	more , I realized there was a mu
ſ telomerase . The other unusual	puzzle	piece was Oligo8 . This oligonuc
ɛting all of these pieces of the	puzzle	together , I felt there was good
ELS CAN SHOW THE SOLUTION TO THE	PUZZLE	In writing the paper on the iden
lackburn , 1989) . SOLUTIONS TO	PUZZLES	SHOW THE WAY TO MORE INTERESTING
. I went on to tackle this next	puzzle	in a later paper (greider , 199
lprize. org) . Putting together	puzzle	pieces is challenging , fun , an
often arise after one part of a	puzzle	is solved ; the rewarding thing
The pleasure of figuring out the	puzzle	and finding out things not known
ideas that have made solving the	puzzles	fun , and opened up new puzzles

Figure 4. *Non-understanding* semantic field

The use of the term *puzzle* characterizes Greider's NL only, which could be expected because *puzzle* occurs in almost all the headings and subheadings of the NL. Interestingly, however, in 17 out of the 27 occurrences of *puzzle*, the term appears within the text rather than in the subheading:

16 See http://www.comp.lancs.ac.uk/ucrel/usas/.

(11) Many new questions often arise after one part of a *puzzle* is solved; the rewarding thing about curiosity-driven science is being able to pick from these new questions those that seem the most interesting to me. (Greider 2009: 313)

In all occurrences, the term *puzzle* does not have a negative connotation. Indeed, the lexeme is accompanied by approbation terms, because, as the scientist puts it, solving the puzzle is *pleasing* and *rewarding* (Greider 2009: 315). The author does not seem to speak about the bewilderment she encountered in her lab activity; she rather interprets the *puzzle* as a mental-exercise fundamental in her research:

(12) The story of telomerase discovery is a story of the thrill of putting pieces of a puzzle together to find something new. This story represents a paradigm for curiosity-driven research and, like many other stories of fundamental discovery, shows that important clinical insights can come from unlikely places. In this paper I describe the process of scientific discovery- at times frustrating, at times misleading and perplexing, but yet also at times wonderfully exciting. The willingness to keep an open mind, to enter uncharted waters and try something new, along with patience and determination, came together to tell us something new about biology. Fundamentally this story shows how curiosity and an interest in solving interesting problems can lead to a lifetime of exciting discoveries. (Greider 2009: 297)

As Hilgartner (1990) claims, one of the main semantic means of establishing links between two domains of experience, meaning or knowledge is metaphor. The metaphor exploited here is A PUZZLE IS AN ENEMY, where the scientist is the winning general who defies ignorance. This metaphor is introduced at the very beginning of the Greider's NL, as reported below in (13):

(13) The most productive way to solve a puzzle is to attack it with the right strategy. (Greider 2009: 303)

This rhetorical trope therefore permeates the whole NL lecture, which thus turns into a description of the battle between the goodies (scientists) and the badies (the *puzzle*) for the sake of knowledge. In this battle there is no place for mitigating the claims put forward by the researcher through hedging devices.

In academic discourse, writers modify their assertions by toning down uncertain or potentially risky claims, emphasising what they believe to be

correct, and conveying an appropriately collegial attitude to readers. These expressions of doubt and certainty are collectively known as *hedges* and *boosters*. *Hedges* are usually employed to reduce the force of an argument, whereas *boosters* are used to strengthen claims. While *hedges* allow writers to signal tentativeness in referential information and convey collegial respect towards the views of colleagues, *boosters* express conviction and mark involvement and solidarity with an audience (Hyland 2004). Hedges and boosters do not simply communicate knowledge but also the author's attitude toward such knowledge and to the readers (Hyland 2004). As hinted at above, NLs seem to exploit boosters rather than hedges, as indicated by the *booster* semantic domain elaborated by WMatrix, of which a snapshot can be seen in Figure 5, below. Interestingly, the *booster* semantic domain is completely absent in the semantic domain list of the RA.

because these two species are	very	distantly related , having diver
rotected DNA ends in yeast , a	very	distantly-related organism (Szo
n all other organisms so far .	More	strikingly , determining the seq
. This last puzzle piece was a	very	important one. models of telomer
un and made one up . In fact ,	more	precisely , we continually made
uld incorporate DNA precursors	more	readily than a piece of DNA cont
hen looked to see if there was	more	radioactive label incorporated i
ut a small change in size of a	very	small fragment would be noticeab
ng the fragment , made the cut	very	close to the telomere end to gen
TING OURSELVES : DO THE PIECES	REALLY	FIT , OR ARE WE FORCING THEM ? I
the pattern we were seeing was	indeed	generated by a novel enzyme . We
conventional DNA polymerases .	More	importantly , we used a CCCCAA p
ahymena extract with RNAse did	indeed	block the elongation activity .
if a template mechanism was ,	indeed	, working . We tried a number of
e RNA sequence , including the	very	newly developed method termed PC
f months , I decided to take a	more	direct approach : I used direct
s sequencing revealed that the	very	small RNAs that co-purified with
st candidate ; my interest was	really	a hunch since I had seen this RN
hanism for TTGGGG addition was	indeed	used by telomerase . This clone
ome evidence that this RNA was	indeed	the template. again , just as wh
t with my friends and puzzling	more	, I realized there was a much mo
more , I realized there was a	much	more interesting explanation for
, I realized there was a much	more	interesting explanation for thes
3 , showing that Oligo 3 does	indeed	hybridize to the 159 nt RNA as p
quence in the putative RNA did	indeed	serve as a template for TTGGGG r
ces is challenging , fun , and	extremely	gratifying , especially when the
arbitrary , as beginnings are	so	often lost in the mists of time
, a better crop would result .	Intensely	cultivated areas were carved out
Borodino) . Perhaps another ,	more	modern beginning to the story of

Figure 5. *Booster* semantic field

As Hyland (2004: 98-99) claims, the main role of *boosters* is that of highlighting the relevance or the novelty of the work, while convincing the reader of the scientist's firm confidence in the logical strength of the argument proposed. This, too, seems their main function in the NLs as revealed by the presence of a booster such as *more than* (19 hits, STTR 0.79), regarded as a feature expressing certainty (Hyland 2004: 190). There are, however, also boosters defined by

Hyland (2004: 100) as emphatic metadiscursive boosters, which, while guiding the reader through the scientist's reasoning path, create solidarity between the authors and their audience. These boosters, are seen by Myers (1989: 8) as features revealing an emotional response to results, "which show identification with a common goal, rather than the responses or desires of an individual". It is this type of boosters that characterize the NLs under consideration. More specifically, WMatrix detected: *very* (14 hits, STTR 0.58); *indeed* (8 hits, STTR 0.33); *highly* (3 hits, STTR 0.12); *abundant* and *really* (both of them having 2 occurrences, STTR 0.08); and *extremely*; *greatly*; *intensely*; *particularly*; *seriously*; and *wonderfully* (all of them having 1 hit, STTR 0.04).

The fact that in the NLs boosters form one of the key semantic domains is quite understandable: the scientists do not need to show caution in presenting their findings because those findings are the reason why they have been awarded the Nobel Prize: the discovery is now commonly shared knowledge in the medical field, which is furthermore emphasised by the scientists strategic management of solidarity construction.

As far as the *thought and belief* semantic field (Figure 6 below), it belongs to *X2 Mental actions and processes* included in the macro-category identified by WMatrix as *X Psychological actions, states & processes*[17]. This class

ich are all of a similar size .	Figure	1 . Telomere elongation in Trypa
to yeast cells . However , they	wondered	whether the addition of Tetrahym
he radioactive isotope 32P . We	reasoned	that an elongation enzyme might
ul . After each experiment , we	thought	of new changes to make to the ne
both ends of the fragment . We	thought	hard about a way to get around t
on the gel . This was the first	visualization	of telomerase activity . TESTING
time , trying to understand the	meaning	of the repeating pattern . We kn
ng new , or was our own wishful	thinking	coloring our interpretation of t
were seeing . For example , we	thought	the TTGGGG primer might be annea
elomeric primers self-annealing	thought	G-G non-Watson-Crick base pairin
me was in action : we could not	imagine	how conventional polymerases wou
s a key clue : it allowed us to	think	about possible mechanisms by whi
trying to do . It was fun to be	creative	and dream up ways to test whethe
complementary to telomerase . I	thought	that if I could inactivate the e
RNA in telomerase activity . I	think	it was Adrian Krainer , a collea
(Figure 9) . I had to sit and	think	about what this meant . At first
eces of the puzzle together , I	felt	there was good evidence to suppo
a diagrammatic model for how I	thought	the enzyme might work . Figure 1
opied (figure 10) . With this	in mind	, I proposed that telomerase has
tion model helped to clarify my	thinking	about telomerase . Thinking abou
my thinking about telomerase .	Thinking	about the model also immediately
This question , which I had not	thought	of before I drew the model , was
) of these molecules would , I	reasoned	, make it feasible to apply meth
n my early work , our molecular	views	of telomeres were first focused
d by the cell and therefore , I	reasoned	, would allow the best chance of
ase in cancer cells We ought to	consider	the end in everything . [F
ss sectional studies and on the	presumption	of lack of telomerase in the nor
ce may instead be more usefully	considered	as reflecting - perhaps causing

Figure 6. *Thought and belief* semantic field

17 See http://www.comp.lancs.ac.uk/ucrel/usas/.

is characterized by such verbs as *think* (8 hits, STTR 0.33); *consider* (1 hit, STTR 0.04); *imagine* (1 hit, STTR 0.04); *reason* (3 hits, STTR 0.12), *wonder* (1 hit, STTR 0.04), all of which are found in NLs in the past form.

Hyland and Tse (2005), Biber et al. (1999) and Quirk et al. (1985) classify *consider*, *imagine, reason*, *think*, and *wonder*, as mental or cognitive verbs, that is, verbs that consider the author's mental processes (e.g. *assume*, *believe*). In particular, *wonder* in the past form as we find it here is defined by Quirk et al. (1985: 188) as the attitudinal past, used with verbs expressing volition or mental state, and reflecting the tentative attitude of the speaker; *consider* and *reason* are mental verbs of cognition (Biber et al. 1999: 661); *imagine* and *think* are stative verbs denoting 'private' states which can only be subjectively verified (Quirk et al. 1985: 202). In addition, Biber et al. (1999) claim that these are more frequently found in fiction than in academic writing and that "these mental verbs usually express various emotions, attitudes, or cognitive states that are intrinsically personal" (Biber et al. 1999: 491). This, and the facts that (a) in NLs their subject is generally the pronoun *I*, and (b) they are completely absent in the RA, render the text very popularised.

4.1 The semantic domains of (person) pronouns & (possessive) adjectives

As indicated in footnote 10, despite the fact that (*person*) *pronouns &* (*possessive*) *adjectives* are grammatical items, the last semantic category listed (in hierarchical order) by USAS includes those lexemes generically labelled as *names and grammatical words* (http://ucrel.lancs.ac.uk/usas/), which include deictical items such as (person) pronouns and (possessive) adjectives which semantically provide the speaker's context (cf. Huang 2007).

As Table 3 above reveals, the semantic domain related to (person) pronouns and (possessive) adjectives is the first in the key semantic domain list and, therefore, has the greatest relevance. This is at odds with what normally occurs in scientific discourse.

Science exploits an inductive methodological approach by means of which principles and properties are suggested to the scientist by direct observation of the phenomena. Scientific discourse, therefore, linguistically realizes the inductive process going from phenomena observation to scientific discovery by eliminating any human element and personalization of the physical aspects of the experiment (Gotti 2003). This is something which does not seem to occur in NLs.

As can be seen from Figure 7 above, there is a strong use of person pronouns and adjectives suggesting personalisation and human elements.

the nuclear DNA molecules inform	us	about the special properties of t	4
might be on the telomeric DNA .	I	describe my early unsuccessful ef	4
n the telomeric DNA . I describe	my	early unsuccessful efforts to ide	4
o identify telomeric proteins in	my	autobiography in this volume . No	4
tobiography in this volume . Now	we	know that the essential telomeric	4
very simple telomeric sequences	which	are tandemly repeated over and ov	4
ucleotides at the ends of all of	our	chromosomes . The same repeated A	4
panosome protozoan parasites . (	This	makes telomeric DNA sequences pos	4
n a G-rich and a C-rich strand .	It	is the G rich strand that is alwa	4
strand . It is the G rich strand	that	is always oriented in the 5 to 3	4
ce were instrumental in spurring	me	to hunt for a new type of enzymat	5
a new type of enzymatic activity	that	might synthesize telomeric DNA an	5
telomeric CCCCAA repeat tracts (	which	we eventually ended up referring	5
ric CCCCAA repeat tracts (which	we	eventually ended up referring to	5
ntually ended up referring to by	their	sequence on the complementary DNA	5
a were heterogeneous in length ;	that	is , the DNA molecules in the pop	5
es in the rDNA minichromosomes ;	that	is , new telomeres were forming o	5
Meng-Chao Yao , continuing work	he	had started as a Ph . D. student	5
ce Gall s lab (at the same time	I	was there) , had observed this f	5
precursor DNA sequence had made	it	conceivable that this sequence co	5
eivable that this sequence could	itself	somehow be a seed sequence for re	5
s , for example . However , then	my	lab at Berkeley made similar obse	5
ic nucleus , with the difference	that	in these cases the telomeric DNA	5
1. [15] Thus in 1982	I	wrote about these observations :	5
e subchromosomal segments during	their	formation . Two types of routes c	5
k Szostak s 2009 Nobel Lecture ,	we	had discovered that yeast telomer	5
obel Lecture , we had discovered	that	yeast telomeric sequence DNA (ir	5
Shampay , a graduate student in	my	lab at UC Berkeley , first sequen	5
ley , first sequenced as part of	our	collaboration with Jack) was add	5

Figure 7. (Person) *pronouns and* (*possessive*) *adjectives* semantic domain

This is also confirmed by the NL keyword list generated with Wordsmith tools against the RA[18], where *I* (109 hits; STTR 4.56, keyness 61.50), *my* (32 hits, STTR 1.34, keyness 28.21), *it* (73 hits, STTR 3.05, keyness 41.21) and *they* (36 hits, STTR 1.50, keyness 31.74) are listed as keywords (Table 4):

Table 4. Greider-Blackburn's Nobel Lecture keywordlist

N	Key word	Freq.	%	Keyness
1	TELOMERASE	143	0.94	126.43
2	RNA	100	0.66	67.35
3	I	109	0.72	61.50
4	HAD	84	0.55	54.22
5	TETRATHYMENA	48	0.32	42.33
6	IT	73	0.48	41.21
7	ONE	41	0.27	36.15
8	THEY	36	0.24	31.74
9	BUT	35	0.23	30.86
10	MY	32	0.21	28.21

18 In order to see the extent to which the Nobel Lectures are 'popularised' and check their differences from the RA, and have a measure of the *saliency* rather than frequency of words in a context, I compared the two subcorpora against each other, so each one is the reference for the other one (cf. Baker 2006: 124).

My attention has been particularly attracted to the use of *I* and *my*, which I have not found in previous research carried out in the medical field (cf. Maci 2012), and which are not present in the RA under investigation. In addition, *I* is normally less frequently employed in academic lectures when compared to *we*, which is normally exploited three times more than *I*[19] (cf. Round 1987: 20; Fortanet 2004). The use of *I* in the NLs, therefore, seems a form of *personalisation* typical of popularised science (cf. Myers 1989).

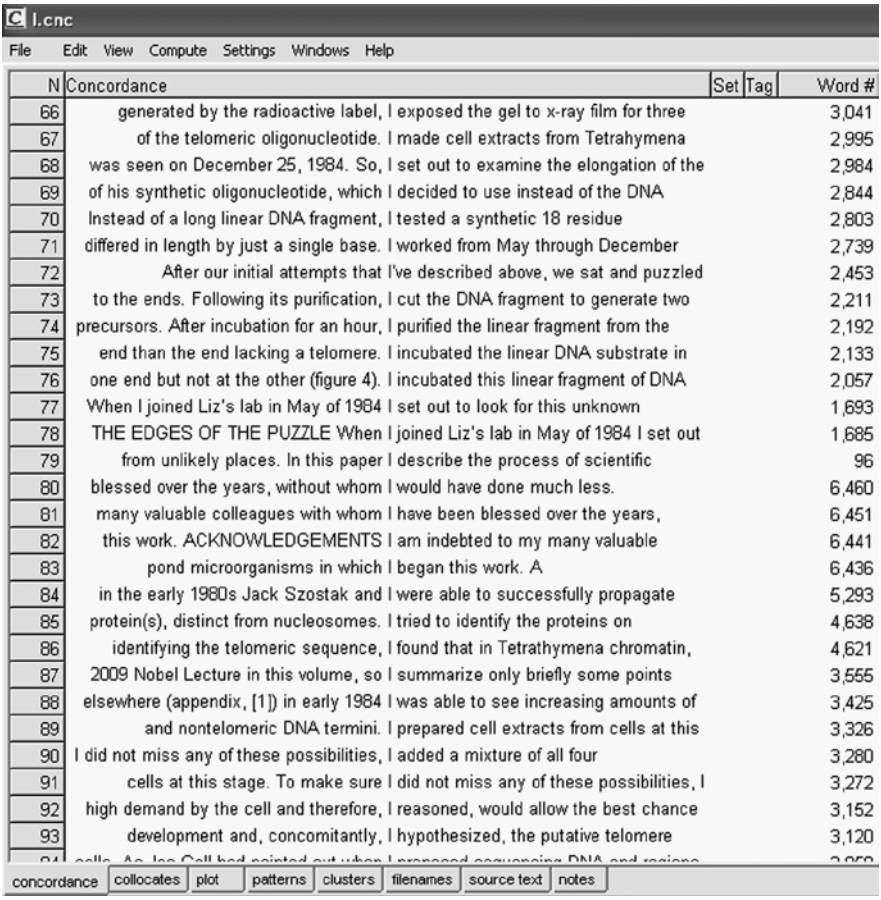

Figure 8. Concordance list of *I*

The concordance list of *I* shows 109 occurrences (Figure 8, above), mostly collocating with *was* (12 hits), *had* (11 hits), *would* (8 hits) and *decided* (6 hits),

19 In academic lectures, *I* is normally used to semantically convey the teacher's evaluation, plan for the lesson or whenever the teacher acts as spokesman of the person who discovered or defined the phenomenon (Round 1987).

introducing short first-person narratives, often incorporating anecdotal detail (14) and employed in the 'confessional mode' sharing with the reader information about their private lives which is both a soul-bearing gesture and proof of the hard work performed (15):

(14) These were the key to my being able to analyze telomeric DNA directly. I first encountered Tetrahymena when I joined Joe Gall's lab as a postdoctoral fellow at Yale. (Blackburn 2009: 260)

(15) I designed several different oligonucleotide probes that were complementary to the regions of partial RNA sequence I had obtained, and made […]. After a number of attempts, I obtained one clone […]. (Greider 2009: 310)

The same confessional attitude is found in the concordance list of *my* (Figure 9, below):

MY.cnc

File Edit View Compute Settings Windows Help

N	Concordance	Set	Tag	Word #	t. #	os.
1	elongation model helped to clarify my thinking about telomerase. Thinking			6,291	288	8%
2	drawing a model was not foremost in my mind. However, I found that drawing			6,106	281	5%
3	3 was unique in that it hybridized to my 159 nt RNA in a region adjacent to			5,558	254	9%
4	having talked about this result with my friends and puzzling more, I realized			5,514	252	5%
5	activity was to test the function of my candidate RNA template. To do this,			5,170	235	3%
6	how functional RNA s were identified. My next step in characterizing			5,157	235	1%
7	was the right candidate. I talked to my friends at Cold Spring Harbor,			5,134	234	9%
8	in length. All the signs were that my earlier hunch about "154 base RNA "			5,033	229	9%
9	still focused on identifying the RNA, but my exploration took a different approach.			4,884	222	5%
10	DIFFERENT PERSPECTIVE I finished my Ph.D. at Berkeley in November 1987			4,848	220	6%
11	this RNA as the best candidate; my interest was really a hunch since I			4,604	212	6%
12	for telomerase. One RNA that I had my eye on after staring at many different			4,577	211	2%
13	with Tom in the morning and described my idea of seeing whether the activity			3,877	181	0%
14	TS I am indebted to my many valuable colleagues with whom			6,445	288	6%
15	a postdoctoral fellow with Mike in my lab, extended these findings:			4,941	222	1%
16	a postdoctoral fellow then in my laboratory, proposed a model for			4,829	218	7%
17	The Iliad (bk. IV, III). As recounted in my autobiography in this volume, soon			4,610	209	6%
18	by Guo-Liang Yu, a graduate student in my lab. Guo-Liang then introduced them			4,215	181	5%
19	and we had devised a system in my lab for overexpression of such			4,185	180	7%
20	- by Dorothy Shippen-Lenz in my lab and by Alan Zahler in David			3,885	162	8%
21	extracts. In 1984 Carol Greider joined my lab at UC Berkeley as a Ph.D.			3,515	145	0%
22	stage, adapting a method that my graduate student Peter Challoner had			3,340	136	4%
23	DNA-adding enzymatic activity. My choice of approach was to prepare			3,040	126	7%
24	by Barbara McClintock reinforced my nascent notion that some			2,764	115	0%
25	Janice Shampay, a graduate student in my lab at UC Berkeley, first sequenced			2,418	104	4%
26	repeats, for example. However, then my lab at Berkeley made similar			2,248	100	9%
27	efforts to identify telomeric proteins in my autobiography in this volume. Now			1,776	81	6%
28	be on the telomeric DNA. I describe my early unsuccessful efforts to identify			1,767	81	4%

[Figure 9. Concordance list of *my*.]

My, which occurs 32 times in the NLs, collocates with *lab*. It seems that the context where *my lab* is exploited is always related not only to the profession but also to the researchers themselves to such an extent that *my lab* metonymically turns into the professional scientist (16):

(16) However, then *my lab* at Berkeley made similar observations for other rDNAs and non-rDNA telomeres of the somatic nucleus, […]. (Blackburn 2009: 260)

From a grammatical point of view, the first person pronoun *I* and the adjective *my* are the least ambiguous, because they refer to one person only (unlike *we* or *our*, which could be either exclusive or inclusive, or even *you*, which may stand for *one*). As a pronominal and adjectival reference, they are multifunctional: on the one hand *I* and *my* refer the *researcher*, that is to the author's role as the person undertaking the discovery reported in the NL and, on the other hand, they simultaneously adopt a biographical reference in the sense that they identify the author's identity as a person. It must be said, however, that there is a growing preference for the use of *I* over *we,* specifically in hard science, due to the authors' pragmatic purpose (identified by Hyland 2001) of using self-mention in order to be closely related with their work and to mediate the relationship between their arguments and their discourse communities.

5. Conclusion

What makes discourse *specialized* is the mixture of specific lexical, syntactic and semantic features which differ *quantitatively* with respect to general language (Gotti 2003). As Sager et al. (1980: 230) claim, the most distinguishing characteristic of specialized discourse is its lexicon, regardless of lexical occurrence, characterized, at a semantic level, by monoreferentiality, which implies a denotative function and lack of any kind of emotional and connotative meaning- it therefore calls for precision and transparency (which frees specialized language from ambiguity and polysemy).

The keyword list generated from the RA (Table 5, below) which led the two scientists to the Nobel Prize, indeed mirrors the above-mentioned characteristics of monoreferential, precise, transparent and denotatative meaning.

The discourse of the NLs, on the contrary, exploits features that go from specialisation to popularisation. As we have seen, both the key semantic

Table 5. Greider-Blackburn's RA keyword list

N	Key word	Freq.	%	Keyness
1	OLIGOMER	43	0.51	88.91
2	A	36	0.43	74.42
3	MM	33	0.39	68.21
4	DTTP	39	0.46	66.40
5	LANES	31	0.37	64.07
6	TTGGGG	68	0.81	63.92
7	DGTP	36	0.43	55.90
8	mM	26	0.31	53.73
9	ADDITION	55	0.65	42.59
10	DNTPS	30	0.21	37.18
11	M	18	0.36	34.83
12	SHOWN	23	0.27	31.56
13	REACTION	36	0.43	30.97
14	INCORPORATION	19	0.23	27.80
15	CONCENTRATION	13	0.15	26.85
16	MIN	13	0.15	26.85
17	NUCLEASE	13	0.15	26.85
18	n	22	0.26	26.65
19	UNLABELED	22	0.26	26.65
20	ENDOGENOUS	16	0.19	26.32
21	ML	12	0.14	24.78
22	INPUT	15	0.18	24.38
23	ADDED	56	0.67	24.26

domains and the keyword list contain items ranging from technicalities (*telomerase*, *RNA*, *tetrathymena*, *emzime*, *cancer*, etc.) to attitudinal expression (*my lab*, *I wondered, the excitement*, etc.). This is also confirmed by the type of headings and subheadings characterizing the NLs which are distant from the traditional IMRD pattern established in the medical sciences, and rather reveal a narrative pattern resembling story-telling, where the plot has complicating actions to be resolved by the scientists and contains attitudinal evaluation. Such to and fro also seems to be confirmed by the presence of extremely technical figures within the NLs which cannot be understood by a layman. The story, as presented by the two Nobel Laureates, expresses mental models that are mental 'instantiations' of the discovery, whose knowledge is nowadays commonly-shared by junior and senior members of the medical academic community. Inserted in a co-text rich in personal

and professional anecdotes, such stories and mental models are often easier to remember and hence are quite useful as an explanatory device in the process of popularising scientific discourse. They also demonstrate the Nobel Laureates' command of the specialised knowledge they validate.

Given the type of audience targeted with the NLs, the use of such rhetorical devices makes it clear that, in addition to scientific communication within the specialised professional, NLs popularising function is that of attracting an audience of specialists stepping outside their profession to create networks of teamwork situations (the *invisible college*; cf. Dubois 1985: 72) and thus forming networks of teamwork situations (Dubois 1985: 82) with potentialities as far as future research is regarded because:

(17) Perhaps telomere monitoring will become as common as regular weighing as an integrative indicator of health (Blackburn 2009: 278)

The findings presented above are of course not conclusive, given the limited coverage and number of texts considered, and need to be triangulated and tested on a more representative corpus. Yet their implications may shed new light on the pragmatic effects of popularisation for a professional audience.

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Middle English preposition and adverb *twix*

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ABSTRACT

The present paper discusses the Middle English lexeme *twix*, which could function as a preposition and as an adverb. The aim of the study is to revise the etymology of *twix* as well as to construct its semantic profile, dialect distribution, textual distribution and token frequency. The study is based on such acknowledged electronic databases as the *Middle English Dictionary online,* the *Oxford English Dictionary online*, the *Corpus of Middle English Prose and Verse* and *A Linguistic Atlas of Late Mediaeval English* as well as on some complete Middle English texts supplementing the corpus. The dictionaries are used to review the etymology of *twix* and to draw tentative conclusions concerning a semantic profile, dialect distribution and textual distribution of *twix*. Subsequently, the *Corpus of Middle English Prose and Verse* and some complete Middle English texts are examined in order to corroborate the latter three features as well as to calculate the number of tokens of *twix.* Moreover, the study of the corpus, demonstrating the use of *twix* also in texts/manuscripts not included by the *Middle English Dictionary online* or *A Linguistic Atlas of Late Mediaeval English*, helps to provide a more complete record of texts/manuscripts and authors employing *twix.*

1. Introduction

The present paper belongs to a series of studies on the Middle English prepositions and adverbs meaning 'between' (Ciszek-Kiliszewska 2013, in press b, in press c). This paper concentrates on the Middle English preposition and adverb *twix.* The aim of the study is to review the etymology of *twix* as well as to provide its semantic profile, dialect distribution, textual distribution and token frequency. The first three features are initially examined on the basis of such acknowledged historical English dictionaries as the *Middle English Dictionary online* (henceforth the *MED*) and the third edition of

the *Oxford English Dictionary online* (henceforth the *OED*). The appropriate linguistic information included there is used to revise the origin of *twix* and to draw preliminary conclusions concerning the semantics, dialect distribution and textual distribution of the preposition and adverb *twix*. Moreover, the dialect distribution of *twix* will be examined in *A Linguistic Atlas of Late Mediaeval English* (henceforth *LALME*). Next, the analysis of the *Corpus of Middle English Prose and Verse* and a few more complete Middle English texts in which the *MED* records the use of *twix* is conducted in order to verify the semantic profile as well as the dialect and textual distribution patterns of *twix.* The study of the extensive corpus and selected Middle English texts will reveal the use of the investigated preposition and adverb also in some texts/manuscripts not recorded as including *twix* by the *Middle English Dictionary online*, the *Oxford English Dictionary online*[1] or *A Linguistic Atlas of Late Mediaeval English.* Hence, it will be possible to compile a more exhaustive record of texts/manuscripts containing this variant of the preposition/adverb meaning 'between'. Moreover, the *Corpus of Middle English Prose and Verse* and some complete ME texts supplementing the corpus are extremely valuable for the calculation of the actual token frequency of the recorded instances of *twix.*

2. Studies in Middle English prepositions

Several Middle English prepositions are focuses of recent studies, e.g., Lundskær-Nielsen (1993), Molencki (2005, 2007a, 2007b, 2008, 2011a, 2011b), Iglesias-Rábade (2011) and Ciszek-Kiliszewska (2013, in press a, in press b, in press c). Lundskær-Nielsen (1993) concentrates on three prepositions, i.e., *in, on,* and *at*, in selected Medieval English texts. Molencki dedicates a few of his recent papers to the analysis of prepositions such as *after, before, because, forward* in the framework of grammaticalization (Hopper – Traugott 1993) and subjectification (Traugott 1989, 1995) as well as to the investigation of a collection of prepositions/conjunctions borrowed from French. Iglesias-Rábade (2011) selects for his *Helsinki Corpus* analysis a group of twelve prepositions such as *aboue*, *after*, *at*, *bi*, *bifore*, *bihinde*, *biside*, *in*, *on*, *ouer*, *þurgh* and *under* attested in Medieval English. Ciszek-Kiliszewska (in press a) discusses the Middle English loss of the OE preposition *ȳeond*. Ciszek-Kiliszewska (2013, in press b, in press c) verifies various aspects of the Middle English

[1] The *OED online* lists much fewer texts than the *MED online* (see e.g., 4 and 5.1.).

prepositions *atwēn*, *twēne* and *emell*(*e*), respectively. The author investigates the etymology, dialect distribution, textual distribution and the number of attestations of each preposition. A thorough discussion of the preposition and adverb *twix* is thus far lacking from English historical studies.

3. Corpus descriptions

The *Corpus of Middle English Prose and Verse* selected for the analysis of *twix* belongs, together with the *Middle English Dictionary online*, to the *Middle English Compendium online* supported by the University of Michigan. The corpus presentation found on the official web site provides information about the corpus so far consisting of 54 Middle English texts. It is also stated that the corpus will be successively extended. However, the bibliography of the *Middle English Compendium online* comprises as many as 146 texts today (http://quod.lib.umich.edu/c/cme/browse.html; 14 June 2013). Those texts represent various genres and text types such as, e.g., religious texts, chronicles, documents and plays. Both poetry and prose texts are collected.

Moreover, the study of the tokens of the preposition and adverb *twix* will be supplemented with the analysis of a few complete texts or manuscripts of texts in which the *Middle English Dictionary online* records their use, but which texts or manuscripts are missing from the *Corpus of Middle English Prose and Verse.*

4. Etymology of *twix*

The *Middle English Dictionary online* categorises the preposition *twix* as a "[s]hortened form of **bitwix(e** prep. or **atwix(en** prep.]". It is worth mentioning here that while the ME *bitwix* goes back to Old English, the word *atwix* is a ME development recorded for the first time only in 1330 in *Guy of Warwick* (MS Auchinleck). The earliest attestation of *twix* recorded by the *MED* comes from *Cursor Mundi* (MS Cotton Vespasian A.3 and MS Göttingen Theol 107) written c. 1400. The adverb *twix* is treated under a separate entry and is ascribed to come "[p]rob. from **twix** prep. with implied obj.; also cp. **bitwixe(n** adv. or **atwix(en** adv." The adverb is recorded for the first time in the same text and manuscript as the preposition *twix.*

The *Oxford English Dictionary online* describes *twixt* (prep.) as an "[a]phetic form of atwixt *prep*., betwixt *prep*. and *adv*.". The ear liest quotation also comes from *Cursor Mundi* (MS Cotton Vespasian A.3), which the *OED*

online once calls Cott. and once Vesp. and dates the manuscripts to 13.. and 1400 respectively[2]. Under the same entry the *OED* includes **twixt and** *phr.*, which is exemplified with one of the two quotations (from MS Göttingen Theol 107) illustrating the adverbial use of *twix* in the *MED online.*

My assumption is that *twix* is an aphetic form derived from *bitwix*(*t*)(*en*) alone. The reason is that *bitwix*(*t*)(*en*) is a better established lexeme than *atwix*(*t*)(*en*). While the former goes back to Old English and is attested in numerous texts in both Old and Middle English, *atwix*(*t*)(*en*) is originally recorded in Middle English, around 1330 (see above), and is evidenced by the *MED* in only ten texts. Moreover, *bitwix*(*t*)(*en*) has a considerably wider range of reference than *atwix*(*t*)(*en*) (cf. *MED bitwix*(*e*) (prep.) and *bitwixe*(*n*) (adv.) as well as *atwix*(*en*), *atwixt* (prep. & adv.)). Hence, *twix* must have been derived by analogy with the Middle English preposition *twēn*(*e*) coined from *bitwēn*(*e*) (see Ciszek-Kiliszewska in press b). As regards *atwix*(*t*)(*en*), taking into account its first attestation in Middle English, a restricted scope of semantic reference and especially its morphological structure, the lexeme seems to have been coined by analogy with such pairs of words as *āforē* and *bīfore*, *among* and *bimong* or *atwēn*(*e*) and *bitwēn*(*e*) (see Ciszek-Kiliszewska 2013). My assumption is in a way corroborated by the *Middle English Dictionary*, which contradictorily to its statement on *twix* being a "[s]hortened form of **bitwix(e** prep. or **atwix(en** prep.]" (see above), labels *atwix*(*en*), *atwixt* (prep. & adv.) as "modeled on such synonyms as **afōre** = **bifōre**".

5. Semantics of *twix*

5.1 Dictionary analysis

The *Middle English Dictionary online* describes the preposition *twix* as having meanings such as 'among, in among, between'. The preposition could be used with reference to various aspects, which are pointed out in the *MED online* definition:

twix (prep.) Also **twixt(en**, **twixit**, **tuix**

(a) With ref. to position or location in space: among (several animals); in among (surrounding objects); ~ **hondes**, in (one's) hands;

[2] The dating of the manuscripts in the *MED online* is more reliable as compared to that in the yet unrevised part of the *OED online.*

(b) with ref. to association or relationship: between two (parties); also, among (parties) [quot. a1400, last]; **ben born (geten) ~**, to be born conjointly of (a man and a woman);

(c) with ref. to division or apportionment: among (parties), between;

(d) with ref. to similarity or difference: between (persons or things).

On the basis of the analysis of the context in which the Middle English preposition *twix* can be used, I have drawn a conclusion that *twix* could assume locative (a) and abstract (b, c and d) senses. The preposition is not recorded with a temporal sense. This means that the senses of the preposition *twix* are restricted as compared to the preposition *bitwix*(*t*)(*en*) from which *twix* was derived, since *bitwix*(*t*)(*en*) could assume all three discussed senses. In the *MED online* definition below meanings 1a., 1b., and 2. contribute to the prototypical locative sense, whereas the metaphoric, more semantically extended temporal and abstract senses are represented by meanings 3. and 4a.-8. respectively[3].

bitwix(e (prep.) Also **bitwixen**, **bitwixt**; **bitwux(en**, **-twuxt**, **bitux(en**, **-tuxt**; **bitwex(e**; **bitwisse**, **-twist**.

1a. Of location or position in space: (a) between (two objects, localities, points); in among (several things); (b) in between (surrounding objects); **~ armes, hondes**, in (one's) arms, hands; **in..~**.

1b. Of extent or distance: between (two places).

2. Of position in a series or sequence: between.

3. Of position or duration in time: (a) between (two events or periods of time); (b) **~ and, ~ and til**, between (an implied point in time) and (a later event or time), until; [?*conj.*;?*adv.* meanwhile].

4a. Of association or relationship between two persons or parties: between; (a) of affection, love, trust; (b) of marriage, family ties; also *fig.*; (c) of procreation.

4b. Of relationship between two persons or parties: between; -- (a) of strife, conflict; (b) of disagreement, dissention, etc.

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3 For a discussion of subjectification see Traugott (1989, 1995) and Traugott – Dasher (2002).

4c. Of communication, consultation, etc.: between; -- (a) of exchanging messages, conferring, dialogue; (b) of conferring or doing something confidentially or secretly; ~ **us two**, in confidence; (c) of making or reaching an agreement; (d) of reconciliation, mediation, etc.

5. Of dividing or sharing something: between.

6. Of a group of persons or things: among.

7. (a) Of qualities, states, emotions: intermediate between, wavering between, between; (b) of similarity or difference: between; (c) of comparing things: between; (d) of discriminating, judging: between.

8. **answeren ~..teth**, respond under (one's) breath, fail to respond.

The *OED online* provides no explicit meaning of the Middle English preposition *twix*. Moreover, the dictionary lists only one manuscript (MS Cotton Vespasian A.3) of one Middle English text, i.e., *Cursor Mundi*, as including the preposition. In the presented quotations the meanings 'between' and 'in among' can be construed. Still, the context analysis of the restricted examples (see the *OED* quotations below) allows us to assume that the preposition *twix* could express abstract and locative senses.

> 13.. Cursor M.22028 (Cott.), O fader and moder he sal be born..Bituix a man and a womman..Noght **tuix** a biscop and a nun.
>
> *a*1400 (1325) *Cursor Mundi* (Vesp.) l. 3179 [Abraham] loked bi him **tuyx** þe thorns[4].

The *Middle English Dictionary online* labels the adverb *twix* as meaning 'in the meantime, from this moment' and in a phrase *twix and* meaning 'until (sb. does sth.)' and 'at (what time to do sth.)'. Hence, the adverb could assume exclusively a temporal sense. According to the dictionary, the adverb *twix* can be found only in MSS Cotton Vespasian A.3 and Göttingen Theol 107 of *Cursor Mundi.* Interestingly, the adverb *bitwix*(*en*) could be used not only with a temporal sense (meaning b.) but also with locative (meaning a, first quotation) and abstract (meaning a, second quotation) senses (see the *MED* definition below).

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4 It seems that in the second quotation we actually deal with a preposition *bituyx* split with a personal pronoun *him.*

bitwixe(n (adv.)

(a) In between; **putten** ∼, interpose; (b) of time: **noght lang** ∼, not much later [cp. prep. **3** (b)].

(a) c1275(?a1200) Lay. *Brut* (Clg A.9) 29942: Þat lond..þat lið þer **bi-twixen**.

(c1384) *WBible(1)* (Dc 369(2)) Heb.6.17: God, willinge for to schewe..the vnmouablenesse or sadnesse of his conseil, put **bitwixe** an oth.

(b) a1400(a1325) *Cursor* (Vsp A.3) 13521: Efter þat þis signe was don, Noght lang **bi-tuix** [Trin-C: be-twene] bot alson, A-noþer he did.

The Middle English adverbial use of *twix* is very briefly recorded by the *OED online* in a phrase *twix and* only in MS Göttingen Theol 107. The meaning label is 'until'[5]. Therefore, one can draw the conclusion that the adverb could be used with a temporal sense.

Tab. 1 below outlines the senses which both the preposition and the adverb *twix* could assume in Middle English. As can be seen, the preposition and the adverb were complementary in terms of senses.

Table 1. Senses of the preposition and adverb *twix*

Senses	*twix* (prep.)	*twix* (adv.)
Locative	+	–
Temporal	–	+
Abstract	+	–

5.2 Corpus and text analysis

The examination of the *Corpus of Middle English Prose and Verse* and selected Middle English texts mostly validates the semantics of the preposition and the adverb *twix* provided by the *Middle English Dictionary online*. However, the contextual analysis of the occurrences of *twix* in texts not mentioned by the *MED online* (see section 7 below) and the tokens from texts listed by the *MED online* but not included in the quotations reveals one more possibility of the use of the preposition with an abstract sense. This concerns meaning (b) in the definition above, which apart from referring to 'association or

5 The meaning 'before' refers to the quotation from 1689.

relationship: between two (parties)' can also be used with reference to 'peace, mediation: between two realms' such as the earth and the heaven, as in the following quotations from manuscript Fairfax 14 of *Cursor Mundi* (1400) and the parallel passages from MS Cotton Vesp. A.3 and MS Göttingen Theol. 107 of the same text:

(1) þat alle wiþ trauþ mai come to griþ
& quen hit sette on ende is eyuen.
hit takenis pes **twix** erþ & heiuen.
(MS Fairfax 14, ll. 25,048-25,050)

(2) þat al wit trouth mai cum to grith.
And quen it es sett on end vp euen,
It takens pes **tuix** erth and heuen.
(MS Cotton Vesp. A.3, ll. 25,048-25,050)

(3) yoghat all wid trouth mai cum to grith.
And quen it sett es on end vp euen,
þat takins pes **tuix** erd and heuen.
(MS Göttingen Theol. 107, ll. 25,048-25,050)

6. Texts and dialect distribution

6.1 Dictionary analysis

6.1.1 Preposition *twix*

The *Middle English Dictionary online* does not explicitly specify the dialect distribution of the preposition *twix* in Middle English. The dictionary records the preposition *twix* in five texts preserved in six manuscripts. These manuscripts could be localised in the North and in the East Midlands. The manuscripts seem quite equally distributed. Three manuscripts (two texts) come from the North and three manuscripts (three texts) from the East Midlands. Moreover, it has to be clarified that a detailed analysis has shown that the *MED*'s label Robert Mannyng's *The Chronicle of England* actually refers to the passage of *The King Lear Story* in *The Chronicle of England*, i.e., the same story in which Thomas Castleford uses *twix* (see Tab. 2 below). The differences between the two texts, apart from the author, the manuscript and the date, are the dialectal localisation and the type of composition. MS Göttingen Hist 740 is a Northern text written in prose whereas MS Lambeth 131 is an East--Midland verse. Still, in both cases we deal with *The Chronicle of England.*

Tab. 2 below presents the dialect distribution of the texts and manuscripts including *twix* and listed by the *MED online*.

Table 2. Dialect distribution of the *MED* texts containing the preposition *twix*

North	East Midlands
Cursor Mundi (1400) (MS Cotton Vesp. A.3) (MS Göttingen Theol. 107)	Robert Mannyng of Brunne, *The Chronicle of England**, Part 1 (1450) (MS Lambeth 131)
Thomas Castleford, *The King Lear Story* in *The Chronicle of England* (1425) (MS Göttingen Hist 740)	Thomas Hoccleve, *Regement of Princes* (1450) (MS Harley 4866)
	John Lydgate, *Song against Flemings* (1479) (MS Lambeth 84)

* In the *MED online* the text is called *The Chronicle of England* and in the *Corpus of Middle English Prose and Verse* the title is *The Story of England*.

6.1.2 Adverb *twix*

The adverb *twix* is recorded by the *Middle English Dictionary* as occurring in two manuscripts of *Cursor Mundi*, which can be localised in the North (see Tab. 3 below).

Table 3. Dialect distribution of the *MED* texts containing the adverb *twix*

North
Cursor Mundi (1400) (MS Cotton Vesp. A.3) (MS Göttingen Theol. 107)

The *Oxford English Dictionary online*, similarly to the *MED online*, lists texts in which it records *twix.* Among them, there are only two Middle English texts (see above).

6.2 Corpus and text analysis

6.2.1 Preposition *twix*

The investigation of the *Corpus of Middle English Prose and Verse*[6] demonstrates the evidenced use of the preposition *twix* also in three manuscripts (two

6 All conceivable spellings were searched; these include *twix**, *twyx**, *tuix**, *tuyx**, *tvix** and *tvyx**.

texts) not catalogued in the *Middle English Dictionary online*. One text is preserved in two manuscripts, one from the North and the other from the West Midlands. The second text can be localised in the East Midlands (see Tab. 4 below).

Table 4. *Corpus of Middle English Prose and Verse* texts containing the preposition *twix* not recorded by the *MED*

North	East Midlands	West Midlands
Cursor Mundi (1400) (MS Fairfax 14)	*The Brut* (or *The Chronicles of England*) (1400) (MS Raw. B171)	*Cursor Mundi* (1400) (MS Trinity Coll. R.3.8. (383))

The preposition *twix* in *The Brut,* (or *The Chronicles of England*) preserved in MS Raw. B171 from 1400 can be found in a passage which is the *Song against Flemings*, attributed to John Lydgate and included in *The Brut.* Hence, as regards the content, it is the same song which the *MED online* lists under the entry of the preposition *twix* (see Tab. 2) but preserved in a different manuscript. *The Brut,* or *The Chronicles of England* comprises also *The King Lear Story* (see section 6.1.1 above).

6.2.2 Adverb *twix*

The *Corpus of Middle English Prose and Verse* contains no instances of texts including the adverb *twix* other than these provided by the *Middle English Dictionary online.*

6.3 *LALME* analysis

An interesting observation is the treatment of *twix* by the *Linguistic Atlas of Late Medieval English*. Of the nine manuscripts investigated here, six are localised in the atlas. However, in only one of these six manuscripts is *twix* recorded (see Tab. 5 below).

Table 5. *LALME*'s localisation of *twix*

MSS	*twix*	MSS	*twix*
MS Cotton Vesp. A.3	+	MS Raw. B171	–
MS Fairfax 14	–	MS Göttingen Hist 740	–
MS Trinity Coll. R.3.8. (383)	–	MS Lambeth 131	–

7. Token frequency of *twix*

A detailed study of the complete preserved Middle English texts in which the *Corpus of Middle English Prose and Verse* and the *MED online* record *twix* (see Tables 2, 3 and 4 above) gives insight into the token frequency of the analysed preposition and adverb. The frequencies will be discussed in particular dialect areas in which *twix* was recorded.

7.1 Northern

The Northern manuscripts exhibit the highest number of occurrences of the preposition *twix*. This frequency is incurred especially by the two manuscripts of *Cursor Mundi*, i.e., MS Cotton Vespasian A.3 and MS Göttingen Theol 107. They include 25 and 16 occurrences of the preposition *twix*, respectively. MS Fairfax 14 of the same text contains 3 instances.

Thomas Castleford in *The King Lear Story*, which is a apart of *The Chronicle of England* (1425) preserved in MS Göttingen Hist 740, uses the preposition *twix* once.

As regards the adverbial use of *twix*, there are only four such recorded cases. Three instances can be found in MS Göttingen Theol 107 of *Cursor Mundi* and one in MS Cotton Vespasian A.3. Examples (4) and (5) include the adverbial use of *twix* in passages other than those exemplified in the *MED online*:

(4) Has he sett me ani dai
þat i widin me graith mai?
I wald gladli witt **tuix** and quen,
To take leue at mi kines-men,
(MS Göttingen Theol 107, ll. 20,179-20,182)

(5) Þis rain rained euer on-ane,
Tuix and fourti dais war gane,
(MS Göttingen Theol 107, ll. 1,835-1,835)

Tab. 6 below presents the token frequency of *twix* in Northern manuscripts.

Table 6. Token frequency of *twix* in Northern manuscripts

North	Tokens		North	Tokens	
	adv.	*prep.*		*adv.*	*prep.*
Cursor Mundi (1400)			Thomas Castleford, *The King*		
(MS Cotton Vesp. A.3)	25	1	*Lear Story* in *The Chronicle of*		
(MS Göttingen Theol. 107)	16	3	*England* (1425)		
(MS Fairfax 14)	3	–	(MS Göttingen Hist 740)	1	–

To put some of the *Cursor Mundi* (1400) results in context, it can be mentioned that the top frequency preposition meaning 'between' in MSS Göttingen Theol. 107 and Fairfax 14 of *Cursor Mundi* is the preposition *bitwix* with 96 and 46 occurrences, respectively. Surprisingly, the use of the preposition *bitwix* in MS Göttingen Theol. 107 is not recorded by the *MED online* (see also Ciszek-Kiliszewska in press b).

Examples (6)-(9) below illustrate the use of the preposition *twix* and other prepositions meaning 'between' or 'among' in parallel passages of the manuscripts of *Cursor Mundi*.

(6)

I ne roght quat dede it ware.'
þat blisced bodi to wind þai wald,
And i bigan it to wid-hald,
Sli strijf **tuix** vs was þare.
(MS Göt Theol 107, ll. 24,577-24,580)

I. ne royoght quat dede hit ware
þat blessed bodi to winde þai walde
& I. be-gan againe to halde
suche strife **twene** vs was þare.
(MS Fairfax 14, ll. 24,577-24,580)

(7)

As douues eye hir loke es suete,
As rose on thorn er to vnmete;
And **tuene** þaim fayre acord es nane,
Sua es **tuix** hir kin and my lenman.
(MS Göt Theol 107, ll. 9,361-9,364)

As dovis eie hir loke is swete
Rose on thorne to hir vn-mete
By-twene hem feire accord is non
Then **by-twene** her kynne & my lemman.
(MS Fairfax 14, ll. 9,361-9,364)

(8)

In his time was a batel grim
Tuix israel and beniamin,
(MS Cotton Vesp. A.3, ll. 7,007-7,008)

In his time was a batail grim
Bi-tuix israel and beniamyn,
(MS Göt Theol 107, ll. 7,007-7,008)

(9)

Quen symeon, þat mikel prist,
þat bar the hali-gast in brest,
þat iesus **tuix** his handes fang,
And said, 'lauerd liued haf i lang
(MS Cotton Vesp. A.3, ll. 17,721-17,724)

Quen symeon, þat mekil prest,
þat bar þe hali-gast in his breist,
þat iesus **tuix** his hend he fang,
And said, 'lauerd liued haue i lang
(MS Göt Theol 107, ll. 17,721-17,724)

7.2 East Midland

Thomas Hoccleve's *Regement of Princes* (1450) in MS Harley 4866 includes 9 occurrences of *twix*. The other East-Midland texts/manuscripts contain only one instance of the preposition under discussion each. The second and the last positions in Tab. 7 below represent the same line of the *Song against Flemings* in two different manuscripts distant in time (see also section 6.2.1. above).

Table 7. Token frequency of *twix* in East-Midland manuscripts

East Midlands	Tokens
Thomas Hoccleve, *Regement of Princes* (1450) (MS Harley 4866)	9
The Brut (or *The chronicles of England*) (1400) (MS Raw. B171)	1
Robert Mannyng of Brunne, *The Chronicle of England**, Part 1 (1450) (MS Lambeth 131)	1
John Lydgate, *Song against Flemings* (1479) (MS Lambeth 84)	1

* In the *MED online* the text is called *The Chronicle of England* and in the *Corpus of Middle English Prose and Verse* the title is *The Story of England*.

7.3 West Midland

The only West-Midland manuscript in which the use of the preposition *twix* is recorded, i.e., MS Trinity Coll. R.3.8. (383) of *Cursor Mundi* (1400), contains only a single instance of *twix.* It is also interesting to notice that apart from this occurrence of *twix* the manuscript uses exclusively *bitwēn*(*e*) (see also Ciszek-Kiliszewska in press b).

Table 8. Token frequency of *twix* in West-Midland manuscripts

West Midlands	Tokens
Cursor Mundi (1400) (MS Trinity Coll. R.3.8. (383))	1

8. Conclusions

The aim of the present paper was to focus on the Middle English preposition and adverb *twix* and to revise its etymology as well as to provide its semantic profile, dialect distribution, textual distribution and token frequency. The analysis was based on acknowledged electronic dictionaries such as the *Middle English Dictionary online* and the third edition of the *Oxford English Dictionary online* as well as on the extensive electronic database *Corpus of Middle English Prose and Verse* and on selected complete preserved Middle English texts. The results concerning the dialect distribution were also verified in *A Linguistic Atlas of Late Mediaeval English.*

As regards the etymology of *twix*, my assumption is that it was a shortened (aphetic) form of *bitwix*(*t*)(*en*), not *bitwix*(*t*)(*en*) and/or *atwix*(*t*)(*en*). *Bitwix*(*t*)(*en*), which goes back to Old English and is recorded in numerous texts seems to be a more probable forerunner of *twix*, since *bitwix*(*t*)(*en*) was better established and much more widely used than *atwix*(*t*)(*en*), originally attested only in 1330. *Atwix*(*t*)(*en*) must have been formed by analogy with such pairs of words as *āforē* and *bīfore*, *among* and *bimong* or *atwēn*(*e*) and *bitwēn*(*e*).

In terms of semantics, the ME preposition *twix* had the meaning 'among, in among' and 'between', whereas the adverb *twix* could mean 'in the meantime, from this moment'. Moreover, in a phrase *twix and*, *twix* denoted 'until, at'. The analysis demonstrates that the preposition could assume locative and abstract senses, whereas the adverb *twix* assumed a temporal sense. The range of senses of both the preposition and the adverb *twix* is restricted when compared to the range of the three senses of both the preposition and the adverb *betwix*(*t*)(*en*), from which *twix* was derived.

The text and dialect distribution of *twix* has been inferred from the localisation of the manuscripts of texts including *twix* listed by the *Middle English Dictionary* and those found in the *Corpus of Middle English Prose and Verse.* The preposition *twix* is recorded in two Northern texts, of which one is the *Cursor Mundi*, preserved in three Northern manuscripts, four East--Midland texts, where three of them are different versions of the same text (i.e., *The Chronicle of England*) and one is a work by Thomas Hoccleve, and in one West-Midland manuscript of the *Cursor Mundi.* The adverb *twix* is attested in two Northern manuscripts of the *Cursor Mundi.* Of the nine manuscripts including *twix*, six have been localised by recourse to *A Linguistic Atlas of Late Mediaeval English.* Interestingly, the use of *twix* is recorded in only one of those manuscripts.

The investigation of the *Corpus of Middle English Prose and Verse* and some complete Middle English texts supplementing the corpus has allowed the calculation of the actual token frequency of *twix.* The results demonstrate that *twix* is most frequent in Northern manuscripts with as many as 49 occurrences. There are 12 tokens in East-Midland texts and one in a West--Midland text. There are no recorded instances of *twix* in any Southern or Kentish texts.

A more general conclusion is that the content of the *Middle English Dictionary online* and the *Oxford English Dictionary online* could be improved through the analysis of extensive electronic corpora such as the *Corpus of Middle English Prose and Verse* and complete Middle English texts especially

for the investigation of the actual number of recorded tokens of a given lexeme. The corpora could also provide a broader perspective on textual distribution and possibly dialect distribution.

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A diachronic study of the prepositions *among* and *amongst*[1]

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ABSTRACT

This article is concerned with the usage of the prepositions *among* and *amongst* in the history of English. The main objective is to assess whether there is variation between the two forms in previous stages of the language and, if such is the case, to investigate its causes and provide an explanation for it. On the basis of the results, it may be possible to chart any factor(s) influencing the choice of one or the other in Present-Day English, for which several possibilities have been put forward: British vs. American English (Quirk et al. 1985: 666), written vs. oral language, and phonological context (Fowler 1926 [2009]: 19). The study draws on a range of corpora, both diachronic (*Helsinki Corpus* and *ARCHER*) and synchronic (*BNC* and *COCA*).

1. Introduction

The question about the difference between *among* and *amongst* has been addressed in dictionaries and grammars of English as well as reference books and handbooks or manuals about English language usage. According to the *OED*, *amongst*, which is recorded only as a preposition- *among* appears as a preposition and as an adverb- is "less usual in the primary local sense than *among*, and, when so used, generally implying dispersion, intermixture, or shifting position". In this respect, Fowler (1926 [2009]: 18-19) argues

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that "[s]uch a distinction may be accepted on authority, but can hardly be made convincing by quotations even on the liberal scale of the OED" and maintains that the survival of both forms without clear-cut distinction may be explained by "the unconscious desire for euphony or ease", *amongst* being more common before vowels[2]. Apart from the difference regarding part of speech, the senses listed in the *OED* for both words as prepositions are similar.

The *Merriam-Webster's Dictionary of English Usage* (1994: 90) reports that *amongst* is less common than *among* (as Fowler 1926 [2009] does), but that both words are correct. It is also pointed out that *amongst* is slightly more frequent in British than in American English. According to this dictionary, "[t]he few commentators who call *amongst* quaint or overrefined are off target", and modern examples are provided to support this idea: "…in divided usage amongst adults"; "…alcohol use and drinking problems amongst women". In the online version of the dictionary[3], when looking up *amongst*, the user is directed to the entry *among*, in which *amongst* is only referred to as a variant of *among*; no usage or explanatory notes about the choice between the words are provided. Not much more is discussed in Quirk et al.'s reference grammar, which notes the difference in usage between American and British English (1985: 680), highlighting that *amongst* occurs especially in British English (1985: 666).

Todd – Hancock (2005: 44) argue that there is no semantic difference between the terms, and that the choice to use one or the other depends on regional and, possibly, age factors. These authors indicate that *amongst* is employed in northern and eastern parts of the United Kingdom, and that young speakers consider it archaic and/or literary. According to them, *amongst* is commonly used in prayers (e.g. "Blessed art thou amongst women") and *among* in all other contexts. They go on to suggest that it is probable that *amongst* will gradually disappear.

With regard to specific studies, Bech (2006) has analysed the variation in Present-Day English by assessing different corpora, finding that *among* is generally the most frequent form, although *amongst* is more common in spoken language. She concludes that *amongst* "seems to be used more by

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2 However, in his notes to the 2009 edition of Fowler's *Dictionary*, David Crystal dismisses the idea that the distinction may be based on phonetic grounds, and suggests reasons of "personal taste" and "regional background" to account for the choice of one or the other form (Fowler 1926 [2009]: 747).

3 http://www.merriam-webster.com/dictionary/amongst (accessed 8 August 2012).

speakers who hesitate and need time to think before they speak, and/or mon[it]or their language more carefully" and that the two forms are not entirely interchangeable in terms of meaning (Bech 2006: 42).

In the light of all this and given that the variation between *among* and *amongst* remains virtually unexplored from a diachronic point of view, the usage of the words throughout the history of English will be analysed in this article in order to examine the variation within the different periods of the language (i.e. Old, Middle, Early Modern, Modern and Present-Day English) and to assess whether there are any factors explaining that variation. The study draws on a range of corpora, both diachronic and synchronic. The diachronic corpora employed are *The Helsinki Corpus of English Texts* (Rissanen et al. 1991) and *ARCHER: A Representative Corpus of Historical English Registers* (2006); the synchronic ones are the *British National Corpus* (*BNC*) and the *Corpus of Contemporary American English* (*COCA*) (Davies 2012).

2. Methodology

Etymologically, *among* comes from the Old English phrase *on gemonge*, from *on* + *gemonge*, the latter being the dative of *gemong* 'crowd', which comes in turn from *ge-* (associative prefix) + *-mong* (from Old English *mengan* 'to mix'). Before the 12th century, the phrase was shortened to *onmang* and by normal phonetic gradation to *amang*, *among*. The form *gemang* was employed without *on* as well, later evolving into *ymong* and *mong*. The word *amongst* comes from Middle English *amonges*, from *among* + the adverbial genitive *-es*, which in the 16th century was corrupted to *-st* due to form-association with superlatives (cf. *agains*(*t* and *amids*(*t*) (*OED* and *Merriam-Webster's Dictionary online*).

According to the *MED*, *among* can have different spelling variants in Middle English, the main ones being *among* and *amonges* (precursor of *amongst* as mentioned above), but they also include the following: *amonk*(*e*, *amonx*, *amongist*, *amang*(*es*; *emong*, *emang*(*es*, *emaung*, *emung*; *imong*, *imang*(*es*; *omang*(*es*; *en mang*, *in mong*(*e*, *in mange*, *on mang*; *mang*(*is*, *mong* (and *amang*, *amonkes*, *emang*, *emaung*, *imong*, *omang* as adverbs). No reference is made to any possible distinct meaning of the different spellings.

The earlier stages of the language (Old English, Middle English and Early Modern English) were examined by searching *The Helsinki Corpus of English Texts* (*HC*). The *HC* contains 450 texts from 730 to 1710, covering the Old, Middle and Early Modern English periods, which are in turn divided

into subperiods. The total word count amounts to 1,572,820: 413,250 for the Old English section; 608,570 for Middle English; and 551,000 for Early Modern English (Kytö 1996). Searches were done separately for each period, which has made it possible to assess the evolution of the terms. The later evolution was investigated with corpora of Modern and Present--Day English: *ARCHER: A Representative Corpus of Historical English Registers* (2006), the *British National Corpus* (*BNC*), and the *Corpus of Contemporary American English* (*COCA*)[4]. *ARCHER* consists of approximately one thousand texts from the years 1650 to 1999, comprising 1,789,309 words[5]. It includes both British (1,253,557 words) and American (535,752 words) English, thus allowing comparison between subcorpora. The *BNC* is a 100 million word corpus comprising the decades 1980s-1993; the *COCA* contains 464,020,256 words (at the latest update for 2012) from 1990-2012.

Wild-card searches were employed so as to obtain all the possible spelling variants; these included the search elements "*m*ng*", "*m*nk*" and "*m*nx*". One of the main difficulties was the overgeneration of forms. As Curzan and Palmer (2006: 22) state, one of the major handicaps when large and untagged databases are searched is basically the retrieval of far more data than originally contemplated. This has been the case since some of the corpora analysed share these two characteristics, i.e. large and untagged. For the Old English part of the *HC* alone, for example, 984 tokens were retrieved after the searches, 1,100 from the Middle English part and 1,527 from the Early Modern English part. Many of the instances, such as Old English *mildsunge*, *middangeard* or *semninga*, were not relevant and, therefore, the data had to be manually classified and some of them rejected. The same methodology has been followed for all the corpora examined. In order to statistically validate the results for significance, the normalised frequency (to a text of 10,000 words) of the occurrences of the forms of *among* and *amongst* has been calculated.

Frequency of occurrence, the phonological context following the prepositions, variables of written and spoken language, as well as semantic considerations have been examined and will be discussed in the following section.

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4 In order to retrieve all the instances of *among* and *amongst* in the different corpora, the files were loaded into *AntConc* (Anthony 2011), a freeware concordance programme.

5 The version consulted has been *ARCHER* 3.1. A corrected and expanded version, known as *ARCHER* 3.2, has recently become available (in December 2013) (see http://www.alc.manchester.ac.uk/subjects/lel/research/projects/archer/).

3. Analysis of corpora

Once the data from the Old English period were sorted, a total of 33 occurrences of AMONG[6] were obtained (*onmang* [7×]; *on gemang* [5×]; *in gemonge* [3×]; *on gemonge* [3×]; *amang* [2×]; *gemang* [2×]; *ingemong* [2×]; *ongemang* [2×]; *on gemong* [2×]; *ongemong* [2×]; *gemong* [1×]; *gimonge* [1×]; *gimongo* [1×]). No early form of AMONGST is evident in those data. The number of occurrences has been normalised for the sake of comparison, thus representing 0.79 occurrences of AMONG for every 10,000 words. Henceforth several examples of the data analysed will be provided after the quantification of the results for each period and corpus[7]:

(1) "…winn betwux þam Casere of Sexlande & his sunu. & **onmang** þam gewinnan se fæder forðferde". (COCHROE4.txt) […conflicts between the Emperor of Saxony and his son and in the midst of them fought and the father died.]

(2) "**Onmang** þam þe se cyng þone castel besæt. com se eorl…" (COCHROE4.txt) [While the king besieged the castle, came the earl…]

With respect to Middle English (encompassing the years 1150 to 1500 in the corpus), 217 occurrences of AMONG were found (*among* [101×]; *amonge* [34×]; *omang* [20×]; *amang* [13×]; *imong* [8×]; *mang* [7×]; *emonge* [6×]; *a-mong* [5×]; *emong* [5×]; *a-monge* [4×]; *a-mang* [2×]; *amange* [2×]; *emang* [1×]; *emange* [1×]; *enmang* [1×]; *i-mang* [1×]; *i-mong* [1×]; *in-mange* [1×]; *mong* [1×]; *monge* [1×]; *o-mang* [1×]; *ymange* [1×]. The searches also returned the word BIMONG (*bimong* [6×]; *bi-mong* [1×]), which occurs as a preposition and which is recorded in the *OED* as a form parallel to *among* and *ymong*, but is now obsolete. This occurrence in Middle English is not attested either in Old English or Early Modern English in the corpora examined.

(3) "and, syþ licnesse is cause of loue **among** men, sych diuision is cause of hate and enuye". (CMWYCSER.txt) [and, since similarity is cause of love among men, such division is cause of hate and envy.]

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6 Due to the different spelling variants, reference to *among* and *amongst* is made from now on in terms of prototypes and indicated by means of small capitals.

7 The reference of each example within the corpus is provided in brackets after the example.

(4) "In scho come, and none hir bad, **Omang** riche metes and gestes glad". (CMNORHOM.txt) [In she came, and none asked her, among rich meats and glad guests.]

As for AMONGST, 44 occurrences were retrieved (*amonges* [30×]; *amanges* [3×]; *omanges* [3×]; *ymangs* [2×]; *amenges* [1×]; *amongis* [1×]; *amongs* [1×]; *amongus* [1×]; *anmongeyst* [1×]; *emonges* [1×]).

(5) "For as moche as rumour and spekyngge is **amonges** some men of the Citee that vitaillers foreins…" (CMDOCU3.txt) [For as much as rumour and speaking is amongst some men of the City that foreign traders…]

(6) "Druuyd is of woednes myn eghe: i. eldyd **ymangs** all myn enmys". (CMROLLPS.txt) [Dried are my eyes from grief; feebled amongst all my enemies.]

Tokens for AMONG amount to 3.56 and those for AMONGST to 0.72.

Data from the Early Modern English period of the *HC*, which covers the period from 1500 to 1710, were also collected in order to trace the development of the words' usage. For this period, the sum of tokens for AMONG was 168 (*among* [115×], *amonge* [47×], *emong* [3×], *a mong* [2×], *omonge* [1×]) and, for AMONGST, 118 (*amongst* [101×], *amongest* [6×], *amonges* [3×], *emongest* [3×], *amongs* [2×], *emongeste* [2×], *amongesth* [1×]). These render 3.04 and 2.14 occurrences per 10,000 words respectively.

(7) "After this were there certaine questions **among** his councell proponed, whether the king needed in…" (CEBIO1.txt)

(8) "…examples of semblable beneuolence we can finde **amonge** the gentiles, in whom was no vertue inspired, but…" (CEEDUC1A.txt)

(9) "If a man with gorgeous apparell come **amongst** vs, although he bee a theefe or a murtherer…" (CESERM2A.txt)

(10) "And being a boy, new Bacheler of arte, I chanced **amonges** my companions to speake against the Pope: which…" (CEEDUC1B.txt)

The second corpus consulted, corresponding to the Modern English period, was *ARCHER*. The distribution of AMONG and AMONGST across this corpus,

after the searches and classification of data, was 353 occurrences of AMONG (*among* [353×]) and 98 of AMONGST (*amongst* [98×]) retrieved from the British English subcorpus. This equals 2.81 and 0.78 per 10,000 words respectively.

(11) "Quite a razzia has been made **among** the London weekly papers by the police of Paris." (1858peo2.n6b)

(12) "There will be intense discontent **among** Arab peasants over it." (1936dugd.j7b)

(13) "Pieces of charcoal, which is the worst **amongst** the more perfect conductors, were connected by…" (1825davy.s5b)

(14) "…and part of Sir Jeremy's fleet turned up **amongst** our ships." (1666alli.j2b)

From the American English subcorpus, 183 occurrences of AMONG (*among* [183×]) and 21 of AMONGST (*amongst* [21×]) were obtained, equalling 3.41 and 0.39 in normalised figures per 10,000 words each.

(15) "I wish there was more of it to be seen **among** all orders and professions, but…" (1775aadm.x4a)

(16) "Averse to magnificence and ostentation I live **among** them without ceremony, and shall not flatter…" (1787mark.f4a)

(17) "She was, at the time of his arrival **amongst** them, a lively girl of ten years old, wild as the…" (1798rows.f4a)

(18) "The powers of darkness be let loose **amongst** us, and they that be against them must be up." (1893wilk.d6a)

Finally, searches were conducted for Present-Day English by resorting to two synchronic corpora, the *BNC* and the *COCA*. For British English, the *BNC* was checked[8]. The number of tokens obtained was 22,153 for AMONG and 4,401 for AMONGST, which, translated into normalised figures, amount to 2.21 and 0.44 respectively.

8 Data were retrieved from http://corpus.byu.edu/bnc/ (accessed 20 August 2012).

(19) "But a very different response appeared **among** some bien pensant intellectuals". (AHG W_newsp_brdsht_nat_arts)

(20) "Nor did he find much useful support **among** artists, in part because he began his tenure with the blessing…" (CRA W_pop_lore)

(21) "At home many keen gardeners **amongst** the clergy subscribed, for example, the Dean of Rochester and…" (ALU W_misc)

(22) "Demand for advice is strongest **amongst** actual victims of computer misuse, where it is effectively…" (CBX W_commerce)

For Present-Day American English, the *COCA* was examined[9]: 159,457 tokens were retrieved for AMONG and 2,664 tokens for AMONGST, yielding 3.43 and 0.05 respectively in normalised figures.

(23) "Newly discovered principles show the similarities **among** networks of all kinds, from the Internet to Al Qaeda". (2002 NEWS CSMonitor)

(24) "In the business world, and **among** energy services professionals, a more familiar indicator of…" (2001 ACAD EnergyJournal)

(25) "There will be good journalism and bad journalism **amongst** that, but it does democratize the process and I think that…" (2004 SPOK CNN_ Intl)

(26) "I maintain that it is precisely an influence of Christianity, **amongst** other ways of thinking associated with colonial and…" (2007 ACAD AfricanArts)

When comparing the results provided by the different corpora (Fig. 1), a significant difference is found in the usage of the two words in the history of English: *among* is the most frequently employed word in all the periods. However, during Early Modern English the usage of *amongst* increases considerably. This period records the largest number of instances of all for *amongst* and the disparity in terms of occurrence between *among* and *amongst*

9 Data were retrieved from http://corpus2.byu.edu/coca/ (accessed 20 August 2012).

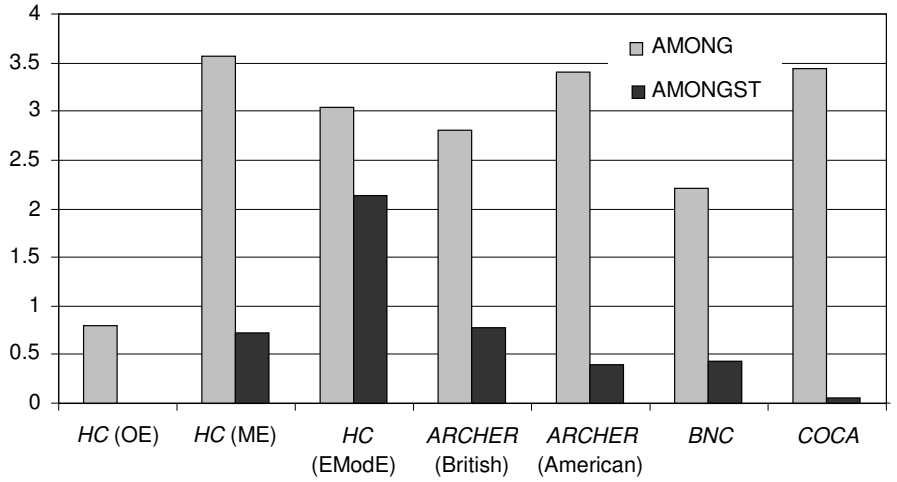

Figure 1. Development of usage of *among* and *amongst* in the corpora analysed

is not as great as in the other corpora. After Early Modern English, there is a sharp drop in the quantity of occurrences. Another important difference has to do with the variety of English in which the words are used: the American part of *ARCHER* together with *COCA* include the smallest number of occurrences of *amongst*- with a decreasing use of the word as well.

3.1 Phonological context

Insights into the variation between *among* and *amongst* may be gained by taking into consideration phonological contextual factors (see Introduction). The type of sound that follows the preposition, whether vocalic or consonantal, may have an influence on the occurrence of one or the other due to articulatory reasons (i.e. ease of articulation). In other words, the endings (a velar nasal in the case of *among* and an alveolar fricative[10] plus a dental stop in the case of *amongst*) may favour a certain context.

Since the variation starts in Middle English (no antecedent of *amongst* is attested in Old English), this will be the starting point for the examination of phonological context. Forms functioning as adverbs and cases of preposition stranding have not been considered (examples 27 and 28).

10 Only a dental stop in Middle English.

(27) "Bot if God help **amang**, I may sit downe daw To ken. Now assay will I How". (CMTOWNEL.txt) [Unless God helps, I may sit down as a fool. Now I will assay how…] (Middle English)

(28) "…and of the gloomy things you find yourself **amongst**. Do not be so uneasy about the future. Try to…" (1886giss.f6b) (Modern English)

In Middle English, 139 instances of AMONG are followed by a consonant and 51 by a vowel (2.28 and 0.83 in normalised figures respectively). As for AMONGST, 29 instances are followed by a consonant and 14 by a vowel (0.47 and 0.23 in normalised frequencies).

In Early Modern English, AMONG + consonant occurs on 138 occasions and AMONG + vowel, on 29 (2.50 and 0.52 in normalised figures correspondingly); those occurrences of AMONGST + consonant amount to 85 and those of AMONGST + vowel to 32 (1.54 and 0.58 in normalised figures).

The results for Modern English are the following: for British English, 304 instances of AMONG + consonant and 47 instances of AMONG + vowel (2.42 and 0.37 in normalised figures), whereas 75 instances of AMONGST + consonant and 21 instances of AMONGST + vowel (0.59 and 0.16 in normalised figures); for American English, 162 instances of AMONG + consonant and 20 instances of AMONG + vowel (3.02 and 0.37 in normalised figures), whereas 15 instances of AMONGST + consonant and 6 instances of AMONGST + vowel (0.27 and 0.11 in normalised figures).

Finally, for Present-Day English, due to the large number of instances, a sample of 100 occurrences and their corresponding contexts have been analysed for each of the words in both corpora. In the case of the British corpus (*BNC*), the occurrences of AMONG + consonant are 83 and of AMONG + vowel, 17; those of AMONGST + consonant amount to 70 and of AMONGST + vowel to 30. With regard to American English (*COCA*), 74 instances of AMONG are followed by a consonant and 26 by a vowel. Where AMONGST is concerned, 68 instances are followed by a consonant and 32 by a vowel.

In the light of these results and as the data in Fig. 2 demonstrate, in Early Modern English *amongst* seems to be preferred over *among* when a vowel sound follows, a pattern which is neither present nor continued in the directly previous and subsequent stages (Middle and Modern English respectively), but which reappears in Present-Day English, as *amongst* occurs with a frequency slightly higher than that of *among* before a vowel sound both in British and American English (see Fig. 3).

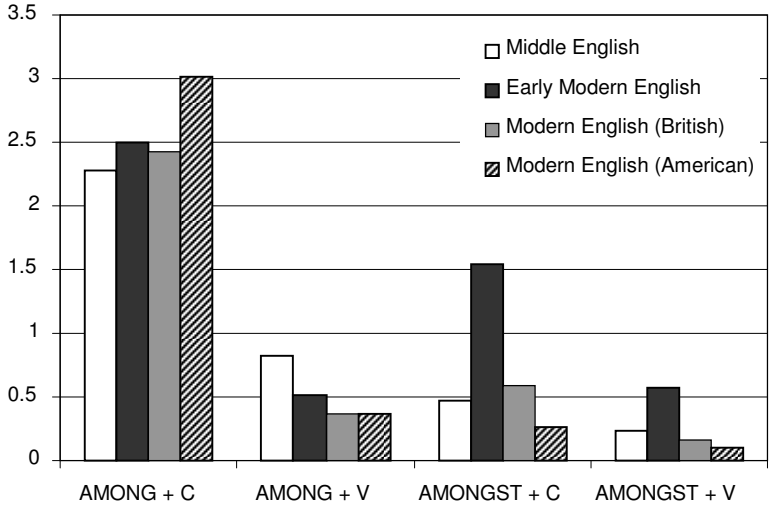

Figure 2. Phonological context of *among* and *amongst* (diachronic)

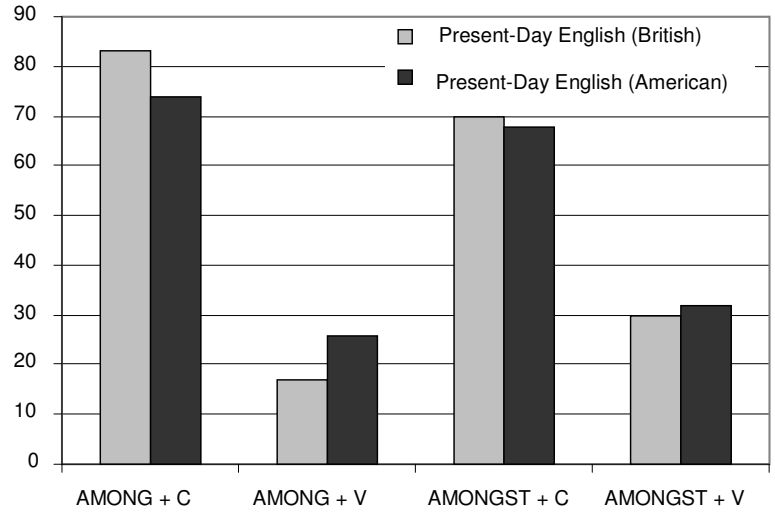

Figure 3. Phonological context of *among* and *amongst* (synchronic)

3.2 Written versus spoken language

The synchronic corpora on which the present study was based have allowed instances of written and oral language to be retrieved separately. In the *BNC*, the number of tokens obtained for AMONG was 22,153, of which 21,884 belong to written language and 269 to spoken language (2.18 and 0.02 in normalised figures respectively). For AMONGST, they amount to 4,401: 4,087 tokens for

written language and 314 tokens for spoken language (0.48 and 0.03 in normalised figures respectively).

In the *COCA*, a total of 159,457 tokens were retrieved for AMONG, of which 144,213 were written and 15,244 spoken (3.10 and 0.32 in normalised figures respectively); for AMONGST the number of tokens was 2,664: written, 1,670; spoken, 994 (0.03 and 0.02 in normalised figures respectively).

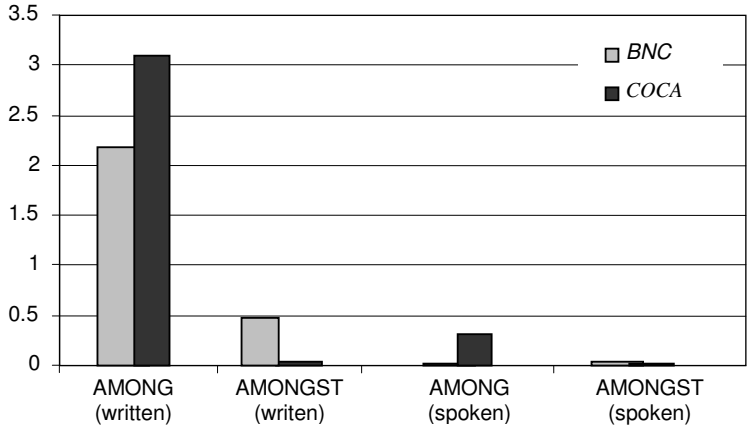

Figure 4. Written vs. spoken language (synchronic)

The data corroborate the supposition that the use of *amongst* is more typical in British than in American English, but also show that in British spoken language *amongst* is more frequent than *among*.

3.3 Semantic difference

There seems to be no consensus on whether *among* and *amongst* are semantically differentiated (see Introduction). After a cursory examination of the data, we can tentatively suggest that there is no evident semantic distinction between the two forms. Both *among* and *amongst* are employed before the same words and appear to be used interchangeably.

(29) "…all of this season of bad will that has grown up **among us**. Give it back to you". (1989lat2.n8a) (American Modern English)

(30) "…in the sore throat (which appeared lately **amongst us**) with success; so that I hardly dare venture…" (1769bard.m4a) (American Modern English)

(31) "…but it remained as no more than a fashion **among the rich**. It was a fashion now past". (H84 W_fict_prose) (British Present-Day English)

(32) "…resentment within certain sections of the country, especially **amongst the rich** who would stand to lose a great deal if Mobuto…" (EF1 W_fict_prose) (British Present-Day English)

4. Conclusions

In spite of the number of spelling variants in the earlier stages of the language for the words under study, they were reduced to the two forms currently in use, *among* and *amongst* (of which the former is the most common) in Early Modern English- a period in which standardisation and defining what represented "good" English were key ideas. In this respect, Lass (1999: 8) argues that "[the] growing perception of standardness as a virtue […] is connected with a general late Renaissance and Enlightenment desire for linguistic 'normalisation' and 'stabilisation'". Classical principles heavily influenced stylistic developments in renaissance English writing, which increased the popularity of complex constructions (Rissanen 1999: 189). This idea can help to explain the increased use of *amongst* in this period (in fact the highest for all periods of English), as this word might have been perceived as belonging to a register more sophisticated than that of *among*.

With regard to the variety of English, the results confirm previous discussion on the topic in that the use of *amongst* is more common in British than in American English.

On the basis of the evidence discussed in Section 3, it can be said that *amongst* is preferred over *among* in Present-Day English when a vocalic sound follows. This usage has a parallel in the history of English, namely in Early Modern English, in which the same tendency has been observed. Another finding is the higher occurrence of *amongst* in oral language in Present-Day British English. Further assessment on phonological issues including rhythm and stress patterns of the phrases which contain the prepositions could give more insights into the variation.

Concerning semantic differences (cf. the *OED*'s explanation in the entry for *amongst* stating that, compared to *among*, it usually denotes "dispersion, intermixture, or shifting position"), in view of the data analysed, both words

seem to be interchangeable with no evident distinction in terms of meaning. However, further research is needed to confirm their semantic equivalence.

Although the data show a steady drop in the usage of *amongst* and no clear difference between it and *among*, it cannot be concluded, as suggested in the literature, that *amongst* will disappear and *among* will take over.

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The representation of modality in non-standard English

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ABSTRACT

Among the possibilities given to a speaker to express his/her subjectivity, there are often unexploited traces in utterances that may be of linguistic interest. The description of these marks shows that modality takes on various forms which are distinct from the usual phonological and syntactic types. Apart from double modal constructions which can be described as the result of epistemic modality in conjunction with root modality, this paper analyses the colloquial use of *ever*, *kind/sort of*, *like*, *happen* as they occur in informal speech. Such formulaic expressions are modal forms which signal an attitude toward a proposition and point to the concept of speaker involvement in utterances. These features, moreover, give the utterer's speech a personal touch and vary according to his/her own language use.

1. Introduction

The grammatical notion of modality, defined by Palmer (1986: 16) as the grammaticalization of speakers' attitudes and opinions, is often associated with so-called modal verbs like *can*, *must*, *will*, *may*, *should*, etc. (which represent well-known cases of grammaticalization). Biber et al. (2002: 458), for instance, think of modality as "the expression of logical meaning or personal meaning through the use of modal auxiliary verbs". Huddleston – Pullum (2002: 172-173) present modality as a category of meaning (as opposed to mood which is a category of grammar), but they illustrate it with examples containing modal auxiliaries. Indeed, these verbs mark the qualification in a proposition which indicates whether a statement is true, possible, necessary or contingent, but they also express concession, emphasis and degree. The proposition usually

takes the form of a subject-predicate structure and modality designates the way in which the proposition is viewed by the speaker (Lapaire – Rotgé 1993: 291). In a sentence like *It may rain tomorrow*, the proposition <it – rain> is qualified by the modal verb *may* and can be reworded as follows: *it is likely to rain tomorrow*, expressing the probability of raining. The paraphrase (*is likely to*) brings out the contingent/epistemic reading of the modal verb and makes the attitude toward the truth of the proposition more explicit.

According to Culioli – Pécheux – Fuchs (1970), "any speech act presupposes an attitude to the relationship which contains the proposition". ("Tout acte d'énonciation suppose une attitude prise à l'égard de la relation qui contient la lexis".) This definition, which concurs with Huddleston – Pullum's statement that "modality is centrally concerned with the speaker's attitude towards the factuality or actualisation of the situation expressed by the rest of the clause" (2002: 173), points to the general concept of speaker involvement which exists in all utterances, especially those in interpersonal exchanges. In these, many surface markers other than modal auxiliaries can be analysed as revealing subjectivity.

Among the possibilities given to a speaker to express his or her subjectivity, there are often unexploited traces in utterances that may be of linguistic interest. The description of these linguistic marks may show that modality takes on various forms which are distinct from the usual phonological and syntactic types, particularly the form of the verb. Informal, non-standard speech is rife with what can be called set phrases or fixed formulae such as *like*, *you know*, *kind of*, etc. Not only do these fixed-form expressions punctuate people's speech, but they are also verbal markers denoting a speaker's personal comment on a proposition which are likely to refresh the addressee's attention (cf. *you know*, *you see*, *mind you*, …) and have a conative function which centers the message on him/her in the communication situation. Furthermore, these modal forms give the utterer's speech a personal touch and vary according to regional usage and his/her own language behavior in the same way as, for instance, an accent.

Apart from double modal constructions, which have been approached in the literature in many ways and can be described as the result of epistemic modality in conjunction with root modality (Brown 1991: 76-77; Abraham 1998; Denison 1998; Larroque 2005: 212-213; Brandstetter 2006; Larroque 2010), this paper analyses the colloquial use of *ever, kind/sort of, like,* and *happen* as they occur in examples mostly taken from Hughes – Trudgill's book *British Accents and Dialects* (1996) and Keith Richards's biography, *Life*, published in 2010. Other elements of the corpus come from informal instances. One

example is an excerpt in dialectal English from Emily Brontë's *Wuthering Heights* (1847). The selection of these features was based on the fact that they do not involve a verb phrase (*you know, you see*, …), and the notion that words can belong to more than one category according to the speaker's own language use.

I shall begin with a short survey of double modal constructions and briefly discuss some of their aspects.

2. Double modal constructions

Certain regional non-standard varieties in the southern states of America, the north of England (Tyneside, the Midlands), and Scotland allow some combinations of modals. Structures such as the following, which are considered mistakes in Standard English, are quite common, though limited, in non-standard dialects.

i. I **might could** be able to visit later on (North America, *Descriptive Grammar of Modern English*, 2009, p. 4)

ii. She **shouldn't ought** to be here (*Descriptive Grammar of Modern English*, 2009, p. 4)

iii. OK, erm, I've got I just thought I'**d might** just let you know that… (UK, taken from a conversation, spoken part of *BNC*)

iv. Erm, the next one we'**ll shall** go, erm go to market will do (UK, taken from a comment on Gauguin's paintings, spoken part of *BNC*).

In the introductory discussion, I said that double modal constructions arguably bring out the root and the epistemic readings of a modal. In such combinations, both modals seem to operate syntactically and semantically in a restricted order. For instance, in the above sentences the first modal has an epistemic meaning: *it is possible/predictable/required that*… With *might* in (i) it is not surprising since this modal is essentially used in its conditional sense. *Should* as a single modal can be either an epistemic (*it should rain tomorrow*) or a root modal (*you should obey your mother*), depending on whether the relationship is interpersonal or not. As the first modal in the above combination (ii), *should* can be used epistemically since the proposition refers

to the sphere of non-self. *Would* (*I'd* in iii) generally occurs in desactualized propositions expressing condition or wish (epistemic sense), thus indicating an attitude to the truth of the proposition as in the example. *Will* (*we'll*) can be epistemic with the sense of prediction as in (iv) and should not be restricted to being a simple marker of futurity.

The second modal has a root meaning and concerns the subject-predicate nexus. For instance, in (i) *could* refers to ability, and *ought* in (ii) and *shall* in (iv) can be interpreted as deontic markers. As for *might* in (iii), it seems to be used in a root sense spelling out possibility (cf. *it would be possible for me to let you know*). The paraphrase here shows that the modal verb applies to the sole subject-predicate structure and not to the entire proposition.

It is instructive to note that the epistemic modal comes first in the construction as it denotes the speaker's assessment of the propositional content. Thus, the modal applies to the whole proposition and therefore establishes a direct relationship between the speaker and the utterance; that is another reason why the first modal is logically and iconically restricted to an epistemic sense and has an attitudinal function. The nature of the second modal is close to that of a lexical verb: it marks the relationship between the subject and the predicate (Larroque 2010: 130).

Yet, modality, as we have seen, does not necessarily imply the form of the verb or the use of modal auxiliaries. Other surface markers may signal the speaker's subjectivity: let us first consider the case of the adverb *ever*.

3. The function of *ever*

Ever is a time adverb roughly meaning 'at any time', 'always', 'at all times'. It is used for frequency or temporal location as it scans over (a period of) time. It can also be used as an intensifier to emphasize a phrase expressing surprise or impatience. In the following examples, *ever* occurs in non-standard perfective constructions in which the auxiliary (*have*) is omitted[1].

(1) "**Well, the Finnegan family taught me the greatest apprenticeship that anyone could ever got**. I got a great apprenticeship off the Finnegans and unfortunately for them, luckily for me, because of my background in, in management, and being able to read blueprints, and estimates,

1 By 'perfective' we understand a construction which indicates the completion of an action or state denoted by the verb.

I became the superintendent. So I was their boss after six months." (Hughes – Trudgill 1996: 108)

(2) Mouse gets his nickname because he is small and weedy. In this extract, Mouse knows that the biggest, toughest boy in the school, Marv Hammerman, is looking for a fight with him. Mouse talks about it with his friend, Ezzie… "**You ever been hit**, before, Mouse? I mean hard?" Mouse sighed. (*BNC*, 1985-1994. An alternative assembly book. Hoy, Mike, Linda. Harlow: Longman Group UK, 1991)

The standard sentences corresponding to those in bold type in (1) and (2) are *Well, the Finnegan family taught me the greatest apprenticeship that anyone could ever have got* and *Have you ever been hit?.* In these sentences the locative operator *have* is deleted. In (1) it is the adverb *ever* that permits that interpretation, because *got* is ambiguous (past tense or perfect). In (2) the past participle *been* implies *have* and disambiguates the proposition. There are in non-standard English modals which are followed by a verb in the past (cf. *He ought to went to school,* W. Faulkner, *Soldier's Pay* 1930: 103). In that case the modal auxiliary is the only mark left by the speaker to indicate his subjectivity. In the above examples (1-2), *ever* signals the reviewing of all the situations endorsed by the speaker at the moment of coding. It therefore functions as a locative modality which relates the subject-predicate structure to the speaker. A sentence like *Have you ever heard anything?* may become by syntactic compression *You ever heard anything?* or *Ever heard anything?*. Sometimes the construction is reduced to a minimum: *You hear anything?*. The grammatical meaning of the latter will be defined with respect to the speech situation: the scanning (or reviewing) of several situations or a single reference. In the following example (3), the question applies to a specific situation which functions as the relative landmark:

(3) The truck driver said, "They was a big dance in Shawnee. I heard somebody got killed or somepin. You hear anything?" "No," said the waitress… (J. Steinbeck, *The Grapes of Wrath* 1939: 5)

In examples (1) and (2) *ever* is the locative operator. According to the ease-of-effort principle, *have* – which has become redundant relative to the locative operation – is deleted. *Ever* remains since it represents the mark of a class-reviewing operation which consists in examining mentally a set of situations, and is precisely attitudinal. But *ever* is an adverb and as such

can act as a surface marker expressing some relation with the speaker; it has been reanalysed or reinterpreted, as is the case with *kind/sort of.*

4. *He kind of liked that*

The phrase *kind/sort of* is cited by Hughes – Trudgill (1996: 96) as a colloquialism. This widespread usage consists in placing it between the subject and the predicate, and it is often regarded as natural or normal in everyday speech[2]. *Kind/sort* (*of*) usually occurs in instances in which a type of person or thing is expressed as in the following:

(4) a. What kind of person are you? (conversation, *Yahoo!Answers*)
b. …and he's the kind of guy that would do it. He's serious. ("Renaissance year in full swing for Blackley", *The Australian Baseball League*, July 29, 2012)
c. I don't like that kind of "joke". (conversation, *Yahoo!Answers*)
d. "So there's a lot of, er depressed and unhappy and very poor people there as well, so you've got erm… it's a kind of reflection of the nation." (Hughes – Trudgill 1996: 50)
e. The five-string took me to the tribesmen of West Africa. They had a very similar instrument, **sort of a five-string, kind of like a banjo**, but they would use the same drone, a thing to set up other voices and drums over the top. (Keith Richards, *Life* 2010: 244)

In vernacular English, *kind of* functions somewhat differently from its common use:

(5) My apologies were very abject the following day. In the case of the old man, big Al, a great guy, I think at least he saw that I was willing to take a chance, and **he kind of liked that.** (Keith Richards, *Life* 2010: 429)
(6) Then jump in the car and drive. We had no idea where we went. **It was kind of like the drive** I did with John Lennon, we just went. (Keith Richards, *Life* 2010: 374)

2 Natural or normal language corresponds to the linguistic behavior of ordinary people. An unnatural or abnormal use of language means that the utterance does not belong to an actual variety of the language (Andersson – Trudgill 1992: 28, see also Larroque 2008: 356).

(7) "The shelf that's in the airing cupboard won't support the weight of any body, and from outside you can't get your head up over the top. Well… no no, and it means that Pete's got to s… **kind of get up and over**, well what's worrying me is, you've got to turn the water off…" (Hughes – Trudgill 1996: 80)

(8) "They go round well away shouting and everything and… and the boss and the manageress is standing watching them… **but they must be all right, kind of thing**, or otherwise they wouldn't put up with it, would they, like… true, yeh…" (Hughes – Trudgill 1996: 95)

(9) Let's put on a straight chorus. In other words, let's try and reach them people up there as well. **It was a dare, kind of**. (Keith Richards, *Life* 2010: 268)

In (5) and (6), *kind of* functions as an adverb which modifies the predicate. It can be construed as attitudinal, and it cushions the meaning of the predicate (approximation: *somewhat, rather*). In sentence (7), however, the modality does not exactly tone down[3] the meaning of *get up and over*, it, as it were, modifies it. The speaker, unsure of the exact word to describe the action, uses an attitudinal modality in order to tend toward the meaning of the predicate (cf. *nearly*). In examples (8) and (9) the adverbial modifiers, *kind of thing* and *kind of*, follow the subject-predicate relationship. The speaker points back to the assertion to make it weaker: in (8), *thing* is anaphoric to *they must be all right*, while in (9) the ellipted item is retrievable from the preceding sequence. Since this *a posteriori* modification is anaphoric, it follows that the referential element is given focal prominence (here, *they must be all right*). Thus, *kind of*, which has acquired an adverbial function, is actually a modal, for not only does it act as a quantifier (cf. *rather, somewhat, nearly*), but it also has a qualifying function (the attitudinal point of view).

The conversion from the noun (*a kind of*) to the modality may be explained by the fact that the word *kind* has a generic meaning. It refers to a species (cf. *mankind*) and therefore to a category, a unit-class from which syntactic constructions can be used to express grading. An item – a noun (*five-string, banjo, reflection*) or a predicate (*get up and over*) – can be selected in order to be modified, or toned down. There is much speaker involvement in this type of construction, which can be analysed as an attitudinal adjunct and a distance relative to the subject-predicate structure.

3 Quirk – Greenbaum (1973: 218) categorize *kind of* as a compromiser.

Another grammatical form, *like*, which can be used as a preposition, a conjunction, an adjective or an adverb, and sometimes occurs with *kind of* (cf. *It was kind of like the drive…* in example 6, or *…kind of like a banjo* in sentence 4e), may also function as a post- modifier in cases of informal speech.

5. *Like*

It is not unusual in vernacular English for *like* to act as an adverb roughly meaning 'in a similar way'. The morpheme occurs twice in the following example:

(10) "Yeh, she's gone to America for three weeks, so we all go sad again next week… She comes over… I'll go polishing everything next week… **She's a good manager, like, isn't she?** But er… she's a real Annie Walker, you know everything's got to be so… she's… once you get to know her, she's great but you can't drink and you can't have a smoke… We're all walking round with four lighted cigarettes in our hand and having a drink off everyone that gives us one… yeh, we're in charge, yeh… well he's in charge of them all and I'm the monitor… I'm er… when he's not there I'm in charge… but er it's… I tell you what, if she left I wouldn't go there… cos, you know, I do really like working for her. She's straight… and she trusts you and **that's imp… that's the main thing, like, isn't it**, you know… she is… she's great… I don't think she's ever laughed till I went there…" (Hughes – Trudgill 1996: 95)

In English *like* is a word that expresses comparison (cf. *liken*), similarity (cf. *likeness*), probability (cf. *likely*), grading (*to some extent, nearly*). It is also used when appearance or quality is interrogated as in *What does he look like?*. In vernacular English, *like* is regarded as a colloquialism, which means that it is a feature of informal, spoken language. It is also an attitudinal mark which punctuates oral speech, thus indicating the speaker's involvement in his production. In example (10), *like* follows the subject-predicate structure and fulfils several functions. The first occurrence is, so to speak, anaphoric and makes reference to identity (*she = a good manager*), which in turn is qualified (*like = to some extent*). *Like*, therefore, signals an *a posteriori* judgement on the subject-predicate structure (modal use). Then it can be said that in *she's a good manager* there is the implicit question: *what's she like?,* which aims to create an attitude. The context hedges on the speaker's judgement:

"…but, er… she's a real Annie Walker, you know…",
"…she's great but you can't drink and you can't have a smoke…"

That is what the particle *like* signals in speech. The speaker mentions a fact or ventures an opinion, and then looks back to his statement to mitigate the force of it, as if he had a doubt or an afterthought which would justify reconsideration. It seems that the speaker distances himself from his utterance; hence, the modal reading of *like* which reflects an attitude to the propositional content.

This analysis is confirmed by the second occurrence of *like* in example (10), whose reconsideration of the subject-predicate relationship is also explicit in the context:

"…that' imp… that's the main thing, like, isn't it, you know…"

Like, in this case, directly relates the sentence to the speaker, who expresses an assessment of the proposition and reduces its force. Thus *like* is a verbal mark indicating the involvement of the speaker. It can, moreover, be analysed as an intensifier inasmuch as it points back to the predication, emphasizing it. Note also that both instances of *like* appear in sentences ending with a tag-question (*isn't it?*) which looks back to the subject-predicate relationship and may reverse the polarity of the statement, thus giving the addressee leeway as to the views of the speaker. *Like* represents, as it were, the first mitigating stage of an assertive proposition as it appears in (11).

(11) "I came back to the bed, like after breakfast… I was just like laying on it a bit and reading th… the paper, and…" (Hughes – Trudgill 1996: 72)

In this sentence the proposition *I came back to the bed after breakfast* is punctuated, identified and commented upon. Again, there is the anaphoric value of the particle which picks up the proposition. Commenting or identifying an object presupposes that it has an antecedent. The second *like* occurs in *I was just like laying a bit on it,* and clearly shows the attitudinal and intensifying function of *like*. On the one hand, the proposition is to some extent "hedged", and *like* acts as an *as it were*, a judgement which emanates directly from the speaker (expression of modality). On the other hand, it points back to it. Thus in the sentence *I was just like laying a bit on it*, *like* expresses some kind of grading relative to the action *lay*, the subject intended to read his newspaper in bed and was not completely lying, and in the meantime it highlights the action.

The modal use of *like* in non-standard English sentences naturally derives from its usual meanings. Indeed, comparison, similarity and attitude necessarily suppose looking back to a referent, hence the anaphoric value of *like* in the above contexts. This back-pointing operation permits a second quantifying/qualifying one, denoting the speaker's attitude to the propositional content. In addition, the sentences in which *like* occurs exhibit the speaker's expressiveness, a feature of informal, vernacular speech in which there is more speaker involvement.

In light of what has been said about the modal use of surface markers such as *like* or *kind of*, let us now turn to the case of the word *happen*, which is regularly used as an adverbial in Northern and/or dialectal English.

6. The conversion of *happen*

In modern Standard English *happen* is a regular verb used intransitively, in phrases (*happen to do something*), or in impersonal constructions. Some examples appear in (12a-e):

(12) a. …that, that's how it don't come out, what's happened to you? (conversation by 'Leon', 1985-1995, *BNC*)
b. I've got something humorous happened to me, one thing I'll never forget. (Hughes – Trudgill 1996: 76)
c. "I'll tell you a s… a story about something that… that happened a couple of years ago, erm…" (Hughes – Trudgill 1996: 51)
d. Well it so happens that I did intend you to do a paramount of talking this afternoon, so… (classroom interaction, recorded on 8 Feb. 1994, *BNC*)
e. …or did I have to fill a census form just at the time when Paul was with me? When he happened to be with me… (conversation by 'Brenda', Dec. 1991, *BNC*)

In these sentences *happen* has two meanings: on the one hand it bears the sense of *occur, take place without being planned* (12a-c), and on the other hand it may be used for saying that something is surprising or related to chance (12d-e).

It is a well-known characteristic of the English linguistic system to convert an item from one lexical or grammatical category to another without modifying its morphology. Take the word *work* from the abstract notion WORK, for example. It can be either a verb or a noun depending on

its position in the sentence: it is a verb when it follows a noun or a pronoun (*Some people work hard to earn their living*) and a noun when it precedes or follows a verb or a preposition (*Work is not easy to find, I have a lot of work, Men at work*). Thus a morpho-syntactic analysis will be needed to draw a distinction between them. There may be some difficulty in identifying and understanding the message, but unclear cases are rare. Contexts will help to resolve all remaining ambiguities.

However, this grammatical flexibility has its limits and what happens with *work* (and many other words) cannot apply systematically. For example, Standard English does not allow the conversion of the verb *happen* into an adverb as is the case with *like,* which appears to be a multifunctional word. The category change will generally involve a morphological modification of the word or the addition of a suffix as in *happening* which can be a noun denoting an important or unusual event, or an adjective meaning lively and fashionable. In non-standard English, which is a more flexible variety than Standard English, liberties can be taken with the prescribed rules and *happen* can be used adverbially and describe a whole sentence as in (13) and (14):

(13) Happen it'll rain later on. (*Cambridge Advanced Learner's Dictionary* 2005)

(14) "Bud, Aw can look for norther horse nur man of a neeght loike this – as black as t' chimbley! und Heathcliff's noan t' chap to coom at maw whistle – **happen** he'll be less hard uh hearing wi' ye!" (Emily Brontë, *Wuthering Heights* 1847: 84)

Happen obviously derives from the verb *happen* which comes from Middle English *hap* meaning 'chance' or 'good fortune'. Moreover, *hap* is cited in the *Random House Webster's Dictionary* (2003) as synonymous with *happen,* as it is also an extended form of the verb *hap* (cf. the *Oxford English Dictionary* 2009). In (13) and (14) it is a disjunct[4], i.e. an adverbial peripheral to the structure of the clause which expresses the speaker's evaluation of what is being said (Quirk – Greenbaum 1973: 126), that is, his attitude to the propositional content. In example (13) it applies to *it'll rain tomorrow* and in (14) *happen* modifies *he'll be less hard un hearing wi' ye!*. But it can also be used as an adjunct and be integrated in the structure of the clause as in the following:

4 The OED (2009) mentions an archaïc (dialectal) adverb *perhappen*, so in (13) and (14) *happen* may simply be analysed as an apheretic form of the adverb.

(15) "I mean you couldn't sing with your teeth, he (the school teacher) said, like that, you know… You've got to open your mouth to sing… and he used to open his… and he'd about two teeth in the middle… sort of thing, you know, all of us kids, you know, looked and he seemed to have three or four, you, missing or more **happen** just two good… oh aye, he were a lad, I tell you…" (Hughes – Trudgill 1996: 91)

In this example uttered by a person from Bradford who relates his school years, *happen* has an adverbial function and applies to the phrase *just two good*. As the notion of adverb can be somewhat broad and vague, it may appear more appropriate to speak of modality to describe this particular use of *happen*, inasmuch as it signals an attitude to the utterance: it voices doubt about what is expressed, thus relating the utterance to the speaker. In English, doubt is usually expressed by *perhaps*. It is indeed easy to reword *happen* using that modal adverb:

> *…he seemed to have three or four, you know, missing or more perhaps just two good…*

Maybe can also occur instead of *perhaps* (there is indeed an archaïc adverb *mayhap* short for *it may hap*) as it makes the modal character of the proposition more explicit (cf. *may*). Note that in sentence (13), *happen* also means *perhaps*, the description of which shows a connection with *happen*, for it can be split up into *per* + *hap*(*s*), which takes us back to *hap*, the origin of *happen,* and semantically relates it to chance and by extension possibility, probability, and doubt. This may explain why *happen*, which usually occurs as a verb, both in non-standard and Standard English, can appear in the same adverbial position as *perhaps*.

7. Conclusion

The above analysis shows that the system of English is not affected by such semantic-pragmatic changes. English is capable of absorbing them. Other examples which illustrate this type of conversion include *you know*, *mind you*, *you see*, *why*, *I say*, …They help to keep the conversation going and define the roles of speaker and hearer. The description of *kind of* and *like* has revealed that they both have become attitudinal adverbs. As for *ever*, already an adverb, in non-standard speech it assumes the function of locative operator in the absence of the expected *have*, and as such it relates the subject-predicate

structure to the subject and expresses an attitudinal relationship. It should not be forgotten that *ever* is used for emphasis – which is essentially attitudinal – when making comparisons. In example (1) *ever* occurs alongside a superlative structure (*the greatest apprenticeship*) which is the speaker's own doing, thus establishing a relationship between him/her and the utterance.

As we have said, none of these variations challenges the linguistic system. The phenomenon already exists in English with many words. What is at stake here is that the colloquial use of *ever*, *kind/sort of*, *like*, and *happen* seems to be motivated by the speaker's desire for expressiveness, that is, adding some significance to discourse, hence denoting his or her involvement. Semantic and grammatical changes are linked to subjectivity. These words tend to express an assessment of the propositional content, and as such can be analysed as types of modality. The modality either governs a noun or a verb phrase, or applies to the entire proposition, and shows an intention on the part of the speaker. Some of these attitudinal adverbs have undergone a category change, like *happen*, but also such expressions as *mind you* or *you know*. They have become set phrases, almost reflexes, speech formulae that fulfil an obvious linguistic function: redefining or reinforcing the speaker-hearer relationship.

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A multitude of voices and worlds: Towards a new model of the medical case report

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ABSTRACT

Patient-centredness is an umbrella term for trends in medical practice that have attempted to redefine the doctor-patient relationship. Two decades ago, the concept of *patient advocacy* was introduced to emphasise a more empowered role for the patient. This paper problematises the patient's perspective in medical case reports from professional medical journals. It attempts to determine how these concepts are realised at the level of specialist text by looking for their linguistic manifestations of the two above-mentioned notions of medical practice. Further, the paper proposes a more patient-oriented variety of case reports. In this way, it addresses the conceptualisation of the patient in the written context, something which has received comparably less attention than that of spoken discourse in medical settings studied with a view to improving the quality of physicians' encounters with patients. Medical texts may not consider communication in the doctor--patient dyad, but nonetheless they refer to patients, and how they do so is critical.

1. Introduction

The ability to communicate effectively has always been a concern in medicine. Recently, medical practice has witnessed major changes and faced challenges which have found their reflection in studies of medical discourse. Some of this research examines discourse practices with reference to impressive technological advancement, specialisation of knowledge, progressing systematisation and withdrawal of management (e.g. Iedema 2006). Other studies address the issues of communication in multicultural settings (Roberts 2006). The aim of such research is not only to help clinicians in their work but also to improve the quality of their encounters

with patients. The need for cooperation between medical professionals and linguists originates from the pivotal role of language in medical activities. As Foucault (1973) observes, almost every aspect of patient management is accomplished by means of language, from an interview, through the description of the patient's condition, to instructing him/her. Language also plays a significant role in the *patient-centred* and *patient advocacy* approaches, alternative models of practicing medicine, where eliciting and communicating a patient's experience of illness and empowering the patient respectively take centre stage. Yet, although substantial literature regarding doctor-patient communication exists, the question arises as to whether written medical discourse can also adopt the patient's perspective. In this paper, the discursive construction of a patient's perspective in medical case reports will be examined. Firstly, the theoretical background will be presented, including the aforementioned two approaches, the description of the medical genre of the case report and its development, as well as the linguistic features that do not accord with the approach. Secondly, how medical authors textually acknowledge patients as experiencing individuals in the interactive variety- in accordance with the premises of the *patient-centred approach* and *patient advocacy*- will be presented. Finally, a model of a new type of case report will be presented based on an interactive case report. By way of discussion, an attempt will be made to show the need for, and rationale behind, patient--oriented professional texts.

2. The case report genre

Taavitsainen and Pahta (2000: 60) define the genre of the case report in the following way:

> In its typical form, the case report records the course of a patient's disease from the onset of symptoms to the outcome, usually either recovery or death. The background and a commentary on the disease are also given, but their scope may vary. Often a limited review of the literature is added and the number of known cases stated.

Thematically, case reports address three types of issues: a new way of treating a disease, a new disease or a disease with an unusual manifestation (Hoffman 1999: 253). These strict requirements stem from the fact that the status of case reports has decreased significantly due to the standardisation

of medical education and studies (Hunter 1991: 93; cf. Section 3, below). Yet, they still perform a very important pedagogical function by informing medical academia about new cases (cf. Smith 2008: 1). What is more, they exemplify the specific clinical reasoning behind developing a case.

Case reports are "the briefest and simplest category of article" (Adams Smith 1984: 27) and usually consist of three parts: "a short Introduction, a more detailed Case Report body, and a brief Comment or Discussion section" (Rowley – Jolivet 2007: 185), although they are not unified compositions. This structure can be compared with the arrangement of a narrative as exemplified by Labov (1979), who divides narratives into Orientation, Complication, Evaluation and Result. Consequently, case reports start with the Introduction (Orientation), which orients readers to the patient whose case is described. This section, which may also include some demographic facts about the patient, such as sex, age and sometimes occupation or ethnic origin, briefly explains the reason for the presentation. What follows is the Case Report body (Complication). It is the most extensive part as it features not only descriptions of various diagnostic procedures, but also the very treatment. Lastly, the Comment or Discussion (Evaluation and Result), often a combination of the two, evaluates the actions performed by the physicians and discusses the outcomes and effectiveness of treatment. The section may also include implications for further assessment and treatment procedures. According to Calnan and Barabas (1973: 8), it is important that these types of information follow the same sequence in which they were given in the patient's case notes.

> The clinical case record freezes in time that episode in life called illness. It is a story in which patient and family are the main characters, with the doctor serving a dual purpose as both biographer and part of the plot. The content of this biography varies greatly, reflecting its main purposes: to recall observations, to inform others, to instruct students, to gain knowledge, to monitor performance, and to justify interventions. (Reiser 1991: 902)

As Reiser (1991) aptly describes, case reports are stories of patient's diseases that document a medical case in order to inform and teach others.

The next section will give an account of the history of medical case reports, i.e. how the compelling narratives about the incredible were transformed into concise and conventionalised accounts based on scientifically verifiable facts.

3. The case report in historical perspective

Peh and Ng (2010: 10) observe that "[r]eporting a rare or unusual case is probably the oldest form of medical communication". Accounts of oncological cases written on papyrus come from Ancient Egypt around 1600 B.C. (Dib et al. 2008: 1) and they are considered the first records of breast cancer. The practice of recording cases of diseases also reaches back to Hippocrates's (ca. 460 BC – ca. 370 BC) medical writings (Hunter 1991: 93; cf. Nowell-Smith 1995: 3). Hippocratic case reports were highly focused on the subject of study and the author revealed no emotional involvement. On the other hand, Galenic (AD 129 – 200) case reports were characterised by verbosity and a greater focus on the patient's point of view. Another stage in the development of the genre were the so-called *consillia*. These were texts in which doctors established diagnoses for diseases in particular cases and decided on treatment (Agrimi – Crisciani 1994: 19). Such texts began to be collected, forming repositories of cases which functioned as a source of medical knowledge. They also laid the foundations for contemporary forms of case-recording (Alderotti 1937 [1997]). The form and content of case reports from the Middle Ages were heavily influenced by the philosophical movement of scholasticism. In medical texts, scholasticism was marked by direct references to authors- to ensure the quality of information- as well as by prescriptive phrases (Taavitsainen – Pahta 1998). The aim of these means of expression was to "emphasise the reliability and correctness of the information and the necessity of having confidence in knowledge that was handed down as axioms" (Taavitsainen et al. 2002: 258). According to Gotti and Salager-Meyer (2006: 9), it was not until the early fifteenth century that medicine rejected the unquestionable status of the ancestors' teachings as the ultimate authority (cf. French 2003: 9). "In a well-known dichotomy, science that relies on authorities is contrasted to empirical investigation and rationalistic views" (Taavitsainen et al. 2002: 253). With these words, Taavitsainen et al. (2002: 253, 256) point to the growing importance of observation in the second half of the sixteenth century. The seventeenth and eighteenth centuries saw more preoccupation with patients' accounts in case reports. What was also characteristic of that period was the propensity of the authors to write about curious medical phenomena to pique readers' interest. However, the discourse about diseases changed with the growing importance of pathological anatomy at the turn of the nineteenth century. This was coupled with the growing role of observation and the development of technology which offered more and more accurate images of the human

body and recordings of its functions (cf. Hurwitz 2006). New diagnostic devices made the body "transparent" and allowed accurate assessment while medical sciences directed where the medical gaze should be focused (Foucault 1973). What is more, developing medical knowledge and modern equipment determined what counted as reliable data, which diminished the role of patients' accounts while the very patients came to be treated as "quantifiable material" (Gunnarsson 2009: 61). Yet, with the development of medical practice the status of case reports decreased significantly. Firstly, the introduction of modern diagnostic equipment and procedures rendered case reports less credible due to the subjectivity of the material presented there. Essentially, they are physicians' accounts based on their observation and interpretation of signs of a disease, where the "author is much more that of the practitioner than that of a knowledge builder or holder" (Salager-Meyer 2001: 77). Secondly, the growing importance of the genre of the research article in medicine, which is often based on larger populations and statistical analyses, devalued the case report as a valid source of information (Atkinson 1992). However, despite the "fall from favour" (Vandenbroucke 2001: 333; cf. Fye 1987) that this genre has witnessed, functions of case reports such as increasing the knowledge of the medical community about rare cases and serving pedagogical purposes in medical training cannot be questioned (Vandenbroucke 2001; cf. Hunter 1991: 93; Taavitsainen – Pahta 2000: 61; Salager-Meyer 2001). Case reports are regularly published in major general medical journals such as *The Lancet*, *The Journal of American Medical Association*, *The New England Journal of Medicine* and *The British Medical Journal*, though their structures may differ. Separate online journals that exclusively publish case reports such as *Ground Rounds*, *Case Reports in Medicine*, *Journal of Medical Case Reports*, *BMJ Case reports* or discipline specific *Radiology Case Reports*, *Journal of Radiology Case Reports* and *Journal of Surgical Case Reports* also exist. One of the most recent developments of the genre is the so-called *interactive* case report, which used to be published by the *British Medical Journal*[1]. This form appeared as a series of case reports devoted to one particular topic, published in subsequent issues, starting with *case presentation*, through *case progress* to *case outcome*. The first part is similar to a regular case report presenting a given case, additionally including a call for readers' responses/ comments and/or questions to be answered. The progression of the

1 The project was eventually discontinued by the *British Medical Journal* due to the fact that in the era of Web 2.0, sending comments to the editor of the journal became obsolete and it was very time-consuming. However, it cannot be denied that it proved to be a valuable venture.

treatment, as well as possible readers' responses, is the topic of the second part. The third one presents the outcomes of the treatment and discusses the prognosis and implications for further investigations. Apart from the inclusion of the readers' responses and comments supplied in the course of treatment, interactive case reports contain the patient's account, which appears in the third part. Therefore, this type of case report is a series of smaller narratives constructed by doctors, readers and patients. It is also dynamic in that the plot develops over a series of texts. In other words, interactive case reports enable the medical community and other readers to "[s]har[e] communication issues from different perspectives, enriched by a valuable patient contribution" (Peile 2003: 1136). This is acknowledged by the *British Medical Journal*, which can be seen in the following quote:

> The fact that real patients take part is, we feel, one of the strengths of interactive case reports. We encourage questions that are patient centred rather than simply clinical, asking what the doctor should say to the patient and sometimes prompting discussion on ethics issues. Taking part and helping others to learn from personal experience takes generosity and courage on the part of patients and, to some extent, their doctors.

The editors emphasise the innovative nature of the format, which, at the same time, is challenging for both doctors and patients, as it presents new perspectives in medical practice (Siotia et al. 2005: 1068). Helán (2012) points to another variety of journals publishing case reports (not interactive) including the patient's perspective. Journals such as *Journal of Medical Case Reports* and *Cases Journals* feature occasional examples of case reports with the patient's narrative, either as a separate section (*Patient's perspective* section) or as part of the *Case Presentation* section, in which the patient's words are embedded. The editor of *Cases Journal* openly states that it is a journal that "wants to accept not reject and to include patients as authors as much as possible" and where "case reports can eventually be submitted by anybody-patients, doctors, nurses, relatives, anybody" (Smith 2008: 1).

4. *Patient-centredness* and *patient advocacy*

The innovative devices of the nineteenth century, such us the ophthalmoscope, which visualised the human body and bodily functions, immediately caused concern over the diminishing patient's role as a source

of information. The subsequent introduction of equipment that was able to test smaller and smaller parts of the body with greater and greater precision widened the gap, between a patient and his/her body on the one hand, and between a patient and a physician on the other. Eventually formulated was the *biomedical model of medicine*, which views illness as a direct consequence of the diseased body and patients as mere recipients of treatment (cf. Wade – Halligan 2004: 1398). It follows that subjective perception is treated as irrelevant and may even yield false results (cf. Yardley 1997: 4). The model is believed to be reductionist because it limits the understanding of disease to only its biological manifestations, thereby excluding potentially vital social and psychological aspects. Accordingly, in Western diagnostic procedures only the biological aspects of disease are taken into consideration (Monroe et al. 1992: 48). Yet, as Armstrong observes (1984: 739), such a one-dimensional perception of the patient changed in the 1950s. Apart from the bodily sphere where diseases manifest themselves, the social sphere and its influence upon the patient's health also came to be acknowledged. The author of this "boldest attempt" (Armstrong 2002: 66) was Balint (1956) who maintained that localising bodily manifestations was not enough to diagnose a patient. He claimed that what was missing was the elicitation of information about symptoms which then had to be placed against the background of the patient's experience (Balint 1956). Consequently, observation began to be accompanied by patients' interviews which were to "illuminate the dark spaces of the mind and social relationships" (Armstrong 1984: 739). While diagnosing, physicians examined patients' bodies to discern any signs of a disease and listened to the patients' accounts of symptoms. This way, although the Cartesian dualism of mind and body was not altogether eliminated, the mind component was granted significance in the assessment of the patient's condition. The separation of signs and symptoms as part of the *biomedical model* was also seen in a new light. While a sign was still associated with a lesion, a symptom received new meaning as it was linked to the patient's identity. "The patient was beginning to have a voice- and an existence- independent of pathological lesion" (Armstrong 2002: 65). Such a change in perception paved the way not only for the acknowledgement of the role of the patient's account but also for a subsequent improvement in the quality of doctor-patient communication (cf. Armstrong 2002: 67-70). What is more, it led to further formulations which, although in various forms, shared the underlying criticism of the *biomedical model* and advocated openness to the patient's experience. These various formulations can be subsumed under the umbrella term *patient-centredness*. For example, the *biopsychological model* (Engel 1977) is based upon the premise that the diagnosis of a disease is

incomplete without considering the combination of psychological and social aspects of the patient's life (Pereira – Smith 2006: 455; cf. Hunter 1991: 21; Yardley 1997: 5). Such a holistic approach was in direct opposition to the reductionist *biomedical model*, which took only biological facts as pertinent in the treatment of a disease (cf. Pellegrino 2001: 83; cf. Engel 1988). What this model is about can be explained with the help of Mattingly's (1998b) description of the character of the therapist's job, i.e. learning the effect of one's ailment on his/her daily life (1998b: 74).

Yet another concept that is of interest here is *patient advocacy*, which was introduced to emphasise a more empowered role for the patient. Although the notion concerns certain aspects of health education going back to the early 1900s (Norris et al. 2008: xvii), the term *advocacy* has appeared in nursing literature only in the last two decades (Hewitt 2002; Mallik 1997). The concept has yet to develop as a fully-fledged area of research, yet it is possible to point to its main aims: "patient-centred care, safer medical systems and greater patient involvement in healthcare delivery and design" (Gilkey et al. 2008: 11). It can be referred to as "the navigator, both in its aim to help and guide patients to make well-informed decisions about their health for the best outcomes, and its quest to create more effective systems and policies" (Norris et al. 2008: xv). Whereas *patient-centredness* seems more holistic and focuses primarily on patients' "wellbeing" in the social and personal dimension, *patient advocacy* "very broadly (…) include[s] interventions targeting individual empowerment" (Gilkey et al. 2008: 13). Again with reference to Mattingly's (1998b) account, it is "not only what is wrong and how to fix it but also how to engage the patient in that fixing process" (1998b: 74).

5. Mishler's *voices* in medical discourse

The issue of doctor-patient communication has become a subject of study for linguists who have offered their help in establishing rapport between the parties (e.g. Heritage – Maynard 2007). One of the classical approaches to this issue is Mishler's (1984) conception of two voices in doctor-patient communication. Following Habermas's (1984: 1) theory of Communicative Action, Mishler (1984) identified two voices in the discourse of doctor--patient interviews – the *voice of the lifeworld* and the *voice of medicine*. While the former refers to the patient's account of the experience of illness, the latter is the doctor's perspective. In such an approach, physicians are regarded as "applied bioscientists", "collectors and analysers of technical information

elicited from patients", while patients are "passive object[s] responding to the stimuli of a physician's queries" (Mishler 1984: 10). In his study of doctor-patient communication, Mishler (1984) pointed to the dominant position of the *voice of medicine.* In Mishler's own words, the *voice of medicine* can be compared to "the technical-scientific standpoint of the biomedical model" which interrupts the *voice of the lifeworld*, "the concerns of everyday life" (Mishler 1984: 6). He showed that these two voices are not of the same status, in that the former dominates and disregards the latter, which testifies to the multi-faceted nature of the patient's experience. However, in their re-examination of Mishler's (1984) conception, Barry et al. (2001), proposed a more fine-grained classification of the voices on the basis of a collection of different interviews (patient-doctor, doctor-doctor, consultations). It is a more detailed alternative to the previous dichotomous division. Firstly, there is Strictly Medicine when the patient and the doctor use the *voice of medicine*. Secondly, there is Mutual Lifeworld, which is a situation when the patient talks about the way he experiences the illness and the doctor acknowledges that. There are also Lifeworld Ignored, when the doctor responds with the *voice of medicine* as a response to the extended employment of the *voice of the lifeworld*, and Lifeworld Blocked, when there are "glimpses" of the Lifeworld, but there is no appropriate reaction (Barry et al. 2001: 493-499). As the authors claim, this finer differentiation was supposed to help doctors to engage more fully in patient-centred communication. In the present work, the classification of voices and lifeworlds will be applied to the analysis of written medical discourse, i.e. interactive case reports. In other words, what will be analysed will not be doctor-patient exchanges but medical specialist texts, which are also a platform for the interaction of different contributions.

For the purposes of the analysis, a modified classification will be put forward, namely Strictly Medicine, Lifeworld Transferred, Partial Lifeworld, and Lifeworld, which will be discussed in Subsection 7.3, below. The fact that the classification is patient-oriented stems from the very character of the analysed material, which dictates the categories to be distinguished.

6. Features of written medical discourse

A substantial number of studies of spoken language have been undertaken, possibly with the assumption that written communication excludes patients, and, therefore, is of a different nature. It therefore seems important to establish whether written medical communication may also be *patient-centred* in its

own sense since certain patterns of linguistic strategies are evident in written medical discourse as well. So far, researchers have devoted their attention to the impersonal character of medical discourse, pointing for instance to the passive voice, whose notorious use allows for such bizarre situations as when there is no reference either to patients or to the very physicians and the only active participant in a description is "the chest tube bubbling" (Kenny – Beagan 2004: 1074). Another depersonalising device is used when the results of the tests are given. These are reported either as "attributes" (Atkinson 1995: 107) of patients (e.g. *her 24h urinary free cortisol* or *her pulse*) or in other ways where the patients are not even referred to (e.g. *muscular pain* or *weakness*). Some authors of medical texts also tend to refer to patients as *cases*. In medical texts, the word *case* is used to denote an individual occurrence of a particular disease, but there are studies which document using the word to refer to patients, especially in spoken discourse (cf. Hunter 1991; Grice – Kramer-Dahl 1992: 73; Fowler 1996; Atkinson 1997). This suggests treating the patient as "the object of some disease entity" (Mead – Bower 2000: 1089) or reducing them to the disease they suffer from. It may also lead to other naming practices of this kind used among health professionals (cf. Anspach 1988). As Fowler (1996) rightly observes, the impersonality of the word *case* or other objectifying terms referring to patients does not seem to be suitable for speaking or writing about such subjects as ailing patients and their experience. From such a perspective, each patient "lose[s] his or her individuality, and (…) [is] subsumed in an aggregate of people", for instance in "the pseudo-locative phrase 'in the majority of cases'" (Fowler 1996: 128-129). Even in one of the guides to medical writing it is stated explicitly that "a case is a particular instance [while] (…) a patient is a person" (Matthews – Matthews 2008: 135) and that these two cannot be used interchangeably. Finally, the last feature of medical discourse that is supposed to reduce the emotional load is that of acronyms. Here, the whole meaning that the name of a disease encodes is reduced to a set of letters which may seem neutral in value to patients and physicians, for example *TB*, *MS* or *HIV* (Kirmayer 1988: 61).

As medical texts are written by already established members of the profession, they may be treated by young medics as examples to follow. The texts not only acquaint novices with particular attitudes and values, but also promote discipline-specific modes of writing. Therefore, it seems of interest to study the discursive construction of the patient persona. Following the premises of the *patient-centred approach* (cf. Section 4, above), it may be assumed that these texts should also acknowledge the patient's role in treatment and give expression to their experience of being ill. The linguistic

reflections of these aspects have therefore been sought for in the texts of interest. As will be demonstrated, a patient's experience of their illness can be made visible in interactive case reports in a twofold manner. On the one hand, the patient's own 1st person account which features lay perception and vocabulary may be included. On the other, the doctor's text may refer to the patient's experience and ensure the textual presence of the treated.

7. Analysis

The following analysis consists of two parts. Firstly, the issue of how interactive case reports adopt the patient's perspective will be presented, demonstrating their unique character and suitability as a basis for a new model of the genre. Secondly, different voices found in the texts will be identified with the help of Barry et al.'s (2001) re-examination of Mishler's (1984) *voice of the lifeworld* and *voice of medicine*. This, in turn, is meant to prove the multi-layered narrative character of the reports at hand. The analysis will be preceded by a description of the data and followed by a discussion. Finally, a proposal for a new model will be put forward.

7.1 Data and methods

The material for this analysis comprises eight interactive case reports (with a total of 11,625 words, excluding tables, graphs, photograph captions and some other information not contained in the text) taken from the *British Medical Journal,* which is the only journal known to the author to have published this variety of case reports. These are also the only interactive case reports available from the BMJ archives. The reports were published in 2003, 2004 and 2006, and are thematically varied and devoted to a variety of medical fields. Each of the articles is a series of reports including Case Presentation, Case Progression and Case Outcome components (cf. Section 3 above for a detailed description of this type of case reports).

In the first stage of the analysis, each article was perused in order to find any words that referred to the patients. Next, the examples containing references to the patients were isolated by means of *WordSmith 5* and examined qualitatively. The results show that what is characteristic of this variety is that it contains patients' accounts in the 1st person. Apart from that, in the texts authored by the doctors, the patients' experience of illness is acknowledged and they have a textual presence.

7.2 The patient-centred character of medical case reports

7.2.1 1st person accounts and exact words

Regular case reports feature primarily the doctor's perspective and the references to the patient are made mainly in the 3rd person. The result is that the patient's voice is filtered by the doctor-writer, which is different from the patients speaking about themselves without any intermediaries[2]. Interactive case reports, on the other hand, introduce the patient's perspective in the form of 1st person narration, which is termed by Hawkins (1993) as *pathography*. This seems to be in accordance with the *patient advocacy* concept, which emphasises the patient's empowerment. As the analysis shows, at the level of the text, this empowering of the patient is realised through giving the floor to the patient, who voices his/her concerns and perceptions. The unique character of such an element is exemplified by the lay vocabulary that patients use to describe their experience of illness.

(1) Elisabeth first became unwell during the evening of her 2nd birthday. Her parents noticed that she was "*grizzly and off her food*." **(**I3, 2003)

(2) "*Once you turn yellow*," he thought, "*it's cancer, and once you're opened up, the cancer takes over your whole body.*" **(**I1, 2004)

(3) I never really thought I was ill, but *the palms of my hands and the soles of my feet were driving me round the twist. I could have used a wire brush on them. It was so deep down I was making myself bleed, but I was scared.* (…) (I1, 2004)

(4) Even though the medication didn't work in the end, I don't regret doing the trial. *It was helpful that someone took an interest in how I was feeling.* (I2, 2004)

As can be seen in the examples above, the descriptions offered by the patients refer to both mental (1) and physical (2-3) experiences. Additionally, in (4), the patient refers directly to the way she was approached by doctors. The inclusion of the patient's perspective seems a complimentary element that introduces how things are experienced and understood by the other party. This way, "the patient emerge[s] very differently when recounted as an agent in a personal story" (Mattingly 1998a: 274).

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2 Cf. Coker (2003) on how the patient is constructed in Egyptian medical records and the different voices employed therein.

7.2.2 Other patient-centred elements

Apart from the novel element presented above, interactive case reports include the already known elements from regular case reports, i.e.: acknowledgement of the patient's experience of illness (5-6) and their textual visibility (7):

(5) Ruth *experienced* adverse effects from azathioprine and risks more while she continues taking steroids. *The aims, risks, and benefits of treatment need to be discussed with her, because her views will ultimately determine whether she takes prescribed drugs.* (I2, 2004)

(6) Vitamin B-6 was also ineffective in *alleviating our patient's three other most important symptoms of dizziness, daily activities, and general wellbeing. We believe an n of 1 trial is a useful means of helping patients decide on which treatment to take in situations where evidence is poor or equivocal*. (I2, 2004)

(7) What of *Mrs Reynolds*, the subject of the case report? *Her* case is not entirely typical since *her* sickness started later in pregnancy than is usual at 8 weeks and because *she* had not had this problem in previous pregnancies. *Her* history suggests that social or psychological factors were absent. *She* did not benefit from prochlorperazine, but it is important that antiemetics are taken regularly rather than on an as required basis and this should be clarified with *her*. It is also important to consider whether *she* was vomiting up the drugs. In this situation suppositories can be helpful. *Her* condition seems to have progressed and was affecting *her* ability to function. However, *she* had no evidence of dehydration (absence of postural hypotension) and no ketonuria, features present when vomiting has progressed to hyperemesis. (I4, 2004)

In examples (5-6) reference is made to a patient's experience of illness through the use of specific verbs (*experience* in (5) and *alleviate* in (6)) as well as a noun referring to a particular ailment- *dizziness* in (6). What is also addressed in (5) is the process of decision making with direct reference to a patient's involvement (her views) and well-being (risks and benefits). (7) is a longer excerpt from a text which evidences the patient's visibility, achieved through the use of both personal and possessive pronouns. Additionally, similarly to regular case reports, the author's voice can be observed here as well (cf. *we* in (6) above). These, together with direct references to patients, contribute to a more patient-oriented text, and not one in which *diseases are treated* and *procedures are carried out*.

7.3 From *Strictly Medicine* to *Lifeworld* – the many worlds in interactive case reports

In this section, the application of a modified classification of different voices in medical case reports will be presented, namely *Strictly Medicine*, *Lifeworld Transferred*, *Partial Lifeworld*, and *Lifeworld*. The reason that the classification is patient-oriented is because the material analysed, i.e. interactive case reports are, as has already been demonstrated, more patient-centred, which dictates the categories to be distinguished.

The following analysis will show how the above-presented voices manifest themselves at the level of the text.

7.3.1 *Lifeworld*

Examples (3-4) above both reveal the *Lifeworld*, as these are patients' 1st person narrations, and not indirect accounts given by doctors. It is the patient's voice, and thus the individual experience of illness, which adds another perspective in this narrative.

7.3.2 *Partial Lifeworld*

Partial Lifeworld refers to those fragments, which, though written from the 3rd person perspective, include selected phrases or quotes from the patient- cf. examples (1-2) above. As Poirier et al. (1992) observe, in western medical case reports it is ultimately the doctor who chooses what to include; nevertheless, the patient's perspective is introduced. These quotes are unique for this genre in the sense that they do not belong to professional medical discourse and if included in regular case reports, they would be rendered in 3rd person, more objective discourse. What is more, they are absent in standard case reports, which do not have such a section at all.

7.3.3 *Lifeworld Transferred*

Apart from the novel element of the *patient's perspective* section presented above, a substantial part of interactive case reports consists of a doctor's account, which is part and parcel of regular case reports. In this form of discourse, the patient's perspective is filtered through the doctor's lens, and therefore this voice is termed as *Lifeworld Transferred*. These examples are different from the *Lifeworld* and the *Partial Lifeworld* in that here it is not 1st person narration or chosen quotes from the patient, but the patient's individual experience of illness (cf. 5 above), as well as their perception,

understanding of and attitude towards their condition (cf. 8 below) transformed into medical meta-language.

(8) Ruth was reassured but advised that it would be sensible to increase her calcium intake to 1500 mg a day. *She found this difficult to achieve* and so was started on an oral calcium and vitamin D supplement. She was also advised to take as much weight bearing exercise as possible. (I6, 2003)

(9) Five weeks ago (…) we presented the case of Ms Reynolds, a 25 year old woman who presented to her general practitioner when *eight weeks pregnant complaining of nausea and vomiting with light headedness*. (I2, 2004)

(10) A 19 year old university student was admitted to our hospital *with history of high grade swinging temperature up to 39°C. She had had a sore throat, which lasted for a few days, accompanied by fever, rigors, and myalgia*. (I7, 2006)

In standard case reports, examples of *Lifeworld Transferred* can also be found, usually at the beginning of the report, which informs about the patient who comes or is brought to the doctor with a specific ailment. In examples (9) and (10), some of the complaints that the patient presented are briefly recounted. It might well have been the case that the patient conveyed this information in a more elaborate and subjective manner, which was then translated into 'objective' medical discourse. Such an approach enumerates diseases as entities thus reducing the patient's experience of illness to a single label which stands for a group of particular symptoms. Example (8) explicitly refers to the patient's attitude towards the case at hand.

7.3.4 *Strictly Medicine*

(11) Results from the blood tests taken on admission (including creatine kinase, creatine kinase MB isoen-zyme, and troponin T as serum markers of acute myo- cardial ischaemia) were within the normal range. Liver and renal function tests also gave normal results. He had high concentrations of C reactive protein (171 mg/l, normal <10 mg/l), fibrinogen (6.24 g/l, normal <3.9 g/l), and D dimer (5.31 mg/l, normal <0.5 mg/l). His full blood count was normal except for a raised white blood cell count (15.1×109/l, normal $<10 \times 109$/l). (I5, 2003)

(12) *Chest radiography showed* right sided posterobasal shadowing, which was reported as being indicative of pulmonary embolism or the start of pneumonia. "Non-significant enlargement of the heart and of the aortic arch" was also noted. There were no signs of cardiac decompensation (figure). (I5, 2003)

(13) Vitamin B-6 in the form of pyridoxal-5-phosphate acts as an important coenzyme in the transamination of amino acids, with deficiency leading to polyneuropathy and convulsions. Vitamin B-6 has an important role in protein metabolism and transporting many amino acids across cell membranes. The mode of action in alleviating nausea in pregnancy is not known. No clear relation *has been found* between indicators of vitamin B-6 status and nausea and vomiting. (I5, 2003)

In stark contrast to the previous categories, subsumed under the category *Strictly Medicine*, are examples in which diagnostic or treatment procedures are described without reference to the patients. Here rather than to patients themselves, the readers' attention is drawn to so-called "medical techniques and therapeutics" (Ashcroft 2000: 288). Mattingly (1998a: 274) refers to this mode of writing as "chart talk" which emphasise[s] diagnosis and pathology". Linguistically, it is achieved through impersonal constructions (cf. 11 above), the passive voice (cf. 13 above), or so-called "abstract rhethors" (Halloran 1984: 74), where medical equipment or procedures are presented as showing or revealing particular results (cf. 12 above). This linguistic technique is referred to by Anspach (1988) as "technology as the agent". In regular case reports, such examples appear most frequently in the examination section, which gives an account of the patient's current condition, i.e. what the doctor observes as well as the results of medical tests (Murawska, forthcoming). Additionally, in (13), the focus falls on various medical aspects, which are the reference points of the sentences.

8. Towards a new model of the medical case report

The new model of the medical case report proposed here is patient-centred, i.e. one that emphasises an individual's experience of illness. The patient's perspective would ideally be addressed in a two-fold manner. Firstly, it would be a model of a narrated story of the case from the doctor's perspective but with the patient's voice and would be co-constructed by both parties. This way it would go beyond the textual acknowledgement of the patient's

experience and invite the patient to co-produce the account (Smith 2006; cf. Earp et al. 2008). At the level of the text, this would mean inclusion of the patient's perspective in a special section, which would follow the example of the interactive variety. At this point the narrative character of the genre would also be explored. Firstly, a case report tells a complete story of the patient's disease from the appearance of symptoms to recovery or death. Secondly, it is always a story of a particular patient(s), which offers the potential to mediate a unique experience of illness if it is given the textual floor. At the microstructural level, on the other hand, the focus would fall on how the author refers to the patient, i.e. his/her presentation as subject/object of medical procedures. Therefore, these guidelines will refer back to the thematic-rhematic structure of the text in the functional perspective (e.g. Halliday 1994).

9. Rationale behind patient-centred texts

It has been demonstrated above that certain linguistic choices allow authors to focus on the patient. One may ask, however, why should medical professionals be patient-centred in their written discourse? Two reasons may be adduced here. On the one hand, although written communication, especially among medical professionals, is not conceived of as being of direct relevance to the patient, it does matter how patients are written about. In comparison with texts of other sciences, the case reports examined here, as with any other medical texts written for health professionals, are texts about human beings and this is the way in which patients should be portrayed. With regard to case reports, this postulate appears even more valid as the genre is concerned with particular patients suffering from particular diseases, as opposed to, for instance, articles about innovative techniques of knee surgery. Although the texts carry a message communicated only to fellow medical researchers, it should be a message concerning a patient as an experiencing individual, whose suffering is to be alleviated, not a case of a disease treated in a particular way. Therefore, if these texts objectify patients in any way, they require linguistic attention. The production and reception of written specialised discourse is also one of medical practices. The texts are written by the professionals who have already established their credentials as doctors and their publications reflect a certain image of how patients are positioned therein. Therefore, these texts may also be read by novices and may be treated as examples of agreed medical style. Consequently, in their socialisation into medical culture, students ought to be made aware

of the image of patients that emerges from professional medical literature. On the other hand, with respect to the previously mentioned *interactive* case reports, following Mattingly (1998b: 1), the inclusion of a patient's experience of illness means "attention to human suffering" as "[t]he need to narrate the strange experience of illness is part of the very human need to be understood by others". In addition to this, another textual reflection of *patient-centredness* can be adduced, i.e. the adoption of a *patient-centred discourse*, which would fit well with the overall dynamic and polyphonic character of this genre. Also, given the uniqueness of case reports as medical texts, rather than including patients' comments, such reports could possibly be co-authored with patient and/or families and published in domains other than technical medical journals in order to inform the public about new doctor-patient partnerships and knowledge production practices.

10. Conclusion

The present paper has addressed the issue of constructing patients' presence in medical case reports. First, an attempt has been made to determine whether the concept of *patient-centredness*, which has been referred to so far in numerous studies of spoken medical discourse, can be considered with relation to written medical discourse. The materials that have been chosen for the study of the aforementioned issue are interactive case reports, a variety of the genre, which, by definition, convey an account of a particular patient suffering from a particular disease and thus not, for instance, a description of innovative surgical methods in which no direct references to patients may be present. What is more, the studied type of case report has been proven to be more patient-centred than the regular one. Firstly, it includes a *patient's perspective* section in which the patient is given the floor. Secondly, features of the the doctor's discourse have also been shown to adopt the patient's perspective, i.e. it often acknowledges the patient's experience of their illness and marks their textual presence. Furthermore, the reports under scrutiny have been investigated for the variety of voices appearing in them on the basis of Barry et al.'s (2001) re-examination of Mishler's (1984) voices. It has been demonstrated that in the reports the following voices coexist: *Strictly Medicine*, *Lifeworld Transferred*, *Partial Lifeworld*, and *Lifeworld*. Finally, a model of a new patient-centred variety of case reports has been proposed which, drawing on the interactive variety, would emphasise the patient's experience of illness and, therefore, present the process of diagnosis and treatment in a holistic way. The proposed model could be viewed as an alternative

for both medical authors and journal editors. Moreover, its adoption may be beneficial both to doctors in the development of compassion towards patients, and to patients, who are able to become active participants in the process of diagnosis and treatment and are not perceived merely as diseased entities that should be managed. The paper has also discussed the possible need for such an approach to medical texts. It is believed that texts about new methods of treatment should still refer to patients as those who undergo this treatment, as opposed to body-parts which are treated. Moreover, inviting patients into specialist text emphasises the importance of the patients' narratives of their individual experiences of illness. Consequently, both medical students and doctors should be sensitised to the potential that language offers considerable insight, not only in communication *with* patients but also *about* patients.

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Inverted reporting verbs in the sentence-initial position in English: Focus on phrasal verbs*

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ABSTRACT

This paper examines several properties of quotative inversion in English, restricting reporting verbs to phrasal verbs. Contrary to the observations of a number of previous studies, data collected from natural occurrences show that subject-verb inversion in reporting clauses applies to phrasal verbs. In this paper, two points of investigation are identified by reviewing the literature on quotative inversion in the initial position: the validity of the relationships (i) between quotative inversion in the initial position and *Time* magazine writing style, or 'Timestyle' (Ikeda 1992: 270, 390), and (ii) between quotative inversion and the discourse status (newness) and structural complexity (heaviness) of postverbal noun phrases. The relationship between quotative inversion in the initial position and *Time* writing style is then verified using the *Time* Magazine Corpus. The verb-subject order in reporting clauses that use phrasal verbs with *in*, *out*, and *up* is also shown to be compatible with the principles of information flow and end-weight. Finally, this paper suggests three possible functions of quotative inversion in the initial position: "discourse function", "summing-up function", and "dialogic function".

1. Introduction

This paper deals with subject-verb inversion in reporting clauses in English. In the present article, reporting verbs specifically indicate phrasal verbs, not

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simple verbs. A large number of studies have already been conducted for simple verbs such as *say*, *ask*, *explain*, and *write* (Hermon 1979, Green 1980, Biber et al. 1999, Sonoda 2000). Conversely, the previous study of phrasal verbs has been superficial. This paper limits the discussion to phrasal verbs.

The purpose of this paper is threefold. First, the work shows that subject--verb inversion in reporting clauses also applies to phrasal verbs, although some researchers do not allow for this. Second, it clarifies in which sentence position subject-verb inversion in reporting clauses occurs in *Time* magazine, as well as the relationship between *Time* magazine and verb-subject order in the sentence-initial position. Generally, reporting clauses have been shown to occur in the initial, medial, and final positions of a sentence. However, *Time* magazine has a strong preference for inversion in the initial position. The validity of this observation is tested in a later section. Third, the paper examines the properties of postverbal noun phrases in reporting clauses in terms of both discourse status and structural complexity.

This article is organized as follows. In Section 2, I critically review the previous literature. In Section 3, I focus on quotative inversion in the initial position and pose the problems to be discussed in this paper. In Section 4, I present the methodology adopted in this study, offer the results of the investigation, and discuss the data provided. First, I demonstrate the relationship between *Time* magazine and verb-subject order in the sentence-initial position using quantitative analysis. Second, I examine the properties of postverbal subjects independently of the position of the reporting clauses. Then, I suggest three possible functions of quotative inversion in the initial position on the basis of the observations. Lastly there, I comment on the remaining issues and suggest a future direction for the study of the inversion of phrasal verbs as reporting verbs. In Section 5, I deliver several concluding remarks.

2. Phrasal verbs in inverted quotatives

As groundwork for the rest of the paper, I will establish some terminology to make the explanations as clear as possible. Consider the following examples:

(1) Initial: Mac said, "The milkman is late again".

(2) Medial: 'Yes', said Harry, 'but I haven't got a licence'. (Rowling 2005: 517)

(3) Final: 'It's a thought', said Hermione slowly. (Rowling 2005: 438)

The reporting clauses in each sentence are *Mac said*, *said Harry*, and *said Hermione slowly*. The verb *said* in these examples is called a reporting verb or a quoting verb. Reporting clauses are also called quotatives, quotative clauses, or *inquit*, and subject-verb inversion in reporting clauses, as in (2) and (3), is called quotative inversion or an inverted quotative. The quoted words themselves are referred to as reported clauses, quotes, or quotations. As shown in the above examples, reporting clauses can be used in different positions relative to the quoted material.

We may now proceed to the review of previous studies. First, let us consider the following example[1]:

(4) ?'No, you cannot', **went on Mrs Robinson**.

(5) a. "The reason is this", **John went on**.
b. *"The reason is this", **went John on**.
c. "The reason is this", **went on John**.

(6) a. "She's a sweet, sweet kid, your friend", **Angela went on**.
b. ?**went on Angela**

All of these examples take the phrasal verb *went on* as the quoting verb. Kahn (1985: 301) argues that, as illustrated in (4), inversion should be avoided when using verbs of greater complexity than the simple *said*, *continued*, *laughed*, *replied*, *wrote*, and the like. Suzuki – Yasui (1994: 368) make this point by using the contrast in (5). These authors illustrate the unacceptability of partial or full inversion, as shown in (5b-c). In a similar fashion, exemplifying (6a-b), Sams (2009: 162) expresses her view: "Two-word quoting verbs can … affect the possibility of quotative inversion". She also states that "The use of the quoting verb *went on* in an inverted quotative sounds awkward and does not appear" in her data.

Next, let us note the different opinions shown in the following examples:

(7) a. "Where do you want the concrete?" **called up Fanny** to Max.
b. "Don't drop the bricks!" **shouted out Trudy** to Carl.

(8) "You know", **chipped in Carla**, "she could be Korean".

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1 The emphases added to the example sentences and tables throughout the present paper for the sake of convenience are mine.

Collins – Branigan (1997: 4-5) discuss quotative inversion with those phrasal verbs that are used in verb-subject order, as in (7a-b). These authors do not seem concerned with whether phrasal verbs can be used in this way. Another example (8) is taken from Sams (2009: 162). As we have already seen in (6), she does not accept the use of the phrasal verb *went on* in an inverted quotative. However, she says that there are several "two-word quoting verbs that do appear inverted" in her data; *chipped in*, *chimed in*, and *put in* all appear as inverted, one example of which is shown in (8). From these data, she suggests that this phenomenon may be a function of *in*, but as Collins – Branigan's examples (7a-b) show, different particles such as *up* and *out* are also used in this context.

It may safely be assumed from these facts that phrasal verbs are used in inversion. This phenomenon is also evident in my own data, obtained from newspapers, online newspaper websites, magazines, and fiction:

(9) **Sums up IIB's Ariff**: "The idea is not to view tourism products in isolation, but to see Iskandar as an integrated tourism site to encourage longer stays and repeat visits". (*International Herald Tribune*, June 19, 2009)

(10) "With due respect", **shot back Hayward**, "We drill hundreds of wells around the world". (http://news.therecord.com/article/730809, June 17, 2010)

(11) "Most Americans like their work, finding it a source of their identity and meaning in life", **points out Laura Carstensen**, a psychology professor at Stanford University and founding director of the Stanford Center on Longevity. (*U. S. News & World Report*, February, 2010)

(12) 'I well remember myfirst interview with Dumbledore', **went on Professor Trelawney**, in throaty tones. (Rowling 2005: 508)

As is evident from these examples, there is no doubt that phrasal verbs can be inverted in contemporary English usage. From this standpoint, the account may be developed as follows. First, my data show that quotative inversion can occur in any position: initial, medial, or final. Second, the present data and those of previous studies indicate that the second words or the particles of inverted phrasal verbs are *back*, *in*, *out*, *up*, and *on*. Note that verbs using *on* were not accepted as invertible in previous studies. As discussed in the introduction, little is known about the inverted usage of phrasal verbs in reporting clauses. Hence, a complete and thorough discussion of the exact

properties of this usage is beyond the scope of this paper. Instead, I will concentrate on one phenomenon: subject-verb inversion before a quotation, as in (9).

3. Quotative inversion in the initial position

As established in the previous section, the present paper is concerned with quotative inversion occurring in the initial position. Kirchner (1972: 31) calls this usage "absolute inversion", and Schmidt (1980: 11) terms it "journalistic style inversion". I discuss this phenomenon in the following section. In subsection 3.1, we will consider the kind of register in which the inversion is used and introduce *Time* magazine as a possible register. In subsection 3.2, we will concentrate on the motivations for the inverted usage.

3.1 Quotative inversion in the initial position and Timestyle

Contrary, or at least relative, to its frequent occurrence in the medial and final positions, quotative inversion rarely occurs in the initial position (Biber et al. 1999, Sonoda 2000). If this observation is accurate, in what contexts can we find sentence-initial quotative inversion? We will consider this question in terms of register[2].

As many grammar books indicate, this type of inversion seems to be characteristic of a journalistic style: "journalistic writing" (Quirk et al. 1985: 1024), "news" (Biber et al. 1999: 922), and "written journalism" (Huddleston 2002: 1027; Carter – McCarthy 2006: 818). Kahn (1985: 301) further remarks that the inversion seems to be "associated with American news-magazines in particular", although it "is now fairly common in the journalism of Britain and other English-speaking countries as well". Hartvigson – Jakobsen (1974) and Ikeda (1992) lend support to Kahn's (1985) suggestion. Hartvigson – Jakobsen (1974: 83) report that "*Time* is a happy hunting ground" for quotative inversion in the initial position, and Ikeda (1992: 270, 390) calls the inversion in question "Timestyle, Timese, or Time style".

Time is a well-known American magazine. The term Timestyle is derived from its "association with *Time* magazine" (Quirk et al. 1985: 276), as "*Time* magazine started to adopt that style" (Lee 2010: 2508). Ikeda (1992:

2 Fujii (2006) claims that the inversion has its origins in Irish English, but we are not concerned here with origin.

270, 390) points out that an inverted reporting clause in the initial position is a characteristic mannerism of Timestyle and provides an example used in the initial issue of *Time* magazine:

(13) **Said the Christian Science Monitor:** "It is not difficult to […]". (*Time*, March 3, 1923)

(13) is an example of a simple verb inversion. The question now arises: does this pattern hold for phrasal verbs as well? This issue merits further investigation, and we will examine it in Section 4.

3.2 The motivations for quotative inversion in the initial position

It is uncertain whether the low frequency of the phenomenon is directly related to the surprisingly small number of previous studies on the topic, but only a few previous attempts have been made to investigate quotative inversion in the initial position. These studies include those of Fukuchi (1985), Sonoda (1997), and Burchfield (1998). Fukuchi (1985) discusses the relationship between reporting verbs and their preceding linguistic context. To cite one example from Fukuchi (1985):

(14) […], but M. Feldstein, chairman of the Council of Economic Advisers, publicly maintained that a tax hike was needed. **Said Feldstein, who resigned in July to return to teaching at Harvard**: "The longer the deficits are allowed to persist, the greater are the risks to our economy". (*Time*, January 7, 1985)

To account for this phenomenon (14), Fukuchi (1985) appeals to "the amount (degree) of communicative dynamism" outlined by Firbas (1966: 240). According to Firbas (1966), sentences start with the lowest amount of communicative dynamism and gradually progress to higher degrees.

Let us now consider the example (14), in which Feldstein's speech presentation continues. First, the preposed verb *said* is lower in semantic content than *maintained*, which occurs in the preceding context, because the more specific *maintained* connotes *said*. Second, the subject *Feldstein* is followed by a nondefining relative clause, which is unusually long and adds new information to the subject. Therefore, in (14), the subject is more important than the verb, so the condition of inversion is satisfied.

Sonoda (1997: 20, 23) presents two alternative motives for using an inverted reporting clause in the initial position: the first is "to give variety to these clauses and thereby not to bore the reader by a tactless repetition of the same kind of reporting clause in a series of paragraphs", and the other is "to conclude and summarize a paragraph". The latter is evidenced by showing that the phenomenon tends to appear in the final position in a paragraph.

Sonoda (1997) gathered data from 12 *Time* magazines, 12 *Reader's Digest* magazines, and 10 *Newsweek* magazines published between August 1994 and August 1996, finding 143 instances of quotative inversion in the initial position in the 34 magazines. Moreover, he examined the position of each paragraph in which the phenomenon occurred. The initial, medial, and final positions contained 2, 31, and 103 instances of inversion, respectively; 7 instances constituted single paragraphs by themselves. From the observation that quotative inversion occurs most frequently in the final position of a paragraph, he surmised that quotative inversion is used to conclude and sum up a paragraph. In (15), for example, which organises a single paragraph, ⑤ finishes the discussion and summarises the paragraph (Sonoda 1997: 22-23):

(15) ①After defying gravity for two years, Bombay's soaring real estate market is falling back to earth. ②Prices in some areas are down as much as 40% since 1994, the peak of the boom. ③The opening up of India's economy in 1991 attracted hordes of multinationals, driving some residential and commercial rents to levels higher than Tokyo's. ④Apartments of about 185 sq m in the city's nicest neighborhood were fetching $2.4 million. ⑤**Says Deepak Parekh, chairman of the Housing Development Finance Corporation (H.D.F.C.), India's largest mortgage company: "Prices have just become totally unreasonable in Bombay. They had to come down".** (*Time*, July 8, 1996)

Burchfield (1998) also shows two usages of the phenomenon in question: the journalistic convention serves as an eye-catching device and a way to achieve stylistic balance. Example (16) illustrates the latter:

(16) 'Oh', said a man to me, when the news had penetrated our circle of acquaintance, 'I hear they're actually giving you money for it'. **Said another**, 'Do you know – have you any idea – how many books are published in the course of a year?' (Burchfield 1998: 685)

In (16), one person's statement is followed by another. According to Burchfield (1998: 685), in the context of multiple sequential statements, "one *said* formula balances the other". Hence, subject-verb inversion before the direct quotation is stylistically motivated.

The *Time* Magazine Corpus, which we use in the next section, provides the URL of any article that uses the words or phrases being queried, so we can easily find the full text of each relevant article[3]. That is, we can see the preceding context and examine whether the subjects represent new or old information. Hence, we will focus on postverbal subjects in terms of discourse status and grammatical complexity in 4.2.

4. Method, results, and discussion

This section consists of three parts. In 4.1, I explain the method, object, and procedures of the investigation. I then show the results of the research: the number of occurrences and the positions of the quotative inversions. In 4.2, I analyse the data obtained from the procedures described in 4.1. In 4.3, I suggest three possible functions of quotative inversion in the initial position on the basis of the observations in 4.1 and 4.2: "discourse function", "summing-up function", and "dialogic function".

4.1 A test for Timestyle

First, let us examine the corpus employed in this study: the *Time* Magazine Corpus. This corpus was created and is managed by Mark Davies of Brigham Young University (BYU) and includes more than 100 million words of text in American English. The corpus covers the print edition of *Time* magazine from 1923, when the magazine was launched, to 2006.

The phrasal verbs under investigation were selected not only from those discussed in Section 2 but also from those found in Shimada (1985), Inoue (1990), Barnard (2002), and the data which I collected from natural sources. The particles of these phrasal verbs were limited to *back*, *in*, *out*, *up*, and *on*. The phrasal verbs selected all carry the meaning of saying. The list is as follows:

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3 During my data collection, the full texts were available for free until September 2010, but a paywall was instituted sometime after this point. For those cases in which the URLs were missing, I found and analyzed the full texts by searching the Web or utilizing the print edition.

Table 1. A list of phrasal verbs for investigation

Particles	Items for Investigation
BACK	answer back, call back, ring back, sass back, shoot back, snap back, talk back, throw back, write back, fire back
DOWN	bear down, cry down, grind down, hold down, howl down, keep down, put down, shout down, talk down
IN	break in, butt in, chime in, chip in, cut in, horn in, put in, step in
OUT	babble out, bark out, bawl out, bellow out, belt out, blab out, blare out, blurt out, bluster out, boom out, breathe out, call out, cry out, falter out, gasp out, grind out, groan out, howl out, jabber out, lisp out, peal out, point out, rap out, rasp out, read out, ring out, roar out, rumble out, scream out, shout out, sing out, snap out, sob out, speak out, spell out, stammer out, thunder out, wheeze out, whine out, yell out
UP	call up, sum up
ON	babble on, blast on, chatter on, count on, drone on, go on, rattle on, sing on, stumble on

When searching the corpus, I restricted the tenses of the verbs to the third person present singular and all persons of the past singular and plural. When the verbs' spellings differed between British and American English, I regarded both spellings as objects of investigation. Summarizing the procedure, I first typed a phrasal verb into the search box of the corpus, hit "SEARCH," and then extracted all occurrences from the corpus. Second, I singled out all cases of quotative inversion from these occurrences. It must be noted that I also included instances without quotation marks. As Biber et al. (1999: 921) point out, "quotation marks identifying the reported text are often missing." By including such cases, I covered a wide range of quotative devices such as partial quotation, whether in direct or indirect discourse. The results are shown in Table 2.

Out of the items in Table 1, my investigation found 18 phrasal verbs in quotative inversion. Occurrences of the particles *back*, *in*, *out*, *up*, and *on* were found, but occurrences of *down* were not. A total of 330 instances of quotative inversion were identified; of these inversions, the most common was *sum up*, with 155 instances, followed by *point out* with 46, *shoot back* with 41, and *chime in* with 35. The following examples illustrate these inversions:

(17) a. **Sums up a senior adviser** to the Bush campaign: "[…]". (*Time*, April 20, 1992)

b. "There's four of them right here!" shoots back **Star Jones**, as the audience – almost all female – goes nuts. (*Time*, January 22, 2000)
c. "We have nothing left", **chimes in a third**. (*Time*, March 2, 1998)
d. "[…]", **points out Robert Hormats**, vice chairman of Goldman Sachs International and a former State Department official in the Carter Administration. (*Time*, April 21, 2003)

Table 2. The numbers and the positions of quotative inversions

No.	Phrasal Verb	Occurrences	Quotative Inversion	Initial		Medial	Final
				Connective + V +NP	V +NP		
1	fire back	110	2		1		1
2	shoot back	209	41		17	6	18
3	snap back	136	7		4	1	2
4	write back	62	2		1	1	
5	break in	483	8		3		5
6	chime in	196	35		17	5	13
7	put in	2838	7	1	2	3	1
8	blurt out	135	2		1		1
9	call out	523	8		2		6
10	cry out	343	4		1	1	2
11	rap out	50	2		1		1
12	ring out	289	2	1			
13	shout out	34	1				
14	sing out	57	2		1		
15	point out	4565	46	7	1	18	20
16	sum up	1423	155	1	117	22	15
17	go on	8089	5		1	3	1
18	rattle on	27	1				1
Total	18	19651	330	10	170	60	90

Table 2 also presents the positional distribution of the quotative inversions. Quotative inversion in the initial position is divided into two groups: a verb--subject type and a connective-verb-subject type. Some examples of the latter are shown below:

(18) a. But, **put in Paul**: "[…]". (*Time*, June 30, 1960)
b. All in all, proudly **sums up the Rev. Nolan B. Harmon**, retired Bishop of Western North Carolina and one of the supervising editors, "[…]". (*Time*, January 22, 1966)

These instances seem rather different from usual quotative inversions in the initial position, but we may regard these structures as what Biber et al. (1999) call "left expansions." According to Biber et al. (1999: 924), "initial reporting clauses often have left expansions, which can also include time adverbials, place adverbials, a specification of the addressee, and *ing*-clauses." Therefore, I classified these instances into the same category as the usual subject-verb inversions before a quotation.

Having considered this special case, we may now turn to the main topic of the analysis. It should be noted from Table 2 that quotative inversion appears more often in the initial position than in the medial and final positions. These results are clearly different from those of Biber et al. (1999) and Sonoda (2000). Biber et al. (1999: 925) point out that "the overwhelming majority of reporting clauses in initial position take subject-verb order," and Sonoda (2000) also found no quotative inversion in the initial position while observing 24 instances and 107 instances of verb-subject order in the sentence-medial and sentence-final positions, respectively. What caused the differences between these results and those of the present study? I believe that the results were influenced by the register: *Time* magazine. The results show that, in terms of quantity, quotative inversion in the initial position is a characteristic expression of *Time* magazine, that is, Timestyle.

4.2 A test for postverbal NPs

In this subsection, I examine the properties of postverbal noun phrases (NPs) in reporting clauses in terms of both "discourse status (newness)" and "structural complexity (heaviness)", as proposed in Arnold – Wasow (2000).

4.2.1 Newness

Newness concerns whether postverbal subjects are explicitly mentioned in the preceding context, or whether their information is new or previously given. The concept is also related to a general pragmatic principle, the "old information first, new information last" principle (Arnold – Wasow (2000: 30) call it "the given before new principle"). We examine whether this principle holds for our data.

In Arnold – Wasow (2000), "newness" is used to refer to the distinctions among given, inferable, and new information, which are based on Prince's (1992) three-way distinction:

> An NP is classified as given if its referent has been previously mentioned in the discourse. An NP whose referent has not been explicitly mentioned but could be inferred from something else that was mentioned is classified as inferable. Only NPs whose referents are truly new to the discourse are classified as new. (Arnold – Wasow 2000: 30)

Note that Prince's (1992) and Arnold – Wasow's (2000) distinctions are not always identical with those of the present paper. Therefore, we must confirm our distinctions.

An NP is classified as given information only if the same referent exists in the previous discourse. If this is not the case, the NP is classified as new. Conflict arises over the category *inferrable*[4]. The above extract from Arnold – Wasow (2000) initially seems unproblematic, but *inferrable* is ambiguous and difficult to define because inference is closely related to audience knowledge and varies among individuals. Even if an NP is new to the discourse or has not yet been mentioned, its referent can be old information to the audience. Therefore, the category *inferrable* should be more restrictive.

Although this paper's definition of *inferrable* is similar to Prince's (1992), this definition is rather restrictive, in the same way as that of Kreyer (2006). My data contain several examples in which it is difficult to judge whether an NP is given or new information. To cover such examples, I posit *inferrable* as the immediate information status for convenience. The following examples illustrate this point:

(19) a. […] the Communists yelled: "Long live Communism!" […]. Once again **rang out the provocative cry**: "Long live Communism!" (*Time*, April 6, 1925)

b. […], seven of the men drew 30 years apiece, only one got less than 20. "Don't worry, Mum, I'm still young", **shouted out one of the men who had received a 25-year sentence**, as guards hustled him away. (*Time*, April 24, 1964)

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4 Researchers disagree regarding the spellings "inferable" and "inferrable". For example, while Prince (1992) uses "inferrable," Arnold – Wasow (2000) prefer "inferable". I adopt Prince's spelling when referring to the concept in a technical sense.

In (19a), a cry is not mentioned in the previous discourse in the form of an NP. However, we can understand from the preceding discourse that the Communists yelled. The definite NP *the provocative cry* itself is new to the discourse, but we identify by inference that the Communists' yell was a provocative cry. Hence, *the provocative cry* is not always new information, and we may regard it as inferrable. In (19b), the NP *one of the men* may be new to the discourse, but *the men* have already been mentioned in the previous discourse and are given information. Hence, we may regard *one of the men* as inferrable. In the present paper, I classify elements as inferrable if they are related to an element in the preceding discourse through a sense relation such as *member of* or *part of*, as in (19b)[5].

Now, we may examine Table 3:

Table 3. The distribution of the information status of postverbal NPs

Information status / Particles	Given	Inferrable	New	Total
BACK	**41**	1	9	51
IN	14	0	**36**	50
OUT	15	6	**46**	67
UP	56	9	**89**	154
ON	**5**	0	1	6
Total	131 (=39.9%)	16 (=4.9%)	**181** (=55.2%)	328 (=100%)

Table 3 shows the distribution of the information status of postverbal NPs across particles. Two of the 330 tokens were excluded from the analysis because it was not possible to find the full text of the article and obtain the preceding context. As shown in Table 3, the majority of NPs contained new information. This result might initially seem to conform to the principle of information flow, or the "old information first, new information last" principle, but Table 3 indicates that given information accounts for nearly 40% of the NPs. Therefore, we cannot say that a great contrast exists between given information and new information, indicating that the information status of postverbal subjects is not the only factor influencing inversion.

5 Kreyer (2006: 135) uses the category *indirectly retrievable* instead of *inferrable*.

Note that when phrasal verbs with *back* and *on* are used, their subjects tend to carry given information, contrary to those of verbs using *in*, *out*, and *up*. As for *back*, we can identify the referent of the subject from the previous discourse. *Back* has the meaning of *in return* or *reply*. When phrasal verbs with the particle *back* are used, the context is, in many cases, dialogic. We have already identified the speakers or characters from the context. Therefore, the characters or the postverbal subjects are given information.

4.2.2 Heaviness

Heaviness concerns whether the inversion in reporting clauses is related to the length and complexity of NPs. The concept is also closely related to "the principle of end-weight: the tendency for long and complex elements to be placed towards the end of a clause. This eases comprehension by the receiver" (Biber et al. 1999: 898). In this paper, I measure heaviness as the difference in length between verbs and subjects, in terms of number of words, as in Arnold – Wasow (2000).

I tested the relationship between heaviness and inversion using the data in 4.1. The first relationship examined was the relative weight of phrasal verbs and postverbal subjects, testing the idea that the heavier constituent tends to come later than the lighter one. The procedure was applied as follows (cf. Kreyer 2006: 54):

1. Count the number of words that form the postverbal subject, S
2. Count the number of words that form the phrasal verb, V
3. Calculate the difference D = S – V

Consider the following examples:

(20) a. "What I said was, 'Is anybody at home?'" called out **Pooh** very loudly. (*Time*, December 26, 1960)
b. "There is no way of becoming a drama critic", fired back **Shaw** in his first letter. (*Time*, January 2, 1956)
c. "There's four of them right here!" shoots back **Star Jones**, as the audience – almost all female – goes nuts. (*Time*, January 22, 2000)

As shown in (20a-c), in which the Ss are boldfaced, I did not count constituents such as adverbs and adverbial clauses that did not modify NPs. My interest concerned differences in relative weight between Ss and Vs. The Ss in both

(20a) and (20b) have a heaviness measure of 1, while the one in (20c) has a value of 2. The phrasal verbs are composed of two words, so the V value in each example is 2. Hence, the Ds in (20a-c) are -1, -1, and 0, respectively.

The results of the calculations for all of the instances are shown in the following table:

Table 4. The distribution of the difference value D across particles

D / Particles	-1 or less (Pre-heavy)	0 (Balanced)	1 or more (Post-heavy)	Total
BACK	**30**	8	14	52
IN	2	18	**30**	50
OUT	8	11	**48**	67
UP	31	26	**98**	155
ON	1	**4**	1	6
Total	72	67	**191**	330

Table 4 shows the distribution of the difference values. *Pre-heavy* indicates phrasal verbs that are heavier than postverbal subjects, while *post-heavy* indicates verbs that are lighter than the subjects. On average, post-heavy tokens ranked the highest. This result indicates that postverbal subjects tend to be heavier than phrasal verbs and is in agreement with the principle of end-weight.

However, we must separately consider the particle *back*; *back* shows a different tendency from that of *in*, *out*, and *up*, as shown in Table 4. The subjects of verbs using the particle *back*, as already shown in Table 3, tend to bear given information. Furthermore, Table 4 also shows that these subjects tend to be lighter than their verbs, despite being placed after the verbs. This result arises because we can identify the referents of the NPs from the previous discourse, as previously explained in the discussion of Table 3. These subjects also tend to be composed of just one word, such as *Reagan* and *Truman*. Many such proper nouns were found among the 330 tokens, but pronouns such as *she* and *he* were absent.

This analysis also examines whether subject-verb inversion in reporting clauses is related to the length and complexity of subject NPs caused by post-modifiers on these subjects, focusing on relative clauses and appositive phrases. These two elements are used to add information to subjects. I found that 69 of the 330 tokens were of this type, or approximately 21%. This tendency may therefore exist in the data.

4.2.3 The correlation between heaviness and information status

To sum up the discussions of Table 3 and Table 4, when phrasal verbs with *in*, *out*, and *up* are used, the verb-subject order in the reporting clauses is compatible with the principles of information flow and of end-weight, while when phrasal verbs with *back* are used, the same pattern does not hold.

I calculated the correlations between the difference value D and information status, or between Table 3 and Table 4.

Table 5. The correlation of the difference value D and information status

Information status D	Given	Inferrable	New	Total
Pre-heavy	**72**	0	0	72
Balanced	39	8	16	63
Post-heavy	20	8	**165**	193
Total	131	16	181	328

It is noteworthy that there is a close connection between the given and pre-heavy conditions, as well as between the new and post-heavy conditions. When postverbal subjects carry given information, the number of words that form them is few. Conversely, when postverbal subjects bear new information, they are long and complex. Therefore, an interrelation exists between the difference value and information status.

As shown in Table 5, the category of new and post-heavy is the most prevalent. Therefore, we may conclude that when these two conditions are met, the conditions for inversion are satisfied.

4.3 Suggestions and future direction

Throughout Section 4, we have seen the various properties of the linguistic phenomena in question. In 4.1, the relationship between quotative inversion in the initial position and "Timestyle" was proven in quantitative terms using the *Time* Magazine Corpus. In 4.2, the verb-subject order in reporting clauses using phrasal verbs with *in*, *out*, and *up* was shown to be compatible with the principles of information flow and end-weight.

The observations in Section 4 further develop the ideas of Fukuchi (1985), Sonoda (1997), and Burchfield (1998), which were reviewed in 3.2. First, the discussion in 4.2 is closely related to that of Fukuchi (1985). As shown in 4.2, quotative inversion can fulfil the discourse function. Birner (1996), who discusses the relationship between inversion in English and the

discourse function, exempts quotative inversion from her study because the inversion often does not behave in this manner; however, my data show the existence of the function. The second function corresponds to one of Sonoda's (1997) suggestions: quotative inversion in the initial position is used "to conclude and summarize a paragraph". As Table 2 in 4.1 shows, an overwhelming number of inversions of *sum up* were found in the initial position. Interestingly, the lexical meaning of *sum up* lends support to Sonoda's (1997) suggestion. I have therefore termed it the summing-up function. The third function corresponds to one of Burchfield's (1998) suggestions: in the context of multiple sequential statements, "one *said* formula balances the other". This formulation suggests that quotative inversion in the initial position can be used in a dialogic context. The inversion of phrasal verbs with *back* in my data is characteristic of such a context, which I have termed the dialogic function.

The last two of the three functions which I have suggested invite further investigation. The points remain to be proven or tested, and their validity may be left to the debate of future researchers.

5. Concluding remarks

In this article, I have discussed two issues with quotative inversion, with special reference to phrasal verbs. First, I proved the relationship between quotative inversion in the initial position and Timestyle, restricting reporting verbs to phrasal verbs and not considering simple verbs. The data from the *Time* Magazine Corpus indicated that quotative inversion occurred more often in the initial position than in the medial and final positions. Significantly, this result challenges previous research on two points. The first is that phrasal verbs can be used in verb-subject order in reporting clauses, although several previous studies disagree with this claim. The second is that Timestyle also applies to cases of phrasal verbs.

Second, I examined two issues on the basis of the data, including quotative inversion not only in the initial position but also in the medial and final positions. The first is whether postverbal subjects in reporting clauses are mentioned previously. The second is the relationship between heaviness and inversion. I showed that when phrasal verbs with *in*, *out*, and *up* are used, the verb-subject order in the reporting clauses is compatible with the principles of information flow and end-weight. In contrast, when phrasal verbs with *back* are used, the principles are not applied. As a result, a correlation was found between the difference value D and information status.

Furthermore, I suggested the three possible functions of quotative inversion in the initial position in support of the ideas of Fukuchi (1985), Sonoda (1997), and Burchfield (1998), respectively: "discourse function", "summing-up function", and "dialogic function".

Nonetheless, one related problem remains: the case of the phrasal verb *go on*. Several previous studies have pointed out that *go on* cannot be used in verb-subject order in reporting clauses. I touched on this issue briefly in this paper; however, our results do not mean that no inverted usage of *go on* occurs, but simply that the number of occurrences may be very small. Therefore, additional studies of *go on* are required to reach any generalization.

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Evaluative meaning of negative expression: Asymmetry between *readable* and *unreadable*

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ABSTRACT

The aim of this paper is to examine the relationship between negative expression and evaluative meaning, making use of the *Corpus of Contemporary American English* (*COCA*). The English antonymous pair formed by *readable* and *unreadable* is in an asymmetrical relationship, though these two adjectives are structurally symmetrical, in that only the latter assumes facial expressions of human beings as the target of reading. What causes such an unexpected difference is evaluative meaning, that is, the speaker's positive or negative feeling or emotion conveyed additionally to the denotative meaning by linguistic expressions. Finally, it is concluded that the contrastive relationship between the two words varies in accordance with a combination of the following three factors (a) the standard of positive evaluation conveyed by the suffix *-able*; (b) the most salient stage in the procedure of reading; (c) the object of reading activity.

1. Introduction

Evaluation refers to the speaker's attitude or the feeling which is conveyed in addition to the denotative meaning of a given linguistic expression (Thompson – Hunston 1999). Evaluative meaning is sometimes inherent to an expression and sometimes gained through a contextual effect.

(1) He is a genius.

(2) He is just a student.

In (1), the noun *genius* takes on a positive evaluation. That is, the speaker regards it favorable to be a genius. This is almost always true when this noun

is used. On the other hand, *student* in (2) is not the case; this noun does not innately have a positive or negative evaluation. But when collocated with the adverb *just*, it is conveyed that the speaker finds it not good for him to be a student, comparing the status with more independent ones. Therefore, the utterance in (2) can be said to be evaluatively negative.

This paper sheds light particularly on the evaluative meaning of English negative expressions. English has a negative prefix *un-*. It has been generally argued that the function of *un-* is not limited to logical negation and it can serve as an indicator of negative evaluation. However, little has been examined about what kind of things the evaluative meaning of the prefix works on. The aim of this paper is to show that *readable* and *unreadable*, in spite of their structural symmetry, are asymmetrical in that they evaluate different kinds of things and that the characteristics of the antonymous pair varies in accordance with the combination of the following three factors: 1) the type of evaluative meaning conveyed by the suffix *-able*; 2) the most focused stage in the step of the reading procedure; and 3) the object of reading activity.

2. Previous studies

Un- is one of the most productive English prefixes representing negation; it can take a great number of adjectives as its base, as in *unlucky*, *unreal*, *unkind*. It can also be attached to present and past participles, as in *unfolding* and *unused*. In this section I review some typical attributes of *un-*, mainly from the perspective of evaluative meaning. Firstly, *un-* tends to refuse an adjectival base whose meaning is evaluatively negative (Zimmer 1964):

(3) **unbad*, **unsmall*, **unnarrow*, **unsad*

(4) negative affix + e-pos base → e-neg derived output (Horn 1989)

The prefix exclusively selects positively evaluated adjectives (*unselfish* is an exceptional case). As a result of derivation in which the prefix is attached to the positive base, a negative adjective is formed. In relation to this, it should also be noted that *un-* does not simply denote logical negation; rather it functions to assert that something or someone is in a given state. For example, Sherman (1973: 76) argues that to state "that someone is unhappy is logically to assert a quality, which is quite different from denying a quality

by saying that he is not happy". When we say someone is *unhappy*, what it means is that he or she is in a mental state contrary to being *happy*. Thus affirming someone is *unhappy* will not always be equivalent to denying the person is happy.

In this way, an *un-* adjective (e.g. *unhappy*) and its unprefixed counterpart (e.g. *happy*) together form a contrary pair where the scale cannot simply be divided into two. But there are some unclear cases; Mettinger (1990) argues that when the prefix appears with a base formed by a particle or suffix *-able*, their antonymous relationship is exceptionally interpreted as contradictory, not contrary. *Uneatable*, for example, is supposed to be gained through the process of syntactic re-categorization of *cannot be eaten* and therefore does nothing but deny the state the base adjective represents. In this case, there is no gradience between the positive and negative participants of the antonymous pair. The scale is split into two parts complementarily. Such an idea might also be applied to adjectives with a negative prefix other than *un-*. Lieber (2004) conducts an analysis based on her own judgment of gradability between several negatively prefixed adjectives and their positive counterparts. As a result, she regards it more difficult to assume any intermediate state between *curable* and *incurable* than between *happy* and *unhappy*.

3. Preliminary discussions

Against the traditional idea reviewed above, intuitively it is sometimes hard to believe that *un*-V-*able* adjectives are only associated with contradiction. Especially fully lexicalized expressions like *uncomfortable* are difficult to assign the contradictory meaning "state of not being *comfortable*". Hamawand (2009: 71), delineating the polysemy network of *un-*, posits one of its senses as "distinct from what is specified by adjectival base" and regards *unbelievable* as having this meaning, which is obviously distinct from mere contradiction (which Hamawand calls "the antithesis of what is specified by the adjectival base"). Such an interpretation of these adjectives is possible in part because of the semantics of the suffix *-able*. For example, *readable*, naturally derived from the verb *read*, is typically associated with interest or worthiness in reading. Such an association cannot of course be predicted from the semantics of *read* itself and thus be replaced with "*can be read*" without any contextual support. What is implied here is that the antonymy between *readable* and *unreadable* cannot be so much contradictory as contrary, where gradience

from one extreme to the other is found. When considering the pair in light of evaluative meaning, it is imperative to grasp what type of evaluation *-able* represents. Additionally, it is also necessary to carefully examine on what aspect in the act of reading is mainly focused. This is because it is assumingly possible to divide the process of reading into several steps. According to the definitions of *to read* in several English dictionaries, reading something is performed in two stages: looking and understanding. As an illustration of this, *Longman English Dictionary* (*LDCE*) defines the verb as "to look at written words and understand what they mean".

From the perspective of Frame Semantics, Croft (2009) assumes an EAT frame and then maintains the process of eating includes three steps: intake, processing and ingestion. Croft further classifies some English verbs into the classes of "Chew Verbs" and "Gobble Verbs" which focus specifically on processing and digestion. Ultimately, he regards *eat* and *drink* as comprehensive verbs which can be applied to every step denoted above.

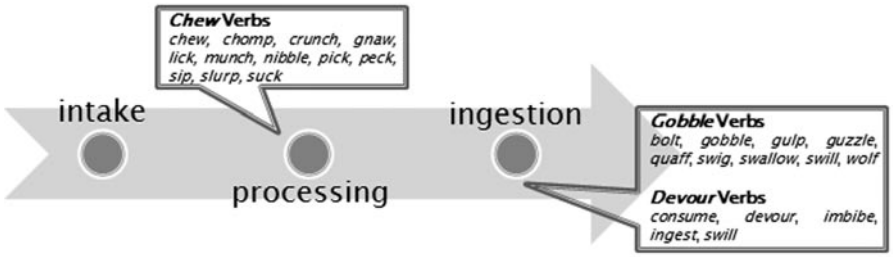

Figure 1. The process of eating in EAT frame (Croft 2009)

The definition of *readable* in dictionaries basically corresponds to the two steps in reading seen above; easiness in having visual contact with written letters or text and in understanding its content. *LDCE* defines it as (a) "interesting and enjoyable to read, and easy to understand" and (b) "writing or print that is readable is clear and easy to read". Furthermore, the derived adjective also means the quality of being interesting or reading-worthy. Such an additional meaning is not elicited until the verb *read* is combined with *-able*. In this way the suffix does not only mean the possibility something is done but also contains adverbial information like easiness, interest and worthiness, which could be paraphrased into a prepositional phrase such as *with ease* or *with interest*.

Finally, the definition of *unreadable* is somewhat "unreadable". *LDCE* defines *unreadable* in the following three senses: (a) "if someone's expression

or face is unreadable, you cannot tell what they are thinking"; (b) "an unreadable book or piece of writing is difficult to read because it is boring or complicated"; (c) "unreadable writing is so untidy that you cannot read it". Besides the senses corresponding to *readable*, the negative adjective has a figurative one "not being able to read someone's feeling or thought from his or her face".

Superficially, they look structurally symmetrical in that they share the same base verb and suffix. Nevertheless, as seen above, they entail the semantic difference with respect to what is represented as the object of reading activity. What makes them so? Indeed, the verb *read* can be used with a direct object like *face*, *eyes*. Thus, it is not so surprising that *unreadable* has a sense inherited from this. But then, why is this not true of *readable*? This study assumes the involvement of evaluative meaning with this difference.

4. Research

In order to reveal the cause of the difference between *readable* and *unreadable*, this study conducted a corpus-based analysis. The *Corpus of Contemporary American English* (*COCA*), was adopted as its database. *COCA* was compiled by Mark Davies at Brigham Young University and contains approximately 4.5 billion words of American English of modern times. *COCA* includes 567 instances of *readable* and 479 instances of *unreadable*, showing that they appear so frequently as to be dealt with equivalently. The procedure of the research is the following. First, for the purpose of finding out what *readable* and *unreadable* respectively take as their object of reading activity and, therefore, of evaluation, what kind of nouns tend to appear within four words before and after each adjective was queried. Then, the way evaluative meaning represented by the adjectives works on the surrounding elements was examined.

Tab. 1 below shows the list of nouns which co-occur with *readable* in decreasing order. Here, only examples found more than four times are presented. For the sake of convenience, their frequency against that of *unreadable* is also displayed; the figures in the columns under the headings "R" and "U" indicate the frequency of each noun within the designated scope appearing together with *readable* and *unreadable,* respectively. The list clearly shows compatibility of *readable* with nouns denoting written materials like *book* and *account*. Furthermore, the adjective also appears together with several expressions referring to the viewing space of computers like *display* and *screen*.

Table 1. Nouns which occur with *readable*

Noun	R	U	Noun	R	U	Noun	R	U	Noun	R	U
book	39	8	narrative	8	1	people	6	1	theory	4	0
text	20	42	format	7	0	information	6	1	study	4	0
account	13	0	letter	7	1	name	5	0	sunlight	4	0
history	13	1	magazine	6	0	prose	5	0	manner	4	0
display	11	2	essay	6	0	way	5	0	font	4	0
form	10	1	article	6	0	sign	5	1	guide	4	0
screen	10	1	volume	6	0	novel	5	1	biography	4	0
writing	10	6	year	6	0	print	5	1	code	4	1
machine	9	3	work	6	1	style	4	0			

Tab. 2 below lists the nouns which were frequently observed with *unreadable*, here again in decreasing order. In contrast to the case of *readable*, its negative adjective is closely associated with nouns denoting the facial expressions of human beings or other animals, such as *expression*, *eye* and *face*. This tendency is clearly consistent with the dictionary definition given in the previous section. This pattern accounts for a large percentage of the overall results; an unnaturally small number of instances of *unreadable* appears with nouns whose referent is written materials or the like. Indeed, we can find a much greater number of co-occurrences of the adjective with the noun *text*, but this can be treated exceptionally because almost all of the examples are special cases where the noun refers technically to the "code" of the programming languages.

Table 2. Nouns which occur with *unreadable*

Noun	R	U	Noun	R	U
expression	62	1	look	4	0
face	49	2	feature	4	0
text	42	20	emotion	4	0
eye	34	2	part	4	0
word	9	3			
book	8	39			
writing	6	10			
mask	5	0			
moment	4	0			

Tabs. 3 and 4, shown below, provide the lists of adjectives which appear relatively frequently within four words before and after *readable* and *unreadable*, respectively. These lists are helpful to reconfirm that the former is positively evaluated and the latter is negatively evaluated, because these co-occurring adjectives can be seen as their synonyms. They can even be the key to the identification of the evaluative meaning of *-able*: easiness or worthiness.

Table 3. Adjectives which appear with *readable*

Readable	R	U
neat	8	0
new	7	1
clear	6	0
short	6	0
large	5	0
informative	4	0
interesting	4	0
accurate	4	0
bright	4	0
sharp	4	0

Table 4. Adjectives which appear with *unreadable*

Unraedable	R	U
dark	11	1
black	5	0
blank	4	0
messy	4	0
other	4	1
small	4	2

Next, we go on to observe in what way evaluative meanings are realized within the passages including *readable* and *unreadable*. The example in (5) is a case where *readable* can be judged to have a positive evaluation associated with easiness, because it is contrasted with a bad condition characterized by visual difficulty.

(5) The layer must be highly reflective to make the display readable even in low light.

When the target of reading is something written, like a book, it may sometimes not be easy to decide at first which standard *readable* relies on interestingness of the content or stylistic clarity, but contextual support enables us to do this. *Readable* in (6) which clearly refers to style and (7) in the topic of translation can be regarded as denoting understandability.

(6) James' A Small Boy and Others and Notes a Son and Brother tell us very little of the man and, couched in his late and most elliptical style, are among his least readable works.

(7) Sitting in my little study in Salamanca, absorbed in a daily struggle to render Mochulsky's words into readable English […]

On the other hand, when *readable* is found together with quite positively evaluated elements like *informative* in (8) and *love* in (9), the type of evaluative meaning denoted by *-able* can be treated as worthiness. In such cases, the focus is exclusively on the stage of understanding the content; not one example could be found that conveys the worthiness of looking at something.

(8) It is a beautiful visual treat, and so readable and informative.

(9) I love her readable blog with the employee's perspective.

As seen already, surprisingly few instances of *unreadable* are associated with something written such as books or magazines. Below are the rare examples. The focused stage and the type of evaluative meaning can be judged from the context.

(10) Vandals have written on the statue's base and have begun chipping away at the engravings, making some of the words unreadable.

(11) Read everything that doesn't bore you so much you're wasting time. (Most business text books are almost as unreadable as the computer books.)

Now we may examine the powerful combination of *unreadable* and facial expression. As in (12), many cases of *unreadable* of this sort follow *but*. What this means is that the adjective is negatively evaluated by the speaker, who intends to read others' expressions but cannot. Furthermore, several impressive examples like (13), where an unreadable face is vividly contrasted with one of someone laughing, in turn take on positive evaluation.

(12) For a moment she tried reading his thoughts; but as usual his expression was unreadable.

(13) The woman laughed gently, her expression changing from one unreadable state to another.

As predicted from the dictionary definition, *readable* seldom takes facial expression as its target; even in the rare cases when it does, it appears together with another negative element like *not* or *hardly*. It should also

be noted that *unreadable* frequently appears between two utterances or is embedded within a single one, explaining a contingent situation, that is, the facial expression of a participant in the discourse. This tendency shows that *unreadable* can also function to invigorate the description of written texts developed in a straightforward manner:

(14) "Thanks, but I don't think so." She crossed her arms, her face unreadable. "Why not?"

Most of the examples of *unreadable* related to facial expression can be said to focus on the stage of understanding, but some of them depend on "lookability":

(15) Simon's expression was unreadable because the sun was reflecting off his lenses.

(16) The Bosnian turned his head slightly, but his expression was unreadable under the mask.

What has been observed thus far can be represented as below (Table 5):

Table 5. Summary chart

Evaluation	Easiness		Worthiness	
Focused step	look	understand	look	understand
Readable [written]	◎	◎	×	◎
Unreadable [written]	○	○	×	○
Readable [face]	×	×	×	×
Unreadable [face]	○	◎	×	×

Following Tab. 5 above, three provisional conclusions can be drawn: 1) facial expression can be applied only to *unreadable*, but it cannot be used with the intention of referring to someone's face which lacks of worthiness or interestingness to read; 2) when the evaluation regards easiness, both *readable* and *unreadable* can be used with the state of looking at or focusing on. In the case of worthiness, on the other hand, not one example focusing on the first stage can be observed; it seems compulsory to be associated with understandability in some way; and 3) The asymmetry between *readable*

and *unreadable* is not restricted to the dictionary definition. The unbalanced relationship of the two can be observed in the expressions used and realized in the form of remarkable disparity in the frequency of specific uses.

5. Asymmetry between *readable* and *unreadable*

The final section deals with what the antonymous relationship between *readable* and *unreadable* is like. It apparently seems that there is potential gradience between them ranging from extreme positivity to extreme negativity. But the dimension where the potential is actually evoked differs in accordance with the object of reading and the focused step in the procedure. There must also be involvement to the extent necessary for evaluation. The worthiness of reading someone's face cannot be linguistically realized because it is not at all something to understand or enjoy or find something meaningful in. This reveals that there is little motivation to judge its readability. On the other hand, books and magazines become more worth reading as they become more interesting. Thus, there is much significance in evaluating their readability. Why then can *readable* not be evaluated in terms of easiness of reading facial expression, while its negative counterpart in this sense appears frequently? This could be because we do not try to read a person's face exposing their feeling or emotion. We can see the feeling easily without any attempt to do so. If there were to be any context in which such a thing can be said, it would not be expected to be positively evaluated. *Unreadable* with this meaning can appear legitimately because it is meaningful to emphasize the marked quality, that is, difficulty in reading something which is usually easy to understand. Facial expressions of human beings or animals are supposed to be readable; thus, it is unlikely that the more readable it is the better it becomes. Necessity for evaluation arises only when the basic premise is not satisfied. In this way, morphemes which are inherently evaluative, like *un-* and *-able*, cannot elicit such meaning in the specific realm in which little motivation for evaluation can be found. Finally, they sometimes go so far as to end up appearing quite rarely.

The antonymous relationship between *readable* and *unreadable* might also be characterized by the observation of co-occurring adverbial modifiers. They are both found appearing together with degree modifiers and thus situated on the gradient scale, but their attributes seem quite different from each other. *Unreadable* is typically modified by adverbs like *virtually*, *nearly* and *completely*, which implies that a lower limit of readability can clearly be drawn.

(17) Albert Einstein wrote a completely unreadable piece for the SCHOLAR, "On the' Cosmologic Problem", in 1945.

(18) His flinty eyes were completely unreadable.

(19) White and gray display is nearly unreadable.

Instead of taking these adverbs as modifiers, *readable* tends to appear with *highly* and *very*,

(20) Meanwhile, his clean, highly readable signature brought such a bonanza to forgers that the Ted Williams autograph.

(21) J.J. Norwich, The Normans in the south (London, 1967) 303-31, paints a highly readable portrait of the political complexities surrounding Roger's rise to kingship.

This observation in turn indicates that the upper limit is not definitely assumed and that the readability of written materials is worth evaluating with degree especially on a positive scale. It follows that it is possible to visualize the antonymous relationship with regard to the motivation for evaluation as in Figure 2.

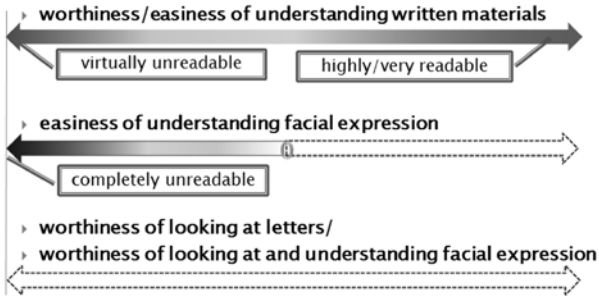

Figure 2. Visualization of the scale where evaluation is at work

In the scale of worthiness and easiness of reading something written, evaluative meaning can be developed bi-directionally. Easiness of understanding facial expressions, however, can be assumed to be developed only in a negative direction with the state of being readable set at zero; as argued above, conveying the understandability of facial expressions does

not lead to putting an emphasis on positive evaluation. Finally, evaluative meaning cannot be elicited in the whole scale of easiness or worthiness of looking at faces, for neither *readable* nor *unreadable* in this sense is found.

6. Conclusion

This paper has attended to the cause of semantic asymmetry between *readable* and *unreadable* which can be observed despite their symmetrical structures. To conclude, it can be stated that it is the way the following three factors are combined that determines the realm of the evaluative meanings of the adjectives that are at work:

a. which quality *-able* represents, easiness or worthiness
b. which stage is focused on, looking or understanding
c. what kind of things are taken as the object of reading and thus evaluating, a book, letter or facial expression.

The results of this survey represent the tip of the iceberg of studying evaluative meanings realized in negative expressions. In order to grasp the whole picture, it is necessary to examine the behavior of other antonymous pairs more comprehensively.

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The semantics and pragmatics of motion verbs in air traffic English and general English

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ABSTRACT

The aim of this paper is to determine the meanings of 54 motion verbs as they are used in air traffic and general English. Employing a componential method, we discover that ten distinctive features are necessary and sufficient to identifying the internal structure of the verbs under consideration. Based on these findings, we contrast the uses of ten motion verbs in the registers of air traffic and everyday English to establish semantic relations. Five semantic relations are discussed. Examples provide evidence of semantic differences in subject matter, which show that there are sometimes pragmatic differences also, and that agency causes changes in verbal meaning in the two contexts. The issues examined in this study may be of substantial interest to ESP practitioners, to aeronautical and aviation students, and to pilots and air traffic controllers.

1. Introduction

There has been a growing interest in the semantics of verb classes and in the uses of verbs in recent years. If verbs are analysed and described in terms of their semantic components, they present complex semantic structures. The semantic structures of lexical units such as verbs are treated as systems of meanings. Achieving the appropriate representation of the meaning of verbs is arduous and complex. Motion verbs present no exception. A great problem occurs when linguists try to establish a complete and stable set of semantic features. The most developed proposal seems to be that of Wierzbicka (1972, 1985, 1989) in her works on semantic primitives.

The verbs of motion have received close attention in semantics literature (cf. Talmy 1985; Tsujimura 2003; Slobin 2004). However, there

have been few investigations into the semantics and pragmatics of motion verbs in air traffic and general English. This paper is an attempt to reveal necessary semantic features which determine the meanings of some motion verbs used in air traffic communications and everyday English, and to look at their possible semantic relations.

2. Rationale, corpus and method

The purpose of this paper is to identify semantic components/features of 54 verbs of movement used in the field of air traffic (A) and in general English (G), and to establish semantic relations between some of the verbs used in general and specific contexts. In order to achieve this aim, definitions of the verbs under scrutiny are obtained from specialist dictionaries and general English dictionaries (see Sources below), and can be found in the Appendix at http://www.sf.bg.ac.rs/downloads/appendix_motion_verbs1.pdf. The composition of the verbs is examined by means of a componential method (structuro-lexico-semantic analysis).

C[omponential] A[nalysis] or lexical decomposition was patterned on the phonological methods of the Prague School, which described sounds by determining the absence and presence of features. Hjemslev (1943) introduced this approach within structuro-componential semantics (of the Copenhagen School). The method was further improved by Katz – Fodor (1963: 170-210) in their article "The structure of a semantic theory" as well as others, including Nida (1975a, b) and Jackendoff (1990), and it continues to be relevant and beneficent in recent work. Although CA has been employed in the framework of the GT model, it has also been adopted in the field of the semantics of first language acquisition (see Clark 1973: 65-110), in contrastive semantics (cf. Nöth 1979: 25-40; Koulikova 2006), in first- and second-language reading comprehension (van Gelderen et al. 2004: 19-30), in learning and memory processes (Cornoldi et al. 2008: 103-123), and so on. Hjemslev (1943) argues that words can be analysed into what he calls "content figurae". Nida (1975a: 229) uses the term "diagnostic component", defined as "a semantic component which serves to distinguish one meaning from another, whether the meanings belong to one word or several […]." The terms "distinctive component", "essential component", and "contrastive component" are also found in the literature to indicate important semantic features. In this paper, the "indexicality"[1] of motion verbs is revealed by "distinctive features". "Distinctive features" are understood to be features

[1] The term "indexicality" is taken from Garfinkel (1967), and Mehan – Wood (1975).

which are contained in the definitions of the motion verbs analysed and which differentiate the meaning of one verb from those of others. For sake of precision, we assume that "distinctive" can refer to one or more features, and that all features cannot apply to all motion verbs.

To better follow the analysis, we should keep in mind that verbs of motion are understood to be verbs that express a kind of movement. Motion verbs require a spatio-temporal component, which means that objects change their position or orientation over time. Verbs of motion may also include additional components (e.g. culminating conditions and manner of motion). Examples of verbs specifying manner of motion include *rotate*, *pitch* and *glide*, and those of verbs of inherently directed motion include *enter*, *leave* and *return* (cf. Levin 1993). The lexical field examined in this paper is delimited by the framework of Frawley's 1992 and Levin's 1993 characterisation of motion events. Our main intent is to examine semantic components of English motion verbs as employed in air traffic registers and everyday language.

The starting point of the analysis presented here is Hüllen's article "Movements on Earth and in the Air", published in 1981. The article considers twelve motion verbs and four binary oppositions: "+ / - own energy", "+ / - ground contact", "+ / - telic" and "+ / - normal". Our hypothesis that these oppositions are insufficient to determine the meanings of the 54 verbs of motion discussed triggered this investigation. Although the method chosen for the analysis has been criticised heavily since the 1960s, it seems that the extension of the system of distinctive features, added to specify certain semantic components, i.e., movements of aircraft, does help us represent the verb meanings in question more fully. Apart from the symbols "+ / -", the inclusion of the symbols "∧ / ∨", "> / <" and "→ / ←" was necessary: airplane movements are performed at different speeds; that is, there is no presence or absence of speed if a plane moves, and a speed increase and a speed decrease may be represented as "∧ / ∨; aircraft movements are dangerous to a certain degree, and therefore they may be represented as "dangerous to a greater degree" (">"), or "dangerous to a lesser degree" ("<"); finally, it is proposed here that "non-movement to movement transition" or "movement to non-movement transition" feature takes the symbols "→ / ←". These modifications to the method are introduced to make the approach more adequate for the verbs under discussion. We present details below.

3. Analysis, results and discussion

In this section, the verbs of movement to be considered are first classified according to their internal structure, i.e., according to ten distinctive features

reflected in common dictionary definitions of the verbs. A set of examples is then provided to illustrate how some of these verbs are used in general English and in the field of air traffic. After the uses of the verbs have been compared with regard to the ten distinctive features, five semantic relations are established and discussed.

3.1 The first phase of the study

The results of the first phase in the analysis are presented in Tables 1-10. The ten "distinctive features" present are as follows: "+ / - own energy", "+ / - ground contact", "+ / - under control", "→ / ← non-movement to movement transition or movement to non-movement transition", "+ / - movement from one place to another", "+ / - directional movement", "+ / - telic", "∧ / ∨ speed", "+ / - disrupted movement", and "> / < dangerous movement".

3.1.1 Distinctive feature "+ / - own energy"

Table 1 contains the verbs of motion related to "movement with one's own energy / movement without one's own energy".

Table 1. Verbs of movement with regard to the opposition "+ / - own energy"

+ own energy	*taxi*, *roll*$_1$, *take off*, *climb*, *cruise*, *crab*, *descend*, *sink*, *dive*, *let down* $^{(partial\ power)}$, *touch down*, *pitch*, *roll*$_2$, *yaw*, *nosedive*, *pull up*, *ascend*, *lift*, *thrust*, *stretch*, *board*, *embark*, *launch*, *boost*, *abort*, *bank*, *approach*, *manoeuvre*, *head*, *travel*, *get*, *fly*, *rotate*, *skid*, *slip*, *go around*, *home in*, *loop*, *balloon*, *close up*, *ditch*, *loiter*, *overrun*, *overtake*, *embark*, *hold*, *shuttle*, *roll*$_4$
- own energy	*drift*, (*descend*), *sink*, *dive*, (*touch down*), *glide*, *pitch*, *roll*$_3$, *yaw*, *nosedive*, *stall*, *abort*, *flutter*, *buffet*, *skip*, *ditch*, *sag*

Table 1 shows that there are four meanings of the verb *roll* in the field of air traffic. They are designated as *roll*$_{1,2,3,4}$. According to the dictionaries used in this analysis, the verb *roll* has the following meanings in the air traffic register: *roll*$_1$ – 'to move an aircraft under its own power in contact with the earth over the runway, either with increasing speed for take-off or with decreasing speed after touchdown'; *roll*$_2$ – 'to move an airplane about the longitudinal axis in the air'; *roll*$_3$ – 'to lean to one side and then to the other because of the wind'; *roll* $_4$ – 'to turn to the left or to the right'. When used in general English, this verb has the meaning of 'to move along on wheels or

by turning over and over, frequently without a fixed direction or aim'. The verbs (*descend*) and (*touch down*), having the feature "- own energy", differ in meaning from *drift*, *sink*, *dive* and *stall* because planes can descend and touch down without using their own energy but cannot do so without the pilot's control and the earth's gravity and inertia. The two verbs are therefore given in brackets in Table 1. *Drift*, *sink*, *stall*, *flutter*, *skip* and *sag* indicate movements performed without the pilot's will.

3.1.2 Distinctive feature "+ / - ground contact"

Table 2 shows the verbs of movement analysed with regard to "+ / - ground contact".

Table 2. Verbs of movement in relation to the opposition "+ / - ground contact"

+ ground contact	*taxi*, *roll*$_1$, *boost*, - → + *touch down / land*
- ground contact	*roll*$_{2,3,4}$, *climb*, *descend*, *ascend*, *fly*, *nosedive*, *boost*, *pull up*, *cruise*, *drift*, *crab*, *dive*, *sink*, *let down*, *glide*, *lift*, *pitch*, *yaw*, *stall*, *rotate*, *flutter*, +↑ - ↓ *skip*, *slip*, *go around*, *home in*, *loop*, *balloon*, *close up*, - → + *alight*, - → + *ditch*, *loiter*, *hold*, *overtake*, + → - *take off*

The symbols "+ ↑ - ↓" associated with the verb *skip* in Table 2 signal a change of movement from the ground to the air and from the air to the ground. The verbs *alight* and *ditch* and their symbols "- → +" indicate movements from the air to water, while the phrasal verb *take off* and its symbols "+ → -" designate a movement from the ground to the air.

The phrasal verb *pull up*, which is seen in general English in example (1G) has the "+ ground contact" feature, whereas it has the "- ground contact" feature in air traffic, as in (1A).

(1) G: The car *pulled up* outside the station[2].
A: After the plane had been diving for some time, it entered a new phase, the upward movement. It began *pulling up*.

The verbs *cruise*, *descend*, *climb*, *dive* and *fly* always contain the feature "- ground contact" in air traffic usage. The following examples illustrate this:

2 If sources for examples quoted within the text are not given, it means that they are the author's own examples.

A plane cruises *if it travels under its own power in the air at a practical speed*; *The tower instructed the American pilot to* descend; *The aircraft starts to* climb *if the control column is moved backwards*; *If the elevators are lowered, the aircraft* dives; *Airbus Industrie's A340 can* fly *non-stop from Europe to Australia*. In contrast, these verbs, excluding the verb *fly*, comprise the feature "+ ground contact" in everyday English, as shown in: *The car* cruises *at a cruising speed of 50 miles an hour*; *Mary* descended *the stairs*; *The old lady* climbed *the stairs slowly*. The verb *dive* incorporates a movement from the ground through the air into water, a movement in the air and in water, that is, a transition from one movement to another, as in *He* dived *from the bridge with style*[3].

3.1.3 Distinctive feature "+ / - under control"

The verbs of motion are classified in Table 3 in regard to the feature "+ / - under control".

Table 3. Verbs of movement in regard to the opposition "+ / - under control"

+ under control	*taxi*, *roll*$_1$, *roll*$_4$, *take off*, *climb*, *cruise*, *let down*, *touch down*, *stretch*, *boost*, *bank*, *approach*, *head*, *manoeuvre*, *pull up*, *ascend*, *lift*, *thrust*, *board*, *launch*, *fly*, *go around*, *home in*, *loop*, *ditch*, *loiter*, *overtake*, *hold*, *glide*, *balloon*, *stall*, *pitch*, *abort*, *sink*, *dive*, *nosedive*, *overrun*
- under control	*roll*$_2$, *roll*$_3$, *ditch*, *sag*, *drift*, *flutter*, *stall*, *pitch*, *skip*, *sink*, *dive*, *nosedive*, *overrun*

Table 3 shows that the verbs *touch down*, *ditch*, *stall*, *pitch*, *abort*, *sink*, *dive*, *nosedive* and *overrun* fall into both categories "+ under control" and "- under control", if used in air traffic English and general English. The following examples and explanations illustrate and support this claim:

(2) G: The ball *touched down*.
A: The aircraft *touched down* on schedule. (*The Free Online Dictionary*)

The meaning of the phrasal verb *touch down* incorporates the "- under control" feature in (2 G), and the "+ under control" feature in (2A).

The verb *ditch* has the meaning of 'to leave suddenly, to abandon' and can include both the feature with the positive symbol and the feature with

[3] Examples in this paragraph are extracted from relevant British and American sources, and can be found in Dimković-Telebaković (2003: 192).

the negative symbol as in (3G). In (3A), it conveys the meaning of 'to make a forced landing on water' and includes the "+ under control" feature.

(3) G: The thief *ditched* the purse in an alley.
A: The plane *ditched* in the water. (*The Free Online Dictionary*)

In (4G), the verb *stall* has the meaning of 'to delay, to put off' and therefore takes the "+ under control" feature, whereas in (4A) it has the "- under control" feature.

(4) G: We *can stall* the sale until we can be sure we have the money. (*Longman Dictionary* 1978: 1085)
A: The air resistance or drag causes the plane *to stall*, that is, to fall below the minimum speed (which is 35 miles to keep the average plane in the air) necessary for horizontal flight or control. (Dimković-Telebaković 2003: 189)

Contrary to (4A), some other examples show that the motion of stalling can occur under control – *The pilot caused the plane to go into a stall*.

The meaning of the verb *pitch* 'to set up a tent' incorporates the feature "+ under control" in (5G) and the feature "+ under control" in (5A), where it has the meaning of 'to turn about a lateral (transverse) axis so that the forward end rises or falls in relation to the after end', i.e., 'to move up and down' or 'to move backwards or forwards with the movement of air'.

(5) G: He *pitched* a tent on open ground.
A: The plane started *to pitch*.

The following examples illustrate that the feature "+ under control" should be included in the meanings of the verb *abort* in the two contexts. As far as air traffic is concerned, we can say that there are plenty of examples where a pilot is forced to take the decision of aborting a landing due to equipment failures, to human errors, to weather conditions, or due to a combination or sequencing of these factors (see the *NTSB aviation accident database* at http://www.airsafe.com/analyze/ntsbdb.htm). The meaning of the verb *abort* in (6G) is 'to end (a pregnancy) too soon' and in (6A) 'to end flight before expected time because of some trouble'. In both actions, the degree of control is the same, and the Agent stops the process before completion. In contrast, the meaning of the verb *abort* in *She* aborted *spontaneously* is 'to give birth too early to (a dead child)', where the verb is intransitive. Since the verb has a different meaning, it is possible to classify it as the "- under control" feature.

(6) G: The doctor had *to abort* the baby/the pregnancy. (*Longman Dictionary* 1978: 3)
A: The pilot was then forced *to abort* a landing.

Further, sentence (7G) contains the verb *sink* with the "+ under control" feature, whereas in sentence (7A) *sink* exhibits the "– under control" feature and the meaning of 'to move an aircraft downwards in the air under its own power or under an external force with the risk of dangerous results (like crashing into other planes, touching the ground, etc.)'. In contrast, examples (8G and A) and (9G and A) show that the positive value of the feature can be incorporated into the meanings of the verbs *dive* and *overrun* when used in general and specialist contexts. The verb *dive* has the meaning of 'to go under the surface of the water' as in (8Ga), and the meaning of 'to move quickly, esp. downwards, head first, or out of sight' as in (8Gb), as well as 'to move an aircraft downwards under its own power or under the external force of gravity with increasing speed' as in (8A). The examples containing the verb *dive* show that the primary sense of *dive* has been changed, i.e., that in some specific uses we find metaphorical meanings of particular items. The verb *overrun* also supports this claim since it has the meaning of 'to spread over and occupy and usually harm' in (9G) and 'to get out across the runway end during landing or aborted take-off' in (9A). Although planes mainly overrun without the pilot's control, the movement can be performed under control if an engine failure forces the pilot to overrun.

(7) G: They *sank* fence posts yesterday.
A: After the plane *had been sinking* for some time, it crashed into another plane.

(8) Ga: They *are diving* for gold from the Spanish wreck.
Gb: The rabbit *dived* into its hole. (*Longman Dictionary* 1978: 319)
A: Reports suggest that both planes *were diving* to avoid each other at the time of the crash.

(9) G: The enemy *overran* the conquered country. (*Longman Dictionary* 1978: 775)
A: When landing, the pilot was forced to *overrun*.

The verb *nosedive*, as used in (10G and A), demonstrates that the feature "- under control" is needed to define the verb meaning more precisely. The definition of the verb given in common dictionaries is 'to fall or drop

suddenly and by a great deal, as in prices', or 'to come down steeply with the nose pointing to earth at the maximum speed'.

(10) G: The prices *do not nosedive* here. They go up daily.
A: The cockpit was submerged as the plane *nosedived* into the water.

A comparison of the verb meanings expressed in the above sentences with the verb definitions provided in dictionaries reveals that the definitions do not contain the feature "+ / - under control". The question arises: Does the decompositional semanticist know what the right features are and how many of them is enough to define a word meaning? The only answer to the question seems to be: s/he searches for distinctive features and includes as many as are discovered in definitions of words, no matter what their number. This means that the existing definitions of motion verbs require the inclusion of the "+ / - under control" feature.

3.1.4 Distinctive feature "→ / ← non-movement to movement transition or movement to non-movement transition"

Leech (1971: 19) calls the verbs *arrive*, *land*, *leave*, *stop*, *get* and *go* "transitional event verbs", because they denote transition from one state to another. Table 4 shows how such verbs are categorized according to the distinctive feature "→ / ← non-movement to movement transition or movement to non-movement transition". It is important to note that movements in regard to this distinctive feature are performed by planes from the ground (*launch*, *depart*, *leave*, *board*), from the ground into the air and in the air (*boost*), from the air to the water (*alight*, *ditch*), and from the air to the ground (*abort*, *arrive*, *stop*, *end*, *embark*).

Table 4. Verbs of movement related to the opposition "→ / ← non-movement to movement transition or movement to non-movement transition"

→ non-movement to movement transition	*launch*, *boost*, *depart*, *leave*, *board* / *embark*
← movement to non-movement transition	*alight*, *ditch*, *abort*, *arrive*, *stop*, *end*

3.1.5 Distinctive feature "+ / - movement from one place to another"

Table 5 comprises the verbs of motion which denote either movements from one place to another or circular movements.

Table 5. Verbs of movement in relation to the opposition "+ / - movement from one place to another"

+ movement from one place to another	*lift*, *roll*$_1$, *taxi*, *travel*, *shuttle*, *climb*, *ascend*, *board /embark*, *let down*, *fly*, *descend*, *stretch*, *loop*
- movement from one place to another	*rotate*, *go around*, *loiter*, *hold*

The following constructions illustrate the use of the verbs *taxi*, *lift*, *let down* and *descend*, having (+) value.

(11) G: His friend *taxis* in Munich.
A: The pilot *is taxiing* now.

The verb *taxi* means 'to ride in a taxi' in (11G), and 'to move an aircraft under its own power on the ground between terminal buildings or maintenance hangers and runways before taking off or after landing' in (11A).

(12) G: She *couldn't lift* her bag. It was too heavy.
A: The wings provide the lift necessary to overcome the weight of the aircraft and *lift* it through the air. (Dimković-Telebaković 2003: 199)

The meaning of the verb *lift*, as used in (12G), is 'to elevate', and its meaning in (12A) is 'to ascend an airplane by making an effort to overcome resistance of weight'.

(13) G: She *let* the window *down*.
A: The pilot slowed down and *let down* in a gradual descent.

Example (13G) contains the verb *let down* which means 'to take down', and in example (13A) it has the meaning of 'to move an aircraft downwards in the air under its own power by which it descends from its initial approach altitude to the final approach altitude'.

(14) G: The sun *descended* behind the hills.
A: Air France 818 was recleared *to descend* to flight level 70. (Dimković--Telebaković 2003: 200)

The meaning of the verb *descend* in (14G) is 'to go down', and in (14A) 'to move an aircraft downwards in the air at an angle which is determined by

technical limitations and safety regulations, either under its own power or under the external forces of gravity and inertia'.

The following examples contain the verbs *rotate*, *go around*, *loiter* and *hold*, which have (-) value, that is, express circular movements in the air traffic field. The analysis below reveals their meanings in general English and in the air traffic register.

(15) G: You *can rotate* the wheel with your hand.
A: In order to maintain straight and level flight, the aircraft must be prevented from *rotating*. This depends not only on the magnitudes of the four forces (lift, weight, thrust and drag), but also on the positions at which they act. (Dimković-Telebaković 2003: 183)

The meaning of the verb *rotate* in example (15G) is 'to (cause to) turn round a fixed point', whereas in example (15A) it has the meaning of 'to (cause to) turn in a circle, esp. around a fixed point'.

(16) G: She *goes around* quite a lot, working for an international firm.
A: Instead of landing, the Boeing 727 *went around*. (Dimković--Telebaković 2003: 189)

Example (16G) contains the verb *go around* which means 'to move from place to place, to travel, to get about', and the meaning of 'to perform a circling manoeuvre to remain airborne instead of landing' in (16A). As we can see, this verb does not entail circular movements in general English, and takes (+) value.

(17) G: They *loitered* on their way home. (Dimković-Telebaković 2003: 189)
A: There are three airplanes *loitering* within the holding area.

The meaning of the verb *loiter* in (17G) is 'to go slowly and stop frequently on the way somewhere', whereas in (17A) it conveys the meaning of 'to fly slowly through the holding area, waiting for landing clearance'.

(18) G: *Hold* it tight.
A: *Hold* your position for landing traffic, over. (Dimković-Telebaković 2003: 189)

In example (18G), the verb *hold* means 'to keep or support with a part of the body, esp. with the hands', and in example (18A) it has the meaning of 'to continue to fly through the holding area, waiting for landing clearance'.

3.1.6 Distinctive feature "+ / - directional movement"

Table 6 shows the categorization of the verbs of motion with respect to the distinctive feature "+ / - directional movement".

Table 6. Verbs of movement with regard to the opposition "+ / - directional movement"

+ directional movement	*take off*, *climb*, *descend*, *dive*, *sink*, *let down*, *nosedive*, *pull up*, *glide*, *pitch*, *roll*$_1$, *ascend*, *lift*, *thrust*, *approach*, *launch*, *head*, *skid*, *home in*, *loop*, *close up*, *shuttle*
- directional movement	*drift*, *yaw*

Here are examples including some verbs of motion as used in general and air traffic contexts to illustrate their semantics and pragmatics with regard to "+ / - directional movement".

(19) G: I *took off* my hat to the lady.
A: After the pilot has received clearance from the control tower, he is free *to take off*, leave the ground and rise.

The meaning of the verb *take off* in sentences (19G and A) entails upward movements, since it means '(to lift and) remove to another position' in (19G), and 'to move an aircraft upwards under its own power by which it loses contact with the earth' in (19A). An upward movement is also expressed by the verb *climb* in examples (20G and A). The meaning of the verb is 'to go or get up' in general usage, and 'to move an aircraft upwards under its own power in the air at an angle which is determined by technical limitations and safety regulations' in air traffic use. The verb *ascend* has the meaning of 'to climb, go up' in (21G), and 'to rise from a lower level or degree' in (21A). All these verbs have the feature "+ directional movement".

(20) G: It became hotter as the sun *climbed* in the sky.
A: As the pilot raised the elevators, the plane began *to climb*.

(21) G: We watched the mists *ascending* from the valley.
A: We watched the plane *ascending*.

Examples (22G and A) comprise the verb *thrust* which has the meaning of 'to push with force' and 'to make a plane move forward by moving power of an engine'.

(22) G: We *thrusted* our way through the crowd.
A: To *thrust* the plane, the pilot must produce thrust which is greater than the drag.

The meaning of the verb *glide* is 'to move (noiselessly) in a smooth, continuous manner, which seems easy and without effort' in (23G), whereas its meaning in (23A) implies a downward movement- 'to move down smoothly and continuously under the force of gravity to descend without power'.

(23) G: The toy boat *glided* over the lake.
A: When the engines do not roar and the airplane descends smoothly and continuously, the aircraft *glides*.

Example (24G) contains the verb *home in*, which has the meaning of 'to aim exactly towards', and in example (24A) its meaning is 'to fly toward a radio signal with an ADF (automatic direction finder)'. This verb takes (+) value in both sentences with respect to the distinctive feature "directional movement".

(24) G: Pigeons *are homing in*. (Dimković-Telebaković 2003: 189)
A: The plane *is homing in*.

The meaning of the verb *drift* has a figurative meaning in (25G), since the verb means 'to go through life without aim, purpose or self-control'. Its meaning in (25A) is 'level movement of an aircraft in the air sideways away from its course under the force of wind'. It is obvious that both meanings here entail a negative feature of "directional movement".

(25) G: She just *drifts* from job to job.
A: The passengers on the plane realized that the plane *was drifting*.

3.1.7 Distinctive feature "+ / - telic"

Telic verbs describe actions which are directed towards an aim. The verb *drown* (vs. *be dead*) is a telic verb, for instance, whereas the verbs *know* or *like* are atelic verbs. Telic verbs can be combined into action chains, where every verb describes a phase of an entire occurrence: *leave* → *go* → *arrive* → *be there* (cf. Hüllen 1981: 149).

Table 7 demonstrates which verbs are telic and which ones are atelic.

Table 7. Verbs of movement in regard to the opposition "+ / - telic"

+ telic	*roll*$_{1, 4}$, *crab*, *let down*, *pull up*, *ascend*, *lift*, *stretch*, *board*, *take off*, *approach*, *manoeuvre*, *go around*, *head*, *home in*, *close up*, *loiter*, *leave*, *get/arrive/ reach*, *travel*
- telic	*fly*, *roll*$_3$, *sink*, *drift*

Examples in (26G and A) illustrate that the verb *travel* has the feature "+ telic" in both everyday English and in the field of air traffic.

(26) G: We *travelled* a lot all over the country last year.
A: Louis Bleriot, a Frenchman, *travelled* the English Channel from Calais to Dover in 1909. (Adapted from Dimković-Telebaković 2009: 40)

The meanings of the verb in the above sentences are as follows: 'to go on travels as for pleasure and sightseeing, to make a trip for pleasure' in (26G), and 'to travel the oceans, to go across, to fly across' in (26A).

3.1.8 Distinctive feature "∧ / ∨ speed"

Table 8 shows how the verbs of motion are classified with regard to whether there is an increase or decrease in speed.

Table 8. Verbs of movement related to the opposition "∧ / ∨ speed"

∧ speed	*speed up / accelerate*, *dive* (increase in speed), *roll*$_1$ (increase in speed)
∨ speed	speed *slow down / decelerate*, *roll*$_1$ (decrease in speed), *stall* (decrease in speed), *abort* (decrease in speed)

When considering the issue of motion, the presence and absence of speed cannot be taken as possible oppositions, as movements always happen at certain speeds. Thus, "∧" and "∨" should be used in place of (+) and (-).

There are some verbs conveying movements performed at a maximum speed, at a constant speed, or at an economical speed. The verb *nosedive* contains the meaning of 'to come down steeply with the nose pointing to earth at the maximum speed', and the verb *cruise* 'level movement of an aircraft under its own power in the air at a practical speed' or 'to travel at that speed and altitude which is most desirable for the airplane and the flight conditions'. As different types of speed cannot be represented by binary oppositions, a solution to the problem remains to be found.

3.1.9 Distinctive feature "+ / - disrupted movement"

Table 9 groups the verbs of motion according to whether each has the feature "+ disrupted movement" or the feature "- disrupted movement".

Table 9. Verbs of movement in relation to the opposition "+ / - disrupted movement"

+ disrupted movement	*abort*, *alight*, *shuttle*
- disrupted movement	*taxi*, *roll*, *take off*, *climb*, *cruise*, *dive*, *drift*, *crab*, *descend*, *hold*, *sink*, *let down*, *nosedive*, *pull up*, *glide*, *stall*, *ascend*, *lift*, *approach*, *travel*, *go around*, *close up*, *loiter*, *fly*

The verbs *abort*, *alight* and *shuttle* include the feature "+ disrupted movement", whereas the verb *crab*, for instance, implies a non-disrupted movement. *Crab* can truly be considered a technical term here. Its meaning is 'level movement of an aircraft under its own power in the air sideways in order to neutralize drift and stay on course to compensate for a cross-wind'.

3.1.10 Distinctive feature "> / < dangerous movement"

To denote "movements which are dangerous to a greater degree and movements dangerous to a lesser degree", we substitute "+ / - normal" (cf. Hüllen 1981: 150-151) for "> / < dangerous movement". The symbols "> / <" indicate that each type of movement has a higher or lower risk of traffic accident, whereas the symbols "+ / -" signal the presence or absence of risk. To illustrate a movement that is very dangerous, we use the verb *sag*: *Changing winds made the plane* sag, meaning that the plane changed direction without its own power and that the risk of traffic accident was very high. In general English, the verb expresses a change in position which can cause a risk of falling down, such as in *The branch* sagged *under the weight of the apples*. The verb *stretch*, on the other hand, seems to convey a very low risk of traffic accident in air traffic as its meaning is 'to cause to reach or continue (as from one point to another or across a space)'.

Table 10 shows how the verbs of motion can be classified according to this distinctive feature.

Table 10. Verbs of movement with regard to the opposition "> / < dangerous movement"

> dangerous movement	*drift*, *sink*, *abort*, *ditch*, *sag*, *dive*, *nosedive*, *stall*, *flutter*
< dangerous movement	*taxi*, *take off*, *climb*, *cruise*, *let down*, *ascend*, *lift*, *thrust*, *stretch*, *launch*, *go around*, *home in*, *loop*, *pull up*

3.2 The second phase in the analysis

The second phase of this study resulted in the following semantic relations: "correspondence", "reflexive marking" and "reshifting", which are in accordance with Hüllen's (1981: 146-149) discussion, and "reflexive marking and reshifting" and "correspondence and reflexive marking", which are introduced by the author of this paper. To demonstrate these semantic relations, ten randomly selected motion verbs are examined in general English and in air traffic English in regard to the above mentioned ten distinctive features.

3.2.1 Correspondence

The semantic relation "correspondence" is established between verbs used in general English (G) and in the air traffic register (A) in cases when the subject, agentive, is an animate or inanimate being in both general and specialist use, and when verbal meanings correspond to each other.

The verb *fly* shows this correspondence. With regard to the distinctive feature "+ own energy", this semantic relation is illustrated by examples (27G and A).

(27) G: Most birds and some insects *fly*. (*Longman Dictionary* 1978: 427)
A: The French engineer Henri Giffard attached engine to a balloon and *flew* in it 17 miles from Paris to the suburbs. (Dimković-Telebaković 2009: 40)

In regard to "- movement from one place to another", the verb *rotate* as used in (28G and A) establishes the same semantic relation. The verb *rotate* has the meaning of 'to revolve, go around' in (28G), and the meaning of 'to (cause) to turn in a circle' in (28A).

(28) G: The earth *rotates* once every 24 hours. (*Longman Dictionary* 1978: 966)
A: The balloons will *rotate* at the same speed as the earth does. (Dimković-Telebaković 2003: 201)

It is significant to point out here that there are two rotation types: the earth rotates round the sun as well as round its axis.

3.2.2 Reflexive marking

The semantic relation "reflexive marking" occurs in cases when the subject, agentive of a sentence in general use, is an animate being, and when the

agentive/instrument and objective/indirect objective (dative) of a sentence in specialised use are identical. In other words, the semantic structure of sentences with verbs having the feature "+" is called "marking" in ordinary usage, and "reflexive" is related to the identity of agentive/instrument and objective/dative, which is a characteristic of the language of pilots. This means that the person who causes movements is the pilot using the power unit as instruments in such a way that energy is produced, which in turn makes the plane perform movements (Cf. Hüllen 1981: 146-147).

This semantic relation can be established in regard to the distinctive feature "+ / - ground contact", as shown in (29G and A).

(29) G: The old lady *climbed* the stairs slowly.
A: If the stick is moved backwards, the aircraft starts *to climb*. (Dimković--Telebaković 2009: 69)

Examples (30G and A) illustrate that with regard to the feature "+ directional movement" the verb *approach* establishes the same semantic relation- "reflexive marking". The verb *approach* in (30A) shows that it can be classified as a verb used in the field of air navigation.

(30) G: Tom *was approaching* a red building when a friend of his turned up suddenly.
A: *Approach* Shuttle 7R flight level 70. (Dimković-Telebaković 2003: 202)

3.2.3 Reshifting

If there is a change in the meaning of a verb when it is used alternately in general English and in specialised contexts, the semantic relation "reshifting" is established between the two uses. Examples (31G and A) demonstrate this semantic relation with regard to the distinctive feature "+ / - ground contact". The shift of meaning in *bank* goes from 'to raise a bank' to 'to incline an airplane laterally, to roll the plane sideways somewhat (e.g. when turning)'.

(31) G: They *banked* the river.
A: The pilot *must bank* when he turns a plane.

When the pilot *banks*, the wings are not level.

The verb *ditch* in (32G) has the meaning of 'to get rid of, to leave suddenly, to abandon', and the meaning of 'to make a forced landing on

water' in (32A). The examples in (32G) and (32A) suggest that there is a semantic relation "reshifting" established between the two uses of the verb *ditch* in regard to "↓ movement to non-movement transition".

(32) G: His old car stopped working and he decided *to ditch* it. (*Longman Dictionary* 1978: 319)
A: The pilot *ditched* his plane.

3.2.4 Reflexive marking and reshifting

The verb *dive* as used in (33G and A) establishes the semantic relation "reflexive marking and reshifting". The meanings of the verb in the sentences below are as follows: 'to put one's hand(s) quickly and suddenly deep into something, esp. in order to get something out' and '(of a plane) to go down steeply and swiftly'. This twofold semantic relation is established in regard to the distinctive feature "↑ speed".

(33) G: He *dived* into his pocket and pulled out a handful of coins.
A: The elevators make the aircraft *dive*, i.e., go down steeply with increasing speed.

Examples (34G and A) show that the verb *roll* establishes the semantic relation "reflexive marking and reshifting" with regard to the distinctive feature "+ under control".

(34) G: We *rolled* the barrel of wine onto our boat.
A: Planes *roll* and taxi on the ground before take-offs and landings. (Dimković-Telebaković 2003: 195)

The verb *roll* has the meaning of 'to move along by turning over and over' in sentence (34G), and the meaning of 'to move an aircraft under its own power and under control in contact with the earth over the runway, either with increasing speed for take-off or with decreasing speed after touchdown' in example (34A).

3.2.5 Correspondence and reflexive marking

With regard to the distinctive feature "+ telic", the verb *head* establishes the semantic relation "correspondence and reflexive marking" in (35G and A). The meanings of the verb *head* used in the two sentences correspond to one another. This verb has the meaning of 'to move in a certain direction' in (35G), and the meaning of 'to move towards, go to' in (35A).

(35) G: We *are heading* home.
A: F-BNTS *heading* 230 from Lambourne. (Dimković-Telebaković 2003: 203)

The verb *shuttle* means 'to move to and fro regularly' in example (36G) and 'to fly from one place to another regularly' in example (36A). In regard to the distinctive feature "+ disrupted movement", the verb establishes the semantic relation "correspondence and reflexive marking". It is important to emphasize here that the distinctive feature "+ disrupted movement" is included in these senses, although this is not explicitly articulated.

(36) G: When she's at home, she *shuttles* between the kitchen and the garden.
A: The plane *shuttles* from New York to London. (Dimković-Telebaković 2003: 188)

4. Conclusions

The results of the study confirm the hypothesis that Hüllen's (1981) three binary oppositions "+ / - own energy", "+ / - ground contact" and "+ / - telic" are necessary but insufficient to represent the internal structure of the motion verbs analysed here as they are used in air traffic English and general English. It was requisite to change Hüllen's binary opposition "+ / - normal" to "> / <" dangerous movement", because every movement in air traffic is potentially dangerous. This means that the symbols "+ / -", representing the presence or absence of risk, are not appropriate relative to this distinctive feature. The following six new distinctive features are identified: "→ / ← non-movement to movement transition or movement to non-movement transition" and "+ / - movement from one place to another", "+ / - directional movement" and "+ / - under control", and "∧ / ∨" speed" and "+ / - disrupted movement".

In regard to the classification of motion verbs in the ten tables, one can notice that the same lexemes occur in various tables. This confirms that motion verbs can have more than one distinctive feature. Further, some examples also show that certain verbs can take both "+ / -" symbols, which can be explained by the fact that verbs may signify various meanings, and can be transitive and intransitive (e.g. *ditch*, *abort*, *stall*, *dive*, *overrun* and *nosedive*). In view of these facts, one may object that the method employed here is

inconsistent. However, as the method used serves to represent the semantics of verbs, which is complex and sometimes contradictory, it is possible to claim that the modified CA suggested here is adequate to the purposes at hand, even if its unmodified version has been problematic as regards the description of speech sounds by followers of the Prague School. Ultimately, the symbols "∧ / ∨", "> / <" and "→ / ←" are only possible solutions, but the distinctive features they symbolize clearly serve the analysis of motion verbs, as the definitions of the verbs examined here demonstrate.

The analysis also shows that, besides the semantic relations "correspondence", "reflexive marking" and "reshifting" considered in Hüllen's (1981) work, the semantic relations "reflexive marking and reshifting" (e.g. (33) and (34)) and "correspondence and reflexive marking" (e.g. (35) and (36)) can be established between some verbs of movement randomly chosen out of 54 motion verbs discussed in the first phase of the study. The latter two semantic relations are identified with regard to the distinctive features "∧ speed" and "+ under control", and "+ telic" and "+ disrupted movement".

Examples (29), (30), (33), (34), (35) and (36) illustrate that there are differences in the subject, semantic differences, which cause pragmatic differences, and that agency determines verbal meanings in general and specialist use. The analysis concludes that the difference between the agentive/instrument and objective/indirect objective (dative) is absent in the language of pilots. Examples (30A) and (35A) confirm that conciseness and economy of expression are typical of aviation radio communications.

The findings of the investigation may have teaching implications, and are of relevance to ESP practitioners and ESP L2 learners, to GE teachers and learners, and particularly to aeronautical and aviation students, pilots and air traffic controllers, and air traffic engineers who are interested in communicating in English as a second language. As the paper focuses on technical and semi-technical vocabulary related to the field of air engineering, it has the potential to contribute to the elaboration of terminological entries in reference works. The inclusion of the distinctive feature "+ / - own power" in the definition of the verb *nosedive*, for instance, seems to be necessary since nosediving mainly happens without a plane's own power in civil aviation and often occurs with a plane's own power in military aviation. By analogy to the verb *dive*, we propose that the definition of the verb *nosedive* is augmented by 'under the external force of gravity or under its own power without the pilot's control' (cf. Appendix). Finally, the semantics and pragmatics of the verbs of movement examined can help us understand how the relation of

specialist language to the realities underlying it is encoded, and how such language differs from ordinary language in use. Metaphorical uses of terms are undoubtedly one of specialized language characteristics.

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Patterns of lexical collocation in sermonic texts

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ABSTRACT

This study investigated lexical word associations in sermons to establish their types, patterns and behaviour. It adopted a corpus-computational technique in which 200 actual sermons were built into a corpus and compared to a reference corpus of contemporary English as a measure of normality. Data were analysed partly by computer techniques. The concord tool of Wordsmith 5 (Scott 1999) was used to specify the patterns of collocation of selected keywords while the statistical tools, log-likelihood test and mutual information score were applied to measure the reliability and validity of the results. The results showed significant differences in the collocation of words in the sermons and in other contexts: in associations, patterns and behaviour. In particular, different sets of collocates were retrieved for each of the selected items, new patterns of association were discovered and the words manifested a downward collocating style. The study recommends that new evidence revealed in lexical research such as this be incorporated into linguistic descriptions.

1. Introduction

The need to investigate the behaviour of English lexis in the specific context of religion is echoed by Crystal – Davy (1969), and Crystal (1995), who point out that the collocational idiosyncrasies which occur in religious English provide a discussion point in their own right. Claridge – Wilson (2002) also note that the sermon genre is interesting because it occupies the crossroads of orality and literacy. Yet sermons, as communicative events, have so far attracted very little linguistic attention. The paucity of research information on the linguistic significance of sermons is clearly evidenced by the minimal literature about it. So although mention is made of the distinctiveness of this genre, little effort has been made to investigate this claim by using a sermon

corpus against the background of a reference corpus, to reveal specific differences in the character of English lexis. This study is a step in filling this gap. This investigation- of the behaviour of English lexis in the context of Christian sermons- will serve the primary functions of illuminating this particular language event, enhancing its understanding, and contributing to our knowledge of language as a system.

The lexical investigation of meaning has led to the development of various theoretical positions on the subject. The three major ones, according to Cruse (2000), are: the componential approach, in which word meaning is viewed as a construction of smaller invariant units; the contextual approach, consisting of a) the holist view which holds that word meaning needs to be finitely specified independently of other words in the language. This idea is in direct contrast to b) the holistic view that the meaning of a word cannot be known without taking into account other words in its environment; and the conceptual approach, which defines the meaning of a word relative to the concepts it gives access to in the cognitive system.

This study is predicated on the holistic view, pioneered by Firth (1935-1951), and whose focus is the syntagmatic sense relations of words. This is understood to mean the collocational preferences or restrictions in language. It is on the basis of this behaviour that Firth argues that this phenomenon characterizes a level of language at which meaning is dispersed, the lexical level that is, and proposes it as an independent level of linguistic description alongside others. After Firth, this argument has garnered more strength through the works of: Sinclair in particular (1987, 1991, 1998, 2004); Halliday (1966, 1991); Stubbs (1993, 1996, 2002); Lewis (1993, 1997); and many others. The essential point is that language comprises lexical units which share horizontal or syntagmatic relations, such that the meaning of one is included in another or completed by another in its linguistic context, and this manifests as a major way through which meaning arises from text.

2. Conceptual background

2.1 Lexical patterns

A pattern is considered here as phraseology which frequently associates with a word or lexical item. This could be prepositions, groups or clauses that accompany a given word (Hunston – Francis 2000). Patterns and lexis are mutually dependent because each pattern is composed of a restricted set of lexical items, and each lexical item has a restricted set of patterns.

A pattern is closely associated with meaning in that different senses of words are distinguished by their patterns of occurrence and words which share a pattern tend also to share a meaning. Phraseology, then, can refer to the grammatical pattern which belongs to a word, and every word has its own pattern. A parallel idea to the one above is the phraseology of lexis, lexical patterns which account for the combinatorial tendency in language (Lyons 1981). This means that most language is a construct, not from *basic* structures and the lexicon, but from sequences of pre-arranged, pre-constructed or formulaic language (Sinclair 1998, 2004). When we speak of patterns in this sense, reference is made to patterns: of word co-occurrence, of collocation, and in text- textual patterns- and their implications for meaning. In this context then, a pattern describes the behaviour of a lexical item as evidenced in our data of language use. The axes of patterning are word, idiom (phrase) and collocation, which for the purposes of this study we shall call the *units of lexis*. Collocation is the focus of this study.

2.2 Collocations

Collocation has been variously defined: as a relation of the probable co--occurrence of items (Malmkjaer 1991); "actual words in habitual company" (Firth 1957: 14); the co-occurrence of two or more words within a short space of each other (Sinclair 1991); the associations a word acquires on account of the meanings of words in its environment (1991); and the relationship a lexical item has with items that appear with greater than random probability (Hoey 1991). What resonates from all the definitions is the idea of association- that words prefer the company of some words rather than others.

It would seem then that collocation encapsulates the lexical item and its structures, that is, its patterns or phraseologies. It is in this extended sense that the term is used in this study- as a unit of language description parallel to the lexical or syntagmatic level of language. This is a substantive level of language which creates meaning, by the systematic association of words with certain other words.

3. Methodology: Model of extended lexical units and corpus method

The study utilised the model of lexical description proposed by Sinclair (2004: 29, 141) which presents five categories of description of any lexical item, two compulsory, three optional. The obligatory components are "the core, invariable evidence of the occurrence of the item … and the semantic

prosody which is the determiner of the meaning of the whole". The optional categories serve to fine tune the meaning and cohesion of a whole text: collocation, colligation and semantic preference. In describing the lexis of sermons, this study utilized two of the categories: the *core* – the node word which is the invariable occurrence of a lexical item and *collocation* – the co-occurrence of words with no more than five intervening words.

As a further methodological basis, the study utilised a corpus-linguistic approach. Data for this study were sourced from two corpora. 200 sermons which were carefully selected for investigation were classified into twenty-five categories to form 25 sermon fields or data files. Each of the twenty-five files contains an equal number of sermons, i.e. eight sermons per text file. These constitute the main corpus which was named *Nigerian Sermons Corpus* (*NSC*), and consists of 64,851 running words. All the sermons were written in contemporary English and published between 2004 and 2007.

Second, the *British National Corpus* (*BNC*) condensed sampler version was used as the reference corpus. This version contains two million words, a million words each of spoken and written English; this is labelled *BNC Sampler* (*BNCS*). These corpora- *NSC* and *BNCS*- were then exploited and manipulated to derive the exact data for the analyses. First, the combined text was converted to plain text and, second, using the lexical software Wordsmith, both the frequency and keyword counts were obtained. Wmatrix software (Rayson 2008) was then applied to verify the results.

3.1 Population and sampling

The research population is made up of eight hundred published Pentecostal sermons. In the publications, there are twenty-five dominant topics. These became both the basis for the stratification of the sermons into text types and the guide for sampling. Because of the nature of sermon texts, it was impossible to take equal samples in terms of number of words since the sermons were of unequal lengths. So the criterion of sampling full sermon texts, which Halliday (1991), Sinclair (1991) and Biber – Conrad – Reppen (1998) recommend for the investigation of textual and association patterns, was adopted. Also, the selection of full sermons was necessary in order to widen the scope of search.

3.2 Significant collocations

Since the major objective of this study is the identification of the structural patterns of words- collocations in particular- a statistical measure was

required to identify which co-occurrences are significant. This was done using the formulae of mutual information score because it is compatible with the WordSmith 5 software tool chosen for the study. The mutual information score between any given pair of words compares the probability that the two occur together as a joint event (because they belong together) with the probability that they occur individually and so their co-occurrence is merely a factor of chance. The more strongly connected two items are, the higher their mutual information score, but if there is low-level co-occurrence, the mutual information score will be a negative number (McEnery – Wilson 1996).

3.3 Choice of sermon keywords for analysis

A selection of keywords was made for analysis using the criterion suggested by Berber-Sadinha (1999): selecting either a simple majority (half + 1), or a significant subset (using a test of significance). The latter option is chosen in this instance. Some key words, out of the ones identified, were chosen based on their degree of statistical significance. Still, the number remained high, so manual grouping according to themes was done and then words drawn from them for further analysis. In Tabs. 1 and 2 below are shown the first and final selections made for analysis.

Table 1. The typology of sermon keywords

N	Historical words	Qualities and activities words	Commonly used specifically religious words	Technical words	Words used in religion and in other registers
1	2	3	4	5	6
1	God	Love	Heaven	Watchman	Spirit
2	Jesus	Power	Anointing	Sacrifice	Wisdom
3	Bible	Prayer	Jehovah	Flesh	World
4	Abraham	Healing	Devil	Blood	Man
5	Christians	Praise	Miracle	Body	Knowledge
6	Christ	Truth	Brethren	Word	People
7	Manna	Confession	Covenant	Ministry	Heart
8	Israel	Mercy	Sin	Tongues	Speak
9	Church	Godliness	Believer	Sow	Life

1	2	3	4	5	6
10	Ark	Glory	Hell	Fruit	Promotion
11	Satan	Faith	Seedtime	Sword	Name
12	Gospel	Patience	Testimony	Ministry	Walk
13	Crucified	Forgiveness	Demon	Message	You
14	Salvation	Worship	Satan	Seed	Victory
15	Pharisees	Counsel	Grace	Wilderness	Works
16	Pharaoh	Obedience	Hallelujah	Harvest	Virtue
17	Nazareth	Holy	Saviour	Gospel	Prosperity
18	Disciple	Great	Revelation	Scripture	Poverty
19	Resurrection	Righteousness	Lord	Saved	Father
20	Genesis	Boldness	Judgement	Challenges	Wealth

From this table, a total of twenty lexical items were randomly selected for analysis as shown in Tab. 2 below.

Table 2. Lexical items selected for analysis

N	Historical words	Qualities and activities words	Commonly used specifically religious words	Technical words	Words used in religion and in other registers
1	God	Mercy	Miracle	Word	Life
2	Salvation	Faith	Anointing	Fruit	Walk
3	Christians	Love	Sin	Saved	Name
4	Crucified	Praise	Covenant	Challenges	People

4. Analysis

The purpose here is to identify those words which habitually occur with the sermon keywords, and to describe their patterns of combination to underline any peculiarities in their behaviour in this context. In order to reduce the robustness of this paper, only an example analysis of the collocational behaviour of a category of sermon lexis is presented here, and in comparison to their behaviour outside the sermon context.

4.1 Sample analysis of the personal qualities and activities keywords

The four keywords in this group- *love*, *praise*, *faith and mercy*- are shown in the table below to confirm their keyness status, and to indicate the extent of their spread in the texts.

Table 3. Keyness and dispersion

KEYWORD	FREQ. 1	C %	FREQ. 2	RC %	KEYNESS	P VALUES	DISPERSION
Love	105	0.16	486	0.02	203.890	0	0.311
Praise	19	0.03	16	0	84.06	0	0.719
Faith	186	0.29	88	0	947.41	0	0.598
Mercy	14	0.02	38	0	38.6	0	0.64

All four items represented in this group demonstrate higher frequencies in the sermons than in general English. This is proved by their relative frequencies in both corpora. For example, *love,* which has a frequency of 105 in *NSC* and 486 in *BNCS*, accounts for 0.16% of the sermons, while it accounts for only 0.02% of general English, proving it is more important to sermons than to general English. The other words do not have a sufficient number of occurrences and so lack any proportional percentage rating in *BNCS* to validate their keyness status in *NSC*.

The dispersion ratings for each of these words show that only *love* is unevenly spread in the sermon texts. So although *love* has the highest keyness value, it manifests the lowest dispersion to show that dispersion is only based on textual spread. In the following table we shall see other keywords which co-occur with these key keywords in a number of texts, called associates.

Shown above are those words that associate with the main keywords, because they are also keywords in the same texts. *Faith* demonstrates more productivity in this regard. Each of the sets of words forms a clump which gives information about the keyword. Take *faith* as an example; its associates seem to suggest that it is religion based. The words differ appreciably in the nature of associates they have to support the individuality status of each keyword.

Table 4. Associates

Faith		Love	Mercy	Praise
God	Healed	Supernatural	Sin	Spiritual
God's	Blood	Thee	Sins	Spirit
Your	Corinthians	World	Righteousness	You
Unto	Christ	You	Spiritual	Word
Holy	Condemn	Your	Of	Your
Life	Accuse		Says	
Word	Scripture		Yourself	
Romans			Romans	
Jesus			Spirit	
Spirit			Unto	
Says			Word	
Hath			Your	

We shall now examine these words to identify words which collocate with them, within our specified span of five words on either side. The table below shows the top 20 collocates found for each of the node words.

Table 5. Top 20 collocates

Mercy	Love	Praise	Faith
1	2	3	4
Abundant	Manifest	Naked	Produced
Abounding	Receiving	Celebration	Application
Mercy	Hearkening	Praise	Versus
Cries	Love	Tower	Faith
Merit	Unchangeable	Rejoiced	Eleven
Sprinkle	Conquers	Sweating	Concept
Obtain	Sincerity	Profusely	Impart
Cover	Reaffirmed	Rising	Conquering
Toward	Wound	Continual	Subdues
Merciful	Testify	Sacrifice	Starting
Seat	Translation's	Continually	Adding
Deeds	Emulate	Worship	Outlandish
Nevertheless	Universal	Thank	Lastly
Forgiveness	Reciprocate	Offer	Bile
Animals	Expresses	Glorious	Lick
Behalf	Fickle	Glory	Hopelessness

1	2	3	4
Song	Ultimate	Strong	Erring
Grace	Responses	Refuse	Emulate
Devil's	Surpasses	Flesh	Proving
David	Compared	Greater	Respect

Once again, it is observed that each word has its own class of collocates and there do not seem to be overlaps in these classes. From these lists therefore we can derive such collocations as *abundant mercy*, *abounding mercy*, *mercy cries; manifest love*, *unchangeable love*, *candid love; strong praise*, *glorious praise*, *praise sacrifice;* and *conquering faith*, *outlandish faith* and *produces faith*. In the following section, the strength and directionality of these collocations will be assessed.

Table 6. Strength and directionality of collocation in *NSC*

Word	with	Mi	Word	with	Mi
Hearkening	Love	10.27	Application	Faith	9.446
Love	Love	9.284	Versus	Faith	9.446
Surpasses	Love	9.271	Produced	Faith	9.446
Tempered	Love	9.271	Faith	Faith	8.536
Purge	Love	9.271	Eleven	Faith	8.446
Responses	Love	9.271	Engaged	Faith	8.446
Compared	Love	9.271	Erring	Faith	8.446
Compassion	Love	9.271	Grant	Faith	8.446
Works	Love	9.271	Finisher	Faith	8.446
Emulate	Love	9.271	Exact	Faith	8.446
Word	with	Mi	Word	with	Mi
Naked	Praise	11.74	Cries	Mercy	12.18
Celebration	Praise	11.74	Abundant	Mercy	12.18
Praise	Praise	11.74	Mercy	Mercy	12.18
Tower	Praise	11.74	Merit	Mercy	12.18
Rejoiced	Praise	11.74	Sprinkle	Mercy	12.18
Sweating	Praise	11.74	Abounding	Mercy	12.18
Profusely	Praise	11.74	Obtain	Mercy	11.18
Rising	Praise	11.74	Merciful	Mercy	11.18
Continual	Praise	10.74	Cover	Mercy	11.18
Sacrifice	Praise	9	Toward	Mercy	11.18

As can be seen above, *hearkening*, *naked*, *application*, and *cries* are among the first 10 words which strongly associate with each of our search words. This is authenticated by the mutual information scores of: 10.27 for *hearkening love*; 11.74 for *naked praise*; 9.446 for *application faith*; and 12.18 for *mercy cries*. To assess the strength of this relationship requires us to determine the reciprocity of this association by examining how the search words themselves relate to these other words. The results show that in all cases there is no reciprocity in the strength of association because, although the search words also collocate with these words, they collocate with very many other words. So the strength is unequal. The search words are therefore weaker since they are freer and less predictable in their behaviour and in each case the direction of collocation is shown to be downward. The results are summarized in the following table.

Table 7. Collocation strength

NODE	FREQ.	NO. OF COLL.	NODE	FREQ.	NO. OF COLL.
Hearkening	1	9	Love	105	269
Naked	1	10	Praise	19	74
Application	1	10	Faith	186	252
Cries	3	19	Mercy	14	72

4.2 Phraseology

Each of the four sermon words selected in this group demonstrated the ability to form multi-word items of various lengths. Among these, the dominant patterns identified seem to be N + V, N + N, V + N, and ADJ + N. For example, *faith filled*, *faith inspired*, *weak faith*, *love conquers*, *love based*, *love God*, *praise God*, *praise sacrifice*, *praise worship*, *mercy cries*, *abundant mercy*, and *mercy deeds.* From the three- and four-word structures, the dominant patterns seen are in prepositional phrases or noun phrases; for example, *love of God*, *faith in God*, *praise to God*, *and mercy on us* and *praise be to God.*

5. Discussion of results: The patterns of collocations in the sermons

For each of our search words, collocates were found in large numbers. However, because we are constrained by both space and time it became

necessary to select a sample for closer examination. For each keyword therefore, the first 50 collocates, sorted on their mutual information (MI) scores, were retained; these are those words that are most strongly associated with the keywords such that they are highly primed to co-occur. Our discussion here will centre on the behaviour of the keywords selected for in-depth study, in terms of the collocations they form- their strength, directionality and phraseology- to underline peculiarities in comparison to general English.

Each of the twenty keywords demonstrated a very high tendency to co-occur with certain words, each manifested a high association strength (an MI score of 7 or above), proving that they are very much attracted to each other and, as such, are confirmed collocates of the nodes. However, the results show that when placed on the collocation strength clines of strong, medium and weak, all but one of them illustrated weak collocating strength, showing that there is lack of reciprocity in the degrees of association since they are unpredictable in their partners and so are unreliable as indicants of fixed meaning. It was also seen that each establishes its own individuality in that each has more or less its own class of collocates, as was the case with their associates. At the same time, there was more or less uniformity in the collocating style of the nodes: a downward collocating pattern in which the node chooses collocates less frequent than itself.

The implication is that each word derives meaning from its immediate environment, defined by the words constantly in proximity to it. Therefore, the contextual meaning of a word is a function of its co-text, its syntagmatic relations rather than a function of choice alone, by paradigmatic means as standard grammars hold. This confirms Firth's assertion that meaning inheres the horizontal plane of language, and bears out previous research found in the literature of lexical studies, for example, Halliday (1991), Sinclair (2004), Stubbs (2002), Hunston (2002), and Biber (1999). Some examples of the collocations found in the sermons are *God partner*, *Christians testify*, *Lord crucified*, *salvation tragedy*, *praise God*, *salvation helmet*, *love responses*, *rising praise*, *faith heroes*, *mercy deeds*, *forbidden fruit*, *sin saved*, *joyful challenges*, *soil word*, *prophet anointing*, *root sin*, *miracle seed*, and *victorious walk.*

In terms of phraseology or patterns, the study shows that the keywords exhibit both grammatical and lexical patterns. However, our interest is in the lexical patterns, to investigate constancy and peculiarity. Ten (10) major patterns of collocation were found as shown in the table that follows.

Lexical collocations are formed from combinations of lexical word classes: nouns, verbs, adverbs and adjectives; and Benson – Benson – Ilson

(1997) identified 7 types as: V+N/P/PP; V+N; ADJ+N; N+V; N1 of N2; ADV+ADJ; and V+ADV. Of these, the first five were found in the sermons while the last two were not; rather, some other kinds of collocation structures occurred, for example, N+N, ART+N, NP, V+V, and V+NP. The results call for extension of the index of lexical collocation types to accommodate the ones revealed in the study.

Table 8. Structural types of collocations found in the sermons

S/n	Collocation Structure	Examples of Collocations
1	ADV + N	Forbidden Fruit, Heavy Anointing, Abundant Mercy, Continual Anointing
2	N1 of N2	Kingdom of God, Agent of Salvation, Word of God, Blood of Jesus
3	V + V	Confesses Saved, Baptized Saved, Recorded Crucified, Redeem Crucified
4	V + N	Seek Salvation, Praise God, Conquering Faith, Committing Sin
5	V + NP	Take the Helmet of Salvation, Receive your Salvation, Praise the Lord
6	N + V	Faith Subdues, Prophet Anointing, Grace Saved, Praise Offer
7	N + N	Mercy Deeds, Faith Heroes, Trials Challenges, Substance Fruit
8	ADJ + N	Strong Praise, Universal Love, Rich Mercy, Backslidden Christians
9	ART + N	the Anointing, a Believer, a Watchman, the Faith, the Word
10	NP	the Body of Christ, the Kingdom of God, the Name of Jesus

5.1 Result of collocation analysis in *BNCS*

The examination revealed the dissimilarities between collocates in these groups and those in *NSC* and immediately pointed to different usages. It became obvious that we could not hypothesize the same attitudinal meanings for these words in this context. This suggests that these words differ significantly from general English words and may characterize only sermon texts. We find that the asymmetry between collocates of each word in both contexts is overwhelming. For example, each word manifested a difference in meaning and, as a consequence, in the words that co-occur with it. For instance, *love* was predominantly used in a personal, natural sense; *faith* was used to mean general belief in anything including the public confession of

faith; *praise* was used to refer mainly to personal praise or approval; and *mercy* was used to indicate human and political mercy (pardon). As expected therefore, their collocates also differed in both contexts to confirm our earlier conclusion that definite behaviours characterize lexical items in different contexts of use.

6. Findings

The analyses revealed differences in the usage of words in the sermons and in general English: in associations, patterns and behaviour. In the first place, the words examined portrayed noteworthy differences in the kinds of words they co-occur with: different sets of collocates were retrieved for each of the selected items in sermons and outside of sermons. Therefore, different usages were posited for them.

In terms of patterns, the study showed 10 main kinds of patterns of word combination: 5 out of the 7 lexical collocation types known to occur in general English were found, and another 5 types, uncommon in ordinary usage, were also found. This suggests that, beyond meaning relations, patterns of collocation may distinguish texts, in addition to leading to some generalisations in language.

We find then that the previous knowledge of patterns of lexical collocation is extended by our results, and this constitutes essential information for the learner and teacher of English as a second language.

In terms of behaviour too, notable differences were recorded. All but one of the examined words showed weakness in collocational strength and all manifested downward collocation to illustrate the non-fixedness of word meaning and the importance of the immediate environment (co-text) in meaning making. So the principle of co-selection of lexis, which avoids lexical dissonance or semantic clash (Cruse 2003), was supported by the results.

7. Implications

As the findings show, the sermon words collocated with sets of words different from their usual collocates and formed new structures of combination. The implication of the unknown collocations found is that new shades of meaning will emerge which did not previously exist and as such the collocations need to be taken into account in linguistic description when their meanings will

enhance understanding of sermon communications both for its immediate and extended hearers. Also, findings on the behaviour and patterns of English words constitute vital information for non-native speakers of English (Scott – Tribble 2006). This is so because it enables them to know not only what is grammatically possible in the language, but also what is appropriate and what happens in specific contexts. Therefore, knowledge of lexical patterns, like those provided in this study, has great import for the achievement of communicative competence.

8. Conclusion

The study has revealed the different character of English in sermons. This would have been impossible without the evidence provided by the sermon corpus. In view of the findings, the study recommends that future descriptions of English take cognisance of the new evidence provided by corpus research, especially in the area of lexical patterning. In order to enhance the pedagogic value of lexical research, further studies should build on the present state of lexical research, by going beyond the presentation of knowledge of lexical structures or patterns to establish general conclusions concerning the uses of the various forms.

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Analogically-driven strong and weak verb transformations in the history of English: The role of synonyms

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ABSTRACT

It is well known that many strong verbs became weak verbs in the history of the English language. A reverse process, whereby weak verbs became strong verbs, is also known. In this article, I will examine the important role synonymous verb forms played in driving these changes. The analogical extension of a form from one type to another is most likely influenced by the form's co-occurrence with other phonetically or semantically related forms (Bloomfield 1933: 409). Considering the central role that semantic similarity plays in driving analogical change, I present a series of detailed case studies on individual verbs and argue that synonymous verb forms were a primary factor in the transfer of verbs from the strong to the weak conjugation and vice-versa.

1. Introduction

The aim of this article is to investigate the influence of synonyms on the transition of English verbs as related to analogy: "a process whereby one form of a language becomes more like another with which it has some association" (Arlotto 1972: 130). Old English (OE) verbs are traditionally divided into two main types, weak and strong. Weak verbs employ dental consonants in the final position to mark the past tense and the past participle; strong verbs, on the other hand, express tense distinctions by means of vowel gradation without the presence of a dental marker. The most common type of change, i.e., the transformation of strong verbs into weak verbs, sees a significant increase from the 13th to 15th centuries, the peak of which was reached in

the 14th century, according to the data from the *Oxford English Dictionary* (*OED*) and Krygier's work (1994: 247). As the past tense was easier to form with weak verbs than with strong verbs, it is likely that the strong-to-weak transfer is related to the simplicity of the verbal system. The opposite development – the transfer of weak verbs to strong verbs – is less frequent and has received but scant attention from most scholars, with the exception of Wełna (1997). In this paper, I will consider the influence of synonyms on both directions of change.

Before entering into the main discussion, let me briefly review some of the previous literature on these issues. Ever since the idea that languages change as a result of borrowing, analogy, and sound change was formulated by Paul (1898) in his *Prinzipien der Sprachgeschichte*, most scholars (e.g., Brook 1958; Myers 1966; Bambas 1980; Wełna 1991, 1997, etc.) have claimed that analogy is involved in the transformation of English verbs. Although these scholars tend to treat analogy as if it were the only relevant intrasystemic factor, there is little explanation as to how exactly this mechanism functioned. Other scholars (e.g., Wright – Wright 1928; Fries 1940; Mossé 1952; Bloomfield – Newmark 1963, etc.) focused on either the listing of new analogical forms or the chronology of the transformations without attempting to reveal their causes. For this reason, I decided to investigate in more detail the role analogy may have played in the change of some English verbs.

Some scholars (Kaluza 1900-01 [1906-07]; Michelau 1910; Long 1944; Brunner 1951; Newfield 1983; Wełna 1991, 1997; Krygier 1994) analyzed other factors which may have been responsible for such verb shifts. Especially worth mentioning in this area is Krygier's comprehensive study on the English strong verb system. Kaluza began research into some of the phonological processes in the Middle English (ME) period as factors in this change. Michelau, on the other hand, proposed several parameters: the influence of a coexisting etymologically-related weak verb on its strong counterpart, the shift to the weak conjugation for dental-final verbs (with reference to Bülbring's (1889) study), the relation between ablaut and the shift, as well as Old Norse (ON) and Norman French (NF) influences. Most scholars cited above followed many of Michelau's ideas. Exceptions include Long, Brunner, and Krygier, who presented other factors such as the effect of a related ON verb, the irregularity of ablaut patterns, and the disintegration of certain ablaut series. Since every linguistic change involves at least some degree of choice, the probability of multiple conditioning must constantly be borne in mind (Samuels 1972: 3). In this light, it is likely that, depending on the period, different combinations of factors may have contributed to

the transfer of verbs. As a whole, further research into causes of the transfer other than analogy will be necessary in the future.

The reason why I draw attention to synonyms in this study is that, as far as I have been able to ascertain, the role of synonyms has rarely been examined by historical linguists. For example, Brunner (1951: 183) suggests that the coexistence of etymologically related strong and weak verbs with different but similar meanings (e.g., pairs of intransitive strong verbs and transitive weak verbs) gave rise to a blurring of this distinction in meaning, which then led to their forms being mixed up as well. This was not included in the main body of Brunner's discussion, but as a side-comment as to how other factors might be linked to the transfer of verbs. Krygier also mentions the impact of weak congeners on the shift, but their full effect could not be assessed because of many uncertainties accompanying the issue, such as the number of strong verbs, the number of their weak counterparts, and the degree of relationship necessary to trigger the shift (1994: 252). Therefore, this study will seek to shed some light upon on this issue.

2. The role of form and meaning in analogical change

Analogical change involves a relation of similarity (Anttila 1989: 88) which can be represented in an equation of the form $A : B = C : X$, i.e., *A* is to *B* as *C* is to *X*. Through this formula one can solve for '*X*', but only in those cases which fit the pattern. It is important to note that the sets on both sides of the equation are not limited to two members. Traditionally, two subtypes of analogical change are distinguished: levelling and extension. Levelling is a process which causes paradigms to become more uniform by eliminating alternations in forms. Some strong verbs have been levelled to the weak verb pattern, such as, *help*, a strong verb, whose past tense (PT) form *healp* and past participle (PP) *holpen* were replaced by *helped*. Extension, the opposite of levelling, is a process which increases irregularity in a paradigm by replacing a regular pattern with an irregular pattern due to its similarity to an existing pattern, as is the case with *dive*, a weak verb, whose PT form *dived* was superseded by *dove* on analogy with strong verb patterns like *drive / drove*, *ride / rode*, *write / wrote*, and so on.

Let me turn now to the role of meaning and form in analogy. Paul (1898: 96) remarked that individual words may attract each other due to a partial correspondence of meaning between them. Different words with a similarity in meaning can cluster into groups, and then a new form may be

created on the basis of these groups. Thus a word is subject to the influence of analogy with other semantically similar words. In addition to semantics, phonetic similarity may also play an important role in analogical change. Bloomfield suggested that "the extension of a form into a new combination with a new accompanying form is probably favoured by its earlier occurrence with phonetically or semantically related forms" (Bloomfield 1933: 409). For example, in *kine* and *cows*, the former is an obsolete plural form of *cow* and the latter is an analogically-created form. *Cows* can be represented by the following proportions: *sow* : *sows* = *cow* : *X*; *sow* : *sows*, *heifer* : *heifers*, *ewe* : *ewes* = *cow* : *X*, where in both examples *X* is solved with *cows*. The former equation illustrates analogy based on phonetic similarity, the latter on semantic similarity.

As for phonetic relations, in a previous paper (Yoneda 2010), I showed that rhyme in poetry can be associated with analogy through a closer look at syllable structure in English. As similarity of sound played an important part in analogy which contributed to the transfer of verbs, it is natural to think that a word with a similar meaning could have an impact as well. Hence it is necessary to test this hypothesis through a series of detailed case studies on individual verbs.

3. The effect of synonymous words on the conjugation type of verbs

The Bible in English is as old as the recorded history of the English language. Many biblical passages came to be associated with a gloss in connection with primarily the Latin Bible, the Vulgate (Vg). Biblical texts are useful sources for understanding language change because they allow us to trace a language's continual change in written records.

Here I will briefly touch on the practice of glossing and translation. Glosses are explanations, usually brief, of difficult words or expressions in a text, typically written in the margin or between the lines of the text; glossaries are collections of glosses, drawn together for easier reference (Szarmach et al. 1998: 316). The purpose of producing English glosses of the Latin Bible was to teach the Christian faith especially to young oblates or novices whose understanding of Latin was inadequate. As Greenfield – Calder (1986: 6) state, "[…], the beginner would first have committed the Latin psalter to memory. His teacher would have aided memorization by means of literal explanations: hence, presumably, the complete OE interlinear glosses of Latin texts in many Anglo-Saxon psalters".

In producing the English texts, the scribes were faced with a task familiar from the production of Bible translations. Ælfric, who is believed to have been a monk in Dorset and Oxfordshire and who did many translations of Greek and Latin texts, states his policy for translation in *Grammar* as follows (Zupitza 1880: 1 [trans. Wilcox 1994: 130]): "I know it is possible to translate words in many ways but I follow a simple translation for the sake of avoiding putting off the reader". Clemoes (1966: 187) also notes: "Always he [Ælfric] omitted, transposed or added to his original to suit the audience for which his work was intended. […] In general, as he states in his prefaces, he condensed. Whenever he could he simplified and explained difficult material […]". It seems likely that the translators' lexical selection underwent changes in the wake of the semantic changes of the times. Thus, it is worth examining how OE equivalents of Latin words differ among various manuscripts or versions in order to discuss the transfer of verbs.

3.1 The verbs *slǣpan* and *hnappian* in OE

To address the question of why the strong verb *slǣpan* became weak in OE, the following case study will focus on OE, ME, and EME translations of the Latin verbs *dormīre* 'to sleep, to rest, to be at ease, inactive', *ob-dormīre* 'to fall asleep' and *dormitāre* 'to be sleepy, drowsy, to begin to sleep, to fall asleep', referring to the OE Gospels (*Li*, *Ru1*, *Ru2*, *WSCp*)[1], Psalter manuscripts with OE Glosses (A, B, C, D, E, F, G, H, I, J, K, L, P, PPs)[2], and English versions of the entire Bible (*WycE, WycL*, *Ty*, *Cov*, *GB*, *Mat*, *BB*, *Gen*, *AV*)[3]. The *Douay-Rheims* Bible (*D-R*) is used as an EME reference for comparison.

An Anglo-Saxon Dictionary: BT (Bosworth & Toller 1989) shows that these Latin words are typically rendered as *-slǣpan*, *swefan*, *hnappian*. *-slǣpan* 'to sleep' belongs to the OE strong verb class VII, and has a number of

1 *Li*: *Lindisfarne Gospels*, 10th c., Northumbrian; *Ru1*: *Rushworth Gospels* (all of *Mt*, *Mk* 1-2.15, *Jn* 18.1-3), c. 7th c., Mercian; *Ru2*: *Rushworth Gospels* (remainder), 8th c. Northumbrian; *WSCp*: The Corpus Gospels, West-Saxon.

2 A: *Vespasian Psalter*, 8th c.; B: *Junius Psalter*, 1st half of 10th c.; C: *Cambridge Psalter*, mid 11th c. or shortly after 1000; D: *Regius Psalter*, 10th c.; E: *Eadwine Psalter*, ca 1155-1160; F: *Stowe Psalter*, mid 11th c.; G: *Vitellius Psalter*, ca 1060; H: *Tiberius Psalter*, mid 11th c.; I: *Lambeth Psalter*, 1st half of 11th c.; J: *Arundel Psalter*, 2nd half of 11th c.; K: *Salisbury Psalter*, ca 975; L: *Bosworth Psalter*, 2nd half of 10th c.; P: *Paris Psalter*, 1170-1200, PPs: a metrical version of Psalms 51-150 (cf. Pulsiano 2001).

3 *WycE*: *Wycliffe Bible, earlier version*, 1382; *WycL*: *Wycliffe Bible, later version*, 1395; *Ty*: *Tyndale Bible*, 1534; *Cov*: *Coverdale Bible*, 1535; *GB*: *The Great Bible*, 1540; *Mat*: *Matthew's Bible*, 1549; *BB*: *The Bishops' Bible*, 1568; *Gen*: *The Geneva Bible*, 1587; *D-R*: *Douay-Rheims Bible*, 1609-10; *AV*: *Authorized Version*, 1611.

slightly different forms and meanings: *a-slāpan* from *slǣpan* 'to be sleepy, to begin to sleep, to fall asleep'; *on-slǣpan* 'to sleep, to fall asleep'; *be-slǣpan* 'to sleep'; *be-slēpan* 'to slip, lay, place, put'; *slāpian* 'to cause to sleep'. *Swefan* 'to sleep, to slumber, to rest' belongs to the OE strong verb class V and is related to the weak verb *ge-swefian* 'to cause to sleep, to cast to asleep, to lull, to appease'. *Hnappian* 'to slumber, to sleep, to doze' belongs to the weak verb class II, and its present meanings 'to sleep lightly or for a short time, to get drowsy' only appear later. It appears that *hnappian* had a meaning similar to *slǣpan* in the OE period. The *OED* describes *hnappian* as "formerly in more dignified use than at present, being frequently employed in renderings of Biblical passages" (*OED*, cf. NAP). Biblical texts are useful sources for the study of how such words are used. The English noun 'sleep' is commonly used for 'natural sleep', and also the figurative sense of 'eternal sleep', that is, 'death'. It should be possible to see whether the OE equivalents of these Latin words are distinguished in their literal and figurative usages.

In the Gospels, there are 24 instances of the Latin words *dormīre* (22 times: *Mt* 8.24; 9.24; 13.25; 25.5; 26.40; 26.43; 26.45; 27.52; 28.13; *Mk* 4.27; 4.38; 5.39; 13.36; 14.37; 14.37; 14.40; 14.41; *Lk* 8.52; 22.45; 22.46; *Jn* 11.12; 11.12), *ob-dormīre* (once: *Lk* 8.23) and *dormitāre* (once: *Mt* 25.5), and all instances of *dormīre* and *ob-dormīre* are rendered as *slǣpan*, whereas only *dormitāre* is glossed either as *slǣpan* or *hnappian*. As a gloss for *dormīre* used in the figurative sense, *slǣpan* is found five times: *Mt* 9.24; 27.52; *Mk* 5.39; *Lk* 8.52, and *Jn* 11.11. There is no distinction in the choice of OE equivalents of Latin words as far as literal or figurative usage is concerned.

As shown in (1), the gloss or translation for the Latin *dormitāre* is inconsistent among the numerous versions: *slǣpan* in *Li* and *Ru1*, but *hnappian* in *WSCp*, *WycE*, and *WycL*, and *slumber* in the rest of the versions from *Ty* to *AV*. This new expression appears in *Ty*, and as this is mostly followed by the rest of the versions, it seems natural to conclude that *Ty* had a great impact on following translations. Therefore, in this paper I only cite the example from *Ty*. The Latin *dormīre* is glossed as *slǣpan* in all versions with the exception of *Ru1*. Let me point out some other things: most of the versions seem to avoid the combined use of same glosses, weak forms of *slǣpan* appear in Anglian (i.e. Mercian and Northumbrian) texts while strong forms remain in *WSCp*, weak forms of *slǣpan* are observed in *WycE* and *WycL* the new expression slumber appears from *Ty* onwards. Some of these features can be observed in (2).

(1) *Mt* 25.5 …**dormitaverunt** omnes et **dormierunt**.
[*D-R*: They all **slumbered** and **slept**.]

Li: **geslepedon** alle & **geslepdon**.
Ru1: **slepade** ealle & **slep ofereode**.
WSCp: **hnappudon** hig ealle & **slepun**.
WycE: alle **nappiden** and **slepten**.
WycL: alle thei **nappiden** and **slepten**.
Ty: all **slombred** and **slepte**.

(2) *Lk* 8.23 Navigantibus autem illis **obdormiit**…
[*D-R*: When they were sailing, he **slept**.]
Li: hrowundum vel miððy gehrowun ðonne ðæm **slepde**.
WSCp: Þa hig reowun, þa **slep** he.
WycE: Sothli, hem rowynge, he **slepte**.
WycL: And while thei rowiden, he **slepte**.
Ty: And as they sayled he **fell a slepe**.

Thirteen surviving OE glossed Psalters were examined, as shown in Tab. 1. The Latin verbs (*dormīre*, *ob-dormīre*, *dormitāre*) corresponding to *hnappian* are

Table 1. Distribution of the OE equivalents of the Latin words *dormīre*, *ob-dormīre* and *dormitāre* in OE glossed Psalters

			A	B	C	D	E	F	G	H	I	J	K	L	P	PPs
1	3.6	*dormīre*	●	●	○	○	○	●	○	○	○	○	○		○	
2	40.6	*dormīre*	●	●	●	○	○	●	○	○	○	●	○		○	
3	56.5	*dormīre*	●	○	●	○	○	○	○	○	○	○	○			○
4	67.14	*dormīre*	○	○	○	○	○	○	○	○	○	○	○			○
5	75.6	*dormīre*	○ ●	○	○ ●	○	○	○	○	○	○	○	○			○
1	4.9	*ob-dormīre*	●	●	●	○	○	●	○	○	○	○	○		○	
2	12.4	*ob-dormīre*	○	○	○	○	○	○	○	○	○	○	○		○	
3	43.23	*ob-dormīre*	●	●	●	○	○	○	○	○	○ ●	○	○		○	
4	120.3	*ob-dormīre*	●	●	●	○	○	●	○		○ ●	○	○	○ ●		○
5	120.4	*ob-dormīre*	○	○	○	○	○	○	○		○	○	○	○		▲
1	75.7	*dormitāre*	●	●	●	●	○ ●	●	●	●	●	●	●			○
2	118.28	*dormitāre*	●	●	●	○	○	○	○		●	○	○	●		○
3	120.4	*dormitāre*	●	●	●	●	○	●	●		●	●	●	●		○

●: *hnappian*; ○: *slǣpan*; ▲: *ge-swefian*; parts that do not correspond are left blank; instances where both *hnappian* and *slǣpan* appear are shaded in grey.

marked with ●, to *slǣpan* with ○, and to *ge-swefian* with ▲. Parts that do not correspond are left blank, and instances where both *hnappian* and *slǣpan* appear are shaded in grey. The OE equivalents of Latin words differ greatly in the various Psalters. Either *hnappian* or *slǣpan* is given as a gloss for the Latin *dormīre*, *ob-dormīre*, and *dormitāre*. Only *dormīre* in Psalms 67.14 and *ob-dormīre* in 12.4 and 120.4 are consistently translated with *slǣpan*, with the exception of the PPs. *Ge-swefian* appears only once as an equivalent of the Latin *ob-dormīre*.

These Psalters can be divided into two groups according to the Latin texts they are based on: one is the *Roman Psalter* (A to D and L), and the other is the *Gallican Psalter* (E to K and P). With some exceptions, when compared to the Roman type, the Gallican type seems to use *hnappian* for *dormitāre* and *slǣpan* for *dormīre* and *ob-dormīre*. However, although A and D are of the same type, the opposite distribution is observed in D. Both *hnappian* and *slǣpan* coexisted in the OE period, but from the latter half of OE to ME and later, *slǣpan* outnumbers *hnappian* more markedly. This appears to confirm the idea that *slǣpan* gradually became more common as compared to *hnappian*.

The thirteen instances shown in Tab. 1 can be spilt into three groups based on their meanings: 1) the figurative use of 'sleep', 2) 'to lie', 3) 'to slumber, to sleep'. The figurative use is found in 3.6, 4.9, 12.4, 40.9, 43.23, and 120.4 with the Latin verbs *dormīre*, *ob-dormīre*, and *dormitāre*. Both *slǣpan* and *hnappian* appear as glosses of these Latin words. As is the case with the Gospels, there is no distinction between the literal and figurative usages. A difference in glosses can be found in 3.6, 4.9, 40.9, and 43.23 in the various Psalters. This contrasts with what was found in other places; for example, in 12.4 and 120.4, the Latin *ob-dormīre* is rendered as *slǣpan* in all versions, with the exception of PPs *ge-swefian* in 120.4. Referring to 3.6, 4.9, 40.9, and 43.23 in Tab. 1, one can see that *hnappian* is preferably used in A and B, *slǣpan* in D, E, G, H, J, K, and P, and both of the verbs in C, F, and I. These instances show that *hnappian* and *slǣpan* may have been interchangeable. For instance, in 3.6 the Latin verb *dormivi*, which is the first person singular perfect active indicative form of *dormīre* 'to sleep', corresponds to *hnappian* in A, B, and F, whereas *slǣpan* is found in the others; and in 4.9 *dormiam*, the first person singular future indicative form of dormīre 'to sleep', is equivalent to *hnappian* in A, B, C, and F. Conversely, *slǣpan* is found in the rest. Another thing to point out is that the verbal type of *slǣpan* differs among OE glosses as in 3.6 and 4.9, where its weak form can be observed in G and J and the original form in the rest.

(3) Psalms 3.6 Ego **dormivi** et somnum coepi…
[*D-R*: I **have slept** and taken my rest.]
A: Ic **hneappade** & slepan ongon.
B: Ic **hnappade** & slapan ongon.
C: Ic **slep** & hnappunge ic onfeng.
D: **Slep** ic aras forðon anfeng.
E: Ic **slep** & swefne ic onfeng.
F: Ic **hnæppode** & ic swodrode.
G: Ic **slepte** & slæp ic ongan.
H: ic **slep** onfeng me.
I: Ic **slep** & ic eom geswefod.
J: Ic **slæpte** & slæpingan ic eom.
K: Ic **slep** & swefnode.
P: þa ongan ic slapan and **slep**.

(4) Psalms 4.9 In pace in idipsum **dormiam**…
[*D-R*: In peace in the selfsame I will sleep.]
A: In sibbe in ða ilcan ic **neapiu**.
B: In sibbe in þa ilcan ic **hnappige**.
C: On sybbe in þa ilcan ic **hnappige**.
D: On sybbe on þæt selfe ic **slape**.
E: On sibbe on þæt selfe ic **slæpe**.
F: On sibbe on þæt sylfe ic **hnæppie**.
G: In sibbe on þære ilcan ic **slepte**.
H: on sibbe on þæt sylfe ic **slape**.
I: On sibbe on him sylfum ic **slæpe**.
J: On sibbe on þare ilcan ic **slæpte**.
K: On sibbe on þæt sylfe ic **slape**.
P: on þære sibbe **slapan**.

The Latin *dormīre* glossed 'to lie' can be found in 56.5 and 67.14. In 56.5, *dormīre* is glossed as *hnappian* in A and C, whereas it is *slǣpan* in the others. On the other hand, *slǣpan* only appears in 67.14 as an equivalent of the Latin *dormīre* in the various Psalters. Hence, it seems clear that both *hnappian* and *slǣpan* overlapped in meaning in OE.

In 75.6, 75.7, 118.28, and 120.3, four examples of Latin words for 'to slumber, to sleep' are found. The OE equivalents of the Latin words vary among the various Psalters, especially in 118.28 and 120.3. In 118.28 the Latin *dormitāre* is glossed as *hnappian* in A, B, C, I, and L while *slǣpan* is used in the others. Here, no weak verbs are observable. In 120.3 the gloss for the Latin

obdormīre is *hnappian* in A, B, and C whereas it is *slǣpan* in the others with the exception of I and L, where both *hnappian* and *slǣpan* appear.

In general, the verb *hnappian* in OE and early ME denoted 'to sleep, to slumber, to fall asleep, to lie' as well as the figurative use of 'sleep'; however, the meaning of *hnappian* was gradually circumscribed, and it came to be used in the more specific sense of, for example, 'to sleep lightly or for a short time, to get drowsy'. Therefore, I conclude that the weak verb *hnappian* was a synonym of *slǣpan* in the OE period.

(5) Psalms 118.28 **Dormitavit** anima mea prae taedio…
[*D-R*: My soul **hath slumbered** through heaviness.]
A: **Hneapade** sawul min fore longunge.
B: **Hnappode** sawl min for langunge.
C: **Hnappode** sawl min fore longunge.
D: **Slep** sawl min for æþrote.
E: **Slep** sæwle mine for unluste.
F: **Slæpð** sawle min for gælnysse.
G: **Slep** sawl min.
I: **Hneppade** sawle min for ðrece vel for æmelnysse.
J: **Slæpþ** sawle min for gælnesse.
K: **Slep** sawl min for æþrote.
L: **Hnappode** sawl min for langunge & utrotnesse.
PPs: Min sawl **aslep**, þa me sorh begeat for langunga.

(6) Psalms 120.3 …neque **obdormiet** qui custodit te.
[*D-R*: Neither let him **slumber** that keepeth thee.]
A: ne **hneappað** se ðe haldeð ðec.
B: ne **hnappað** se ðe healdeð ðe.
C: ne ne **hnappað** se ðe healdyð þe.
D: & na **slape** þe healde ðe.
E: nemne **slepeþ** þæ gehielt ðe.
F: & ne ne **hnæppie** se ðe healde þe.
G: & **slapað** se þe healdeð þe.
I: ne ne **slæpeð** vel ne ne **hnappaþ** se þe gehealt þe.
J: & na **slape** se þe healdeþ þe.
K: & na **slapeþ** þe healdeþ þe.
L: ne ne **hnappað** & **slæpeð** se þe healdeþ þe.
PPs: ne hycge to **slæpe** se ðe healdeð þe.

The combined use of different lexical items which have the same or a similar meaning is sometimes effective in helping to convey a strong impression of

a scene. One finds an alternation between *hnappian* and *slǣpan* in the texts, it is likely that there is a close semantic relation between these words. I found six examples of the combined use of *hnappian* and *slǣpan* in glossing the Latin words *dormīre*, *ob- dormīre*, or *dormitāre*, which are shaded in grey in Tab. 1 and shown in (6)-(9). Here I noticed that the combined use of words with a similar meaning can be seen not just in a single manuscript, but in several. Furthermore, a noteworthy example is shown below in (8), which indicates how *slǣpan* may have become a weak verb in analogy to *hnappian*. *Hnappian* occurs with a weak form of *slǣpan* in A, whereas it appears with a strong form of *slǣpan* in C.

(7) Psalms 43.23 Exurge quare **obdormis** Domine exurge.
[*D-R*: Arise, why sleepest thou, O Lord? arise.]
I: Uparis forhwi **hnappas** þu vel hwi **slæpst** þu aris.

(8) Psalms 75.6 …**dormierunt** somnum suum…
[*D-R*: They **have slept** their sleep.]
A: **hneapedun** [vel **slypton**][4] slep heara.
C: **slepun** vel **hnappudon** slæp hyra.

(9) Psalms 75.7 **…dormitaverunt** qui ascenderunt equos.
[*D-R*: They **have** all **slumbered** that mounted on horseback.]
E: **slepon hnappodon** þa æstigen hors.

All available evidence thus suggests that both *hnappian* and *slǣpan* were essentially synonymous in OE. I also noted that both *hnappian* and *slǣpan* are used as glosses for the Latin words *dormīre*, *ob-dormīre*, and *dormitāre* in the same verse. This allows us to conclude that the strong verb *slǣpan* began to employ the weak conjugation in OE due to the analogical influence of the synonymous *hnappian*.

3.2 OE words for 'to spit'

The typical terms for 'to spit' in OE are as follows. *Spātan* and *spīwan* (= *spew*) were strong verbs which had related meanings such as 'to spew up', 'to vomit', and 'to spit up'. Weak verbs include *spǣtan*, *spēowan / spīowan*, *-spittan* (= *spit*), *spittian*, *spatilian* and *spigettan*. Derived words (weak verbs)

4 [ ]: a mark for insertion.

are *-spi(o)wian* from the PT *spiowede* of *spēowan /spīowan* 'to spew, to spit up' (see *BT*). As for the Latin words which correspond to these words, they are as follows: *-spuere* 'to spit (out/upon), to spew', *sputāre* 'to spit, to spit out', *screāre* 'to hawk, to clear the throat noisily', *-vomere* 'to vomit, to vomit up, to vomit forth, to throw up, to spew out' (see *ALD*). Glosses corresponding to the Latin *-spuere* are mostly *spā/ǣtan* or *-spittan*, but *spā/ǣtan* seems to be predominant, and the Latin *-vomere* is chiefly glossed with *spīwan* according to the examination according to a survey of OE texts: Saint Gregory's *Pastoral Care* (*CP*) (MSS, C and H)[5], Ælfric's *Grammar* (*ÆGram*) and Ælfric's translation of the Heptateuch (*ÆHept*), *WSCp*, etc.

First, I will consider why *spīwan* (= *spew*), which belongs to the strong verb class I, changed to the weak class. In the *Book of Leviticus* (*Lev*.) 18.28; 20.22 and the *Book of the Apocalypse of St. John* 3.16 of *WycE* and *WycL*, *-vomere* corresponds to the weak verb *cast*, a verb which was borrowed from ON *kasta*. However, *spew* with weak forms is found from *Ty* to *AV*, except for *D-R* which uses *vomit* instead.

(10) *Lev* 18.28 Cavete ergo ne et vos similiter **evomat** cum paria feceritis sicut **evomuit** gentem quae fuit ante vos.
[*D-R*: Beware then, lest in like manner, it **vomit** you also out, if you do the like things, as it **vomited** out the nation that was before you.]
WycE: Shoneth therfor, lest and also3ow it **caste** out, whanne the same thinges 3e doon, as it **keste** out folk that was before 3ow.
WycL: Therfor be ye war, lest it **caste** out viliche also you in lijk manere, whanne ye han do lijk synnes, as it **castide** out vileche the folk, that was bifor you.
Ty: lest that the lande **spewe** you out when ye haue defiled it, as it **spewed** out the nacions that where there before you.

(11) *Lev* 20.22 …ne et vos **evomat** terra equam intaraturi estis et habitaturi.
[*D-R*: Lest the land into which you are to enter to dwell therein, **vomit** you also out.]
WycL: lest the lond, in to which ye schulen entre and dwelle, **caste** out viliche also you.
Ty: that the londe whether I brynge you to dwell therein, **spewe** you not oute.

5 MS.C: Cotton Tiberius B. xi., in the British Museum (C. i.); MS. H: Hatton 20 (formerly 88) in the Bodleian (H.).

(12) *Apocalypse of St. John* 3.16 …incipiam te **evomere** ex ore meo.
[*D-R*: I will begin to **vomit** thee out of my mouth.]
WycE: I shal bigynne for to **caste** thee out of my mouth.
WycL: I schal bigynne to **caste** thee out of my mouth.
Ty: I will **spew** ye oute of my mouth.

According to the *OED*, weak forms for *spew* are first attested in the 14th century. In addition, the weak verb *vomit*, which was borrowed from Latin, appears after the 14th century. Although the strong verb *spīwan* was used in OE as a gloss for Latin *-vomere*, the existence in later glosses of two synonymous weak verbs, i.e., *cast* and *vomit*, suggests that these verbs may have had an analogical influence on *spīwan*, causing it to become a weak verb.

Now let me turn to the problem of why *-spittan* (= *spit*), a weak verb, changed to a strong verb. Previous studies like Jespersen (1942: 48), Brunner (1962: 233), and Esser (1988: 31) claimed that the new strong forms of *-spittan* came about from the past form of *spǣtan*, a weak verb, while others like Bülbring (1889: 113-114), Wright (1924: 177), and Price (1970: 136) argued that the two originally distinct verbs *-spittan* and *spǣtan* were mixed up due partly to the operation of analogy that occurred after these forms became phonetically similar to *sit*. What seems to be lacking are any convincing examples which show the relation between these two verbs. Let me carefully examine the effects of synonyms in the OE period, and then demonstrate that the effects are diachronic.

As mentioned above, *spā/ǣtan* and *-spittan* were used interchangeably as an equivalent of the Latin *-spuere*, but *spā/ǣtan* was quite dominant in OE. As a result of their semantic relatedness, their forms were gradually combined in the OE period. For my analysis, I will take a look at the diachronic change of the OE equivalents of the Latin *-spuere* in the Gospels. The third person plural future active indicative form of *-spuere* in *Mk* 10.34 and the present infinitive active form of *-spuere* in *Mk* 14.65 correspond to *-spittan* in *Li*, *Ru2*, and from *Ty* onward, whereas *-spǣtan* is used in *WSCp* and *WycL*, and either *-spǣtan* or *-spittan* in *WycE*. What is to be noted here is that *-spittan* occurs in infinitive and present forms in Northumbrian, but *-spǣtan* occurs only in West-Saxon (WS).

(13) *Mk* 10.34 et inludent ei et **conspuent** eum et flagellabunt eum…
[*D-R*: And they shall mock him, and **spit** on him, and scourge him, and kill him.]
Li: & bismerageð him & hia **spittes** hine & hia suingeð hine hia acuoellað hine.

Ru2: & bismerigas hine & **spittas** & hiæ swingas hine & hiæ cwellað hine.
WSCp: & hi hine bysmirað & hi him on **spætað** & hine swingað & ofsleað hine.
WycE: And thei schulen scorne him, and **byspeete** him.
WycL: and **bispete** hym, and bete him; and thei schulen sle hym.
Ty: and they shall mocke hym and scourge him and **spit** vpo hym and kyll him.

(14) *Mk* 14.65 Et coeperunt quidam **conspuere** eum…
[*D-R*: And some began to **spit** on him.]
Li: & ongunnun summe efne **gespitta** vel gehorogæ hine.
Ru2: & ongunnun sume efne **gispita** vel hyra on hine.
WSCp: And sume agunnon him on **spætan**.
WycE: And summe bigunnen for to **bispitte** him.
WycL: And summe bigunnen to **bispete** hym.
Ty: And some begane to **spit** at him.

With regard to the OE equivalents of the Latin *-spuere* in the past tense or as a past participle, *-spātan* is observed in most cases with a few occurrences of *-spittan* to be found in OE. For example, in *Jn* 9.6, the Latin *ex-puit*, the third singular perfect indicative active form of *-spuere*, is rendered as *aspeaft*[6] in *Li*, *aspeoft* in *Ru2*, and *spætte* in *WSCp*; in *Lk* 18.32, the Latin *con-spuetur*, the third singular future indicative of the passive form of *-spuere*, is translated as *gespeoftad*[7] in *Li*, *gispitted* in *Ru2*, and *onspæt* in *WSCp*. In short, the new weak form and the original strong form of *-spātan* occur in *Li* and the forms of a weak verb *spittan* and a strong verb *-spātan* appear in *Ru2*. In contrast, the weak verb *-spætan* remains in *WSCp*. These observations imply that in Northumbrian *-spittan* was more likely to be used for infinitive and present forms for the term 'to spit', while *-spātan* was used for its past and past participle forms, but the situation differed in WS where the weak verb *-spætan* was commonly used.

Tab. 2 shows the distribution of OE equivalents for the Latin *-spuere* in the numerous versions of the Gospels. A further important point is that the PT/PP forms for -spittan are variable, such as *spit* with the dental suffix, *spit*

6 *Speoft* and *speaft*: the reduplicated past forms of *spātan* (cf. Campbell, 1959 [2003]: 320).

7 According to Krygier, *gespeoftad* is the PP form of **speoftian* which is derived from the PT *speoft* of *-spætan*, but *BT* has taken an uncertain stance on it. Campbell (1959 [2003]: 320) claims that it is formed from PT *speoft*.

Table 2. Distribution of OE equivalents for the Latin -*spuere* in the numerous versions of the Gospels

	VG	*Li*	*Ru1*	*Ru2*	*WSCp*	*WycE*	*WycL*	*Ty*	*Cov*	*GB*	*Mat*	*BB*	*Gen*	*D-R*
Mt 26.67	expuerunt	speafton	spittadun		spætton	spitten	speten	spat	spytted	did spytt	spat	did spyt	spet	did spit
Mt 27.30	expuentes	spatende vel	spittende		spætton	spittynge	speten	spitted	spytted	had spytt	spitted	had spyt	spitted	spitting
Mk 7.33	expuens	gebleuu		gibleow	spætende	spetinge	spetide	dyd spyt	dyd spyt	dyd spyt	did spitte	dyd spyt	did spit	spitting
Mk 8.23	expuens	speaft		speoft	spætte	spetynge	spete	spat	spat	had spyt	spat	had spyt	spat	spitting
Mk 10.34	conspuent	spittes		spittas	spætað	byspeete	bispete	spit	spyt	spyt	spyte	spit	spit	spit
Mk 14. 65	conspuere	gespitta		gispita	spætan	bispitte	bispete	spit	spyt	spit	spit	spyt	spit	spit
Mk 15.19	conspueban	speofton		speoftun	spætton	bispatten	bispatten	spat	spytted	dyd spitt	spatte	did spit	spat	did spit
Lk 18.32	conspuetur	gespeoftad		gispitted	onspæt	bispet	bispat	spetted	spitted	sppytted	spitted	spitted	spitted	spit
Jn 9.6	expuit	aspeaft		aspeoft	spætte	spette	spette	spate	spat	spat	spatte	spat	spat	spat

with *do*-periphrasis, and *spat* with or without the dental suffix. These forms can be seen in various versions. However, *spat* with *do*-periphrasis never occurs, as shown in (15). This implies that the weak form *spat* functions well by itself as a past tense form for *-spittan*.

(15) *Mt* 26.67 Tunc **expuerunt** in faciem eius.
[*D-R*: Then **did** they **spit** in his face.]
Li: ða **speafton** in onsionc his.
Ru1: þa **spittadun** on his ondwliotu.
WSCp: þa **spætton** hig on hys ansyne.
WycE: Thanne thei **spitten** in to his face.
WycL: Thanne thei **speten** in his face.
Cov: Then **spytted** they in his face.
GB: Then **dyd** they **spytt** in his face.
Mat: Then **spat** they in hys face.
BB: Then **dyd** they **spyt** in his face.
Gen: Then **spet** they in his face.
Ty: Then **spat** they in his face.
AV: Then **did** they **spit** in his face.

According to Elleågrd's (1953: 161-2) research on the use of *do*-periphrasis in various types of sentences, the second half of the 16 century was the peak of the usage of *do*-periphrasis in affirmative statements. Thus it is probably no coincidence that the use of *do*-periphrasis as a past marker for *-spittan* appeared around that time. One of the likely causes for inserting *do*-periphrasis is to differentiate the form of the preterit from that of the present of such verbs as *cast*, *put*, *set*, *spit*, *beat* and *eat* (Grainger 1907; Trinka 1930: 44; Rissanen 1999: 240). If there were a similarity between present and past, one would desire to avoid ambiguity. Then the historical competitor *-spǣtan* or *do*-periphrasis may be used for resolving the issue.

4. Concluding remarks

Through a series of detailed case studies on several individual verbs, I have argued that the transformation of verbs from strong to weak or vice-versa occurred as a result of analogy based on semantic relatedness. For instance, the strong verb *slǣpan* became a weak verb by analogy to the synonymous weak verb *hnappian*. The strong verb *spīwan* became weak under the

influence of the loanwords *cast* and *vomit*. The original weak verb *spittan* became strong under the influence of the strong verb *spātan* and its weak form *spǣtan*. I also noted that the simplification of final inflectional endings led to formal ambiguity between the present and past. In this case, the historical competitor *-spǣtan* or *do*-periphrasis were used for disambiguating the form. As a result, the original weak verb *spittan* obtained the PT form of *-spǣtan*. Furthermore, it was shown that the transfer of English verbs is often fostered by the verb type of co-occurring synonymous words. It is hoped that this study will contribute to elucidating the history of the English verb, despite the fact that it documents only a small number of cases. More comprehensive studies are necessary in the future.

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Style-shifting as a function of multiple factors: A corpus based study

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ABSTRACT

According to Labov (1966, 1972), the selection of a given style is primarily dependent on the amount of attention the speaker pays to what he is saying. In more formal styles he tends to be more aware of the way he speaks, and in less formal styles he does not concentrate on his linguistic performance. An alternative explanation of style-shifting was proposed by Giles (1973), who suggests that the speaker attunes his speech toward his addressee. The major aim of the present paper is to evaluate these two approaches in a single experiment. In order to fulfil this task the distribution of formal and informal variants of three selected variables have been investigated in the *Michigan Corpus of Academic Spoken English* (*MICASE*). This corpus allows the testing of the variants according to specific transcript attributes, making it particularly suitable for the task. The results of the experiment indicate that the choice of a speaker's style depends on both of the factors suggested in the two theories and, as proposed in some recent publications, the process may be affected simultaneously by many other aspects of the speech event.

1. Introduction

Mayerhoff states that style-shifting is "variation in an individual's speech correlating with differences in addressee, social context, personal goals or externally imposed tasks" (2006: 28). Such a definition explicitly points out the fact that style-shifts involve intra-speaker variation rather than inter-speaker variation. This feature is also clearly indicated by Schilling-Estes, who, quoting Crystal (1991: 295) and Halliday (1978), additionally specifies that intra-speaker variation encompasses either "shifts in usage levels for features associated with particular groups of speakers- i.e. dialects- or

with particular situations of use- i.e. registers" (2003: 375). As an example of register-based variation she suggests that the speaker may make use of pronunciation features which are considered to be "formal" to a greater extent in a conversation about work-related matters than when talking in an informal environment about family. Recently, the investigation of the possible reasons for intra-speaker variation has moved the focus from analysing just one or a few social factors to examining a full range of possible aspects (e.g. Kiesling 1996; Mendoza-Denton 1977; Eckert 2000). In addition, more and more variationists discuss the influence of intra-speaker variation on diverse linguistic features (e.g. Schilling-Estes 1999; Coupland 2001) and not just on chosen phonetic or lexical variables.

The major focus of this article is, however, on the individual factors proposed in initial studies on style-shifting. The first of these is the suggestion that the level of formality of style is "a function of speakers' attention to their own speech: in more formal styles they pay more attention; in more casual styles they pay less attention" (Mayerhoff 2006: 30). The ideas was originally proposed by Labov (1966, 1972), who investigated several sociolinguistic variables in New York City English. His research method included "sociolinguistic interviews" which consisted of four structured parts. The first of these was reading a list of minimal pairs; the second, reading a list of words in isolation; the third, reading aloud a short narrative; and the fourth involved talking with the interviewer about various subjects, such as the interviewee's life, beliefs, etc. The four contexts were believed to draw the participants' attention to their own speech to different degrees. The tasks were arranged from the most "formal" to the "most informal". Therefore, reading minimal pairs should involve relatively more "formal" variants than reading list of words, which in turn should involve more "formal" variants than reading aloud a short narrative, and so on. Labov's studies confirmed the association between the four interview contexts and the percentage of formal and informal variants appearing in his experiments and the view that styles are dependent on the amount of attention paid to speech was later accepted by other variation researchers (cf. Ervin-Tripp 1973; Tarone 1982; Lavandera 1988). An empirical study which substantiated Labov's suggestion was conducted by Mahl (1972), who tried to examine the influence of aural monitoring on style-shifting among the participants of his test. He established that, indeed, when the informants were exposed to white noise and they could not hear themselves speak, their speech became markedly less formal than in the case where aural monitoring was possible. Some other researches also confirmed a correlation between attention and formality of

speech (cf. Dressler 1974; Vaneček – Dressler 1975). Nevertheless, the theory also came under criticism. For example, Wolfram (1969: 58-59) argued that the paralinguistic channel cues used in Labov's experiments, such as pitch, volume, changes of tempo, breathing rate and the use of laughter, are not necessarily reliable indicators of casual speech. For instance, laughter may also be associated with increased nervousness and self-consciousness. Moreover, some authors observed that shifting into less formal styles may also be conscious and speakers may also pay close attention to the way they speak in such cases (cf. Rickford 1979; Coupland 1980, 1985, 2001; Schilling--Estes 1998; Eckert 2000).

An alternative explanation of style-shifting may be found in the so-called "speech accommodation theory", which was initially proposed in Giles (1973) and Giles – Powesland (1975). One of the major ideas it contributes is that speakers adjust their speech to their addressees and shifts in style are primarily due to this factor rather than the amount of attention paid to speaking. This proposal was adopted in the theory of "audience design" put forward in Bell (1984). This approach, among other things, elaborated on different audience types. Bell distinguished between addressees, who are the people spoken to directly; auditors, who are ratified participants of the conversation but are not directly addressed; overhearers, who are not treated as participants of the conversation, but whose presence is known to the speaker; and also eavesdroppers, who are unratified participants of the speech event and the speaker is unaware of their presence. Bell claimed that these kinds of listeners have progressively less and less influence on the linguistic behaviour of the speaker; thus addresses have the greatest impact on a speaker's style, auditors influence the speech event to a lesser degree than addressees but to a greater degree than overhearers, and so on.

It is important to add that Bell did not deny the fact that attention to speech may play a role in the process of style-shifting, but he assumes that it is "a mechanism, through which other factors can affect style. Certain topics or addressees or settings tend to evoke graded degrees of attention which may result in parallel graded styles. But the behavioural results of a given level of attention can also be quite diverse. […] Attention is at most a mechanism of response intervening between a situation and a style" (Bell 1984: 150).

Bell substantiates his claims by referring to various studies on the subject, for instance Trudgill (1974); Douglas-Cowie (1978); Bickerton (1980); Coupland (1980, 1981, 1984); Russell (1982); and Thelander (1982). All of them show that, indeed, speakers attune their speech to the norms associated with different addressees.

2. Aim of the current project

The major aim of the current project is to examine the two basic theories on style-shifting discussed in the introduction. In particular, the two approaches are to be tested on the basis of one and the same language sample using one and the same procedure. Even though both of the theories have been tested in independent sociolinguistic experiments, diverse methodological procedures were applied and, consequently, it is difficult to objectively assess the relative validity of these results. So far no attempt has been made to evaluate the two proposals in a single experiment. What is more, the current study aims at using a large, unbiased sample which allows statistically relevant conclusions to be drawn. Unfortunately, such an approach was not used in all previous experiments on style-shifting.

3. Data and methods

One of the possible solutions for fulfilling the requirements outlined above is to use a large on-line corpus. The advantage of choosing such an option is the greater sample size and the increased likelihood that the results obtained would be statistically significant. Obviously, it is virtually impossible to design any sociolinguistic interview which would be comparable with a proper corpus in terms of the amount of analysed data. Additionally, corpora are not prepared with any particular linguistic analysis in mind. They include an enormous amount of data, which is balanced and can serve various research purposes. Consequently, using a corpus automatically makes the experiment "blind". The speakers "do not know" what is being investigated.

At present, various corpora based on spoken English are available on the Internet. For instance, the *Vienna-Oxford International Corpus of English* (*VOICE*) is a structured collection of English as means of communication between speakers from different first-language backgrounds. A similar project has been completed at the University of Helsinki under the name *English as a Lingua Franca in Academic Settings* (*ELFA*). One should also mention the *Corpus of Spoken Professional American English* (*CPSAE*), *The Santa Barbara Corpus of Spoken American English* (*SBCSAE*), the *Hong Kong Corpus of Spoken English* (*HKCSE*), the *British Academic Spoken English Corpus* (*BASE*), the *London-Lund Corpus of Spoken English* (*LLC*), the *Spoken English Corpus* (*SEC*), the *Diachronic Corpus of Present-Day Spoken English* (*DCPSE*), the *Saarbrücken Corpus of Spoken English* (*SCoSE*), the *Corpus of Spoken Professional American-English* (*CSPA*), the *Old Bailey Corpus* (*OBC*), the *Louvain International*

Database of Spoken English Interlanguage (*LINDSEI*), the *Monash Corpus of Australian English* (*MCE*), the *The Griffith Corpus of Spoken Australian English* (*GCSAusE*), and the *Wellington Corpus of Spoken New Zealand English* (*WSC*). For the current purposes, however, the *Michigan Corpus of Academic Spoken English* (*MICASE*) has been chosen. The corpus is based on 152 transcripts of academic speech events recorded at the University of Michigan and includes over 1.8 million words. It is probably the largest corpus based on spoken English. Another significant advantage is that it offers the possibility of searching according to several speaker and transcript attributes. Speaker attributes include gender, age, academic position, native speaker status, and the first language of the speaker. Transcript attributes are speech event type, academic division, academic discipline, participant level, and interactivity rating. This particular feature makes the corpus a particularly suitable tool for meeting the primary objectives of the current project.

In the remaining part of this paper the two basic approaches outlined in the introduction will be referred to in the following way: the proposal initially put forward by Labov (1966, 1972) that formality or informality of styles is a function of speakers' attention to their own speech will be called Hypothesis 1 and the idea suggested by Bell (1984) that the difference between informal and casual speech can be seen as a function dependent on the addressee will be called Hypothesis 2.

In order to test the two hypothesis, specific variables need to be selected which would alter whenever the speaker changes her style from (more) formal to (more) informal and vice versa. Petrusiak Engkent (1986) discusses many such variables. She mentions that spoken English is characterized by reductions of sounds and ellipsis, the use of "you" as a general pronoun, hesitation markers, "errors" in subject-verb agreement and pronoun agreement, the overuse of the verb "to get", the frequent modification of verbs with the addition of "up" and the use of specific modifiers such as "a lot" and "a bit". Additionally, Petrusiak Engkent suggests that a common feature of "conversational" English is the use of euphemisms, idioms, numerous slang words and "ritualistic" expressions for greetings and partings. The variables chosen for the current project are the examples she discusses among "reductions of sounds ". She proposes that in informal spoken English the forms "gonna", "wanna" and "gotta" are more popular than in more formal contexts. The three examples are ideal for testing the theories under discussion. Firstly, the variants marking formal and informal styles most likely do not differ functionally. The forms "gonna", wanna" and "gotta" are exact equivalents of more formal "going to", "want to" and "got to" (although the variants "going to" and "got to" could themselves

be regarded as less formal). Secondly, the variants are spelled differently, which is advantageous in using a corpus. Although *MICASE* is based on voice recordings and any variation in pronunciation could be measured acoustically, the fact that the variants chosen in the present study differ in terms of spelling make the task infinitely more reliable, as it is enough just to search for the variants in the search box. Tab. 1 summarises the variables and their variants used in the experiment.

Table 1. Variables and their variants used in the experiment

Variable	More Formal Variant	More Informal Variant
(going to)	"going to"	"gonna"
(want to)	"want to"	"wanna"
(got to)	"got to"	"gotta"

The current experiment also requires establishing which speaker and/or transcript attributes should be taken into consideration. Since all the three hypotheses focus on the characteristics which are related to the transcript attributes in *MICASE* Corpus, speaker attributes will not be analysed. It is, however, crucial to specify which transcript attributes will be used in testing which hypothesis. To begin with, the most appropriate criterion for examining Hypothesis 1 is "speech event type". In more formal contexts the speaker will direct more attention to her speech and in less formal contexts her speech will be less controlled. From among fifteen available attributes seven have been selected and classified in the following way:

- the most formal: dissertation defence, colloquia
- the most informal: tour, meeting, advising, office hours, service encounters.

It must be stressed that the level of formality of these speech event types is relative. "Tour", "meeting", "advising", "office hours" and "service encounters" are obviously less formal contexts than "dissertation defence" and "colloquia", but they could be more formal than many other situations outside of the academic environment the corpus deals with.

It should also be noted that the results concerning the distribution of the variants of (going to), (want to) and (got to) on the basis of the selected transcript attributes do not necessarily refer exclusively to the amount of

attention the speaker pays to his speech. Other influences may play a crucial role (cf. the discussion in the introduction), but surely attention to speech is significant. Indeed, in his experiments Labov (1966, 1972) assumed that the amount of attention to speech is directly dependant on the level of formality of the speech event.

The attributes chosen for testing Hypothesis 2 concern "interactivity rating". The *MICASE* corpus allows searching according to the following four levels of this criterion: highly interactive, mostly interactive, mostly monologic and highly monologic. These transcript attributes are highly suitable for examining whether style-shifting is dependent on the speaker's attention to their interlocutor(s). In "highly interactive" linguistic behaviours the speaker tends to be more aware of the addressee(s) than in "mostly interactive" situations, which are, in turn, more hearer-oriented than "mostly monologic" utterances and, even more so, "highly monologic" ones.

Finally, it is necessary to point out that in all the calculations performed in this study the samples taken into consideration are always half of what the corpus data encompasses. For instance, the entire corpus involves 1848364 words and the sample size in Tab. 2, which concerns the general distribution of the variants, is 924182. The reason for such a change is the fact that all the variants chosen for the analysis consist of two lexical items, even though "gonna", "wanna" and "gotta" are spelled as single words. Consequently, their distribution is calculated on the basis of all the possible pairs of words in the corpus, so the samples are always reduced to half of all the words in a given group.

4. Results

4.1 General distribution of the variants in the *MICASE* corpus

Tab. 2 presents the overall distribution of the variants examined in the current project. It is plainly visible that in all three cases the informal forms are clearly more popular than the formal ones and the differences are statistically significant ($p < 0.0001$). Indeed, the ratio between "gotta" and "got to" is 3.8 to 1, between "wanna" and "want to" 2.1 to 1, and between "gonna" and "going to" 3.9 to 1. These results should be kept in mind in the further analysis, because the influence of the two different factors (Hypothesis 1 and Hypothesis 2) on the speaker's style should be considered in relation to the general distribution of the variants in the corpus.

Table 2. General distribution of the variants in the MICASE Corpus (n = 924182)

Variants	Tokens	Percentage
got to	84	0.0090891%
gotta	318	0.0344088%
want to	933	0.1009541%
wanna	1983	0.2145681%
going to	1071	0.1158863%
gonna	4192	0.4535903%

4.2 Testing Hypothesis 1

Tab. 3 presents the distribution of all the examined variants in the selected formal and informal contexts. To begin with, the results indicate that in formal situations "got to" is more popular than "gotta", even though, in general, the former is used less frequently in the corpus than the latter (cf. Section 4.1). It must be admitted, however, that the observed difference is statistically not significant ($p = 0.2228$), which may be the result of a relatively small sample (the two formal contexts include 214170 words, so the calculations were made on the basis of a sample consisting of 107085 elements). A reverse in the distribution of the variants may be observed in informal contexts. This time "gotta" is much more frequent than "got to" and this general observation should be regarded as highly statistically relevant ($p < 0.0001$). We could also analyse the distribution of the two variants within the individual situational contexts (cf. Figures 1 and 2), but the differences are statistically significant only in some of these instances. While the p-values are below 0.05 in the case of the differences between the distribution of "gotta" and "got to" in tours, advising sessions and office hours, they are higher in other instances.

Table 3. Distribution of the variants in formal and informal contexts

Variants	Tokens	Percentage	Tokens	Percentage
got to	20	0.0186768%	13	0.0080505%
gotta	13	0.0121399%	80	0.0495417%
want to	142	0.1326049%	268	0.1659648%
wanna	122	0.1139282%	603	0.3734209%
going to	180	0.1614410%	176	0.1089918%
gonna	278	0.2596069%	903	0.5592024%

Although the above observations are interesting and, in fact, support Hypothesis 1, comparing the two variants is probably less informative than analysing their distributions separately. As discussed in Section 4.1, the occurrence of the variants in the whole corpus is not uniform and less formal variants are, in general, more frequent than the more formal ones, which has an obvious influence on the above results. Let us, therefore, analyse the distribution of the variants separately. Tab. 3 reveals that "got to" is more frequent in formal situations (0.01867675%) than in informal ones (0.00805053%), and the p-value for this difference is 0.015. Conversely, "gotta" is considerably more popular in informal contexts (0.04954174%) than in formal ones (0.01213989%), and this difference must also be considered statistically significant ($p < 0.0001$). These results clearly confirm Hypothesis 1.

It is also useful to compare the distribution of "got to" and "gotta" with the general distribution of the variants in the *MICASE* Corpus presented in Tab. 2. Theoretically, the frequency of "got to" in the overall distribution should be lower than in formal contexts and higher than in informal ones. Again, the size of the samples representing individual

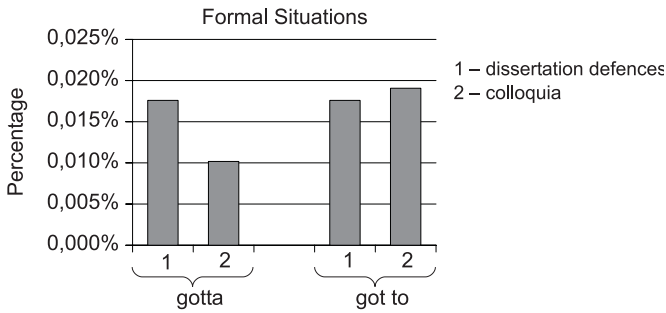

Figure 1. "Gotta" and "got to" in individual formal contexts

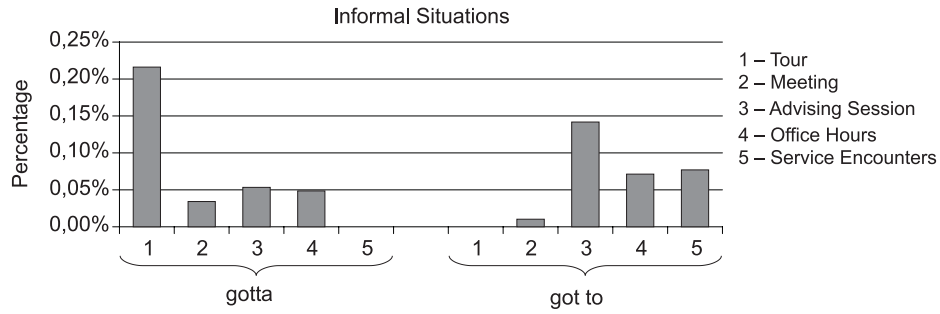

Figure 2. "Gotta" and "got to" in individual informal contexts

contexts is in most cases not large enough for the observed differences to be statistically significant. In fact, the results are statistically meaningful only in "colloquia", where "got to" was used in 0.0190678% of the cases, which is more frequently than in general in the corpus (0.0090891%), and the p-value for this difference amounts to 0.0069. "Gonna", on the other hand, was encountered in 0.0101695% of the cases, which is clearly less frequently than in the entire corpus (0.0344088%), and the p-value for this difference is also satisfactorily small (0.0003). In all other individual situational contexts no statistically relevant associations could be found. Nevertheless, when we compare the general distribution of the variants (cf. Tab. 2) to the way they are used in all formal or informal contexts (cf. Tab. 3), then in most cases the conclusions are statistically relevant. For example, the p-value for the difference between "got to" used in all the formal contexts (0.01867675%) and its frequency in the entire corpus (0.0090891%) is 0.0031. Therefore, it can be stated with certainty that the expression tends to appear more frequently in formal situations. An opposite result may be observed in the case of "gotta", which is used less frequently in formal contexts (0.01213989%) than in general (0.0344088%), and again, the difference must be regarded as statistically relevant ($p < 0.0001$). Additionally, the use of "gotta" in informal contexts versus the overall frequency in the corpus also reveals the expected tendency. The expression is more frequent in the former case (0.04954174%) than in the latter (0.0344088%), and this observation is statistically meaningful ($p = 0.0034$). Only the difference between the use of "got to" in informal contexts (0.00805053%) versus the general frequency of this variant in the entire corpus (0.0090891%) is statistically not relevant ($p = 0.6840$), although even in this case the distribution of the expression coincides with the prediction that it should be less frequent in informal situations.

The distribution of "want to" and "wanna" shows tendencies similar to "got to" and "gotta". The results summarised in Tab. 2 indicate that in formal contexts "want to" is more frequent than "wanna", but again, this difference is not statistically significant ($p = 0.2179$). Still, the opposite situation in informal context should be regarded as highly statistically meaningful ($p < 0.0001$). It is interesting to add that the tendency of the more formal variant to appear more frequently in formal contexts than the informal one, and the more informal variant to be used more frequently in informal situations than formal ones, is also substantiated by the results summarised in Figures 3 and 4, which summarise the distribution of "wanna" and "want to" in individual contexts. In fact, in most of the cases the differences are statistically relevant and the p-values are only clearly above 0.05 in "colloquia", and "service

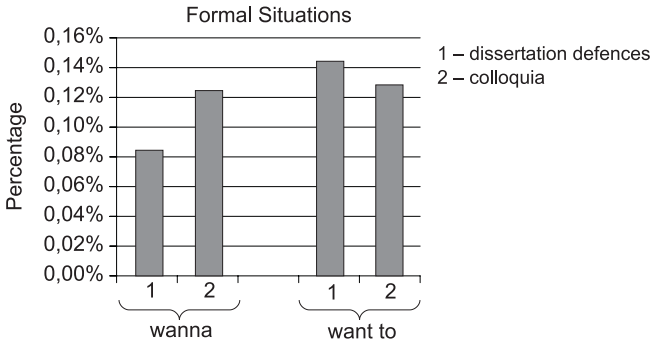

Figure 3. "Wanna" and "want to" in formal situations

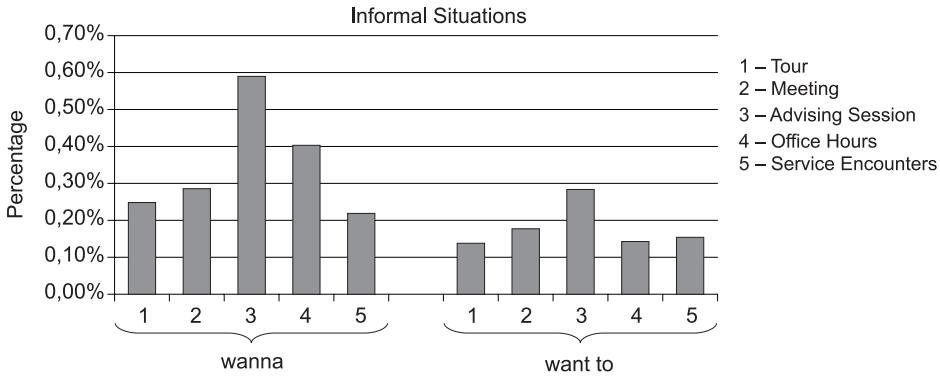

Figure 4. "Wanna" and "want to" in informal situations

encounters" (in "tours" the difference should be treated as marginally statistically significant, because $p = 0.0639$). All this shows that the discussed tendency is fairly strong.

The distribution of "wanna" in all formal contexts versus all informal contexts also confirms the predictions of Hypothesis 1 (cf. Tab. 3). The variant is less frequent in the former case (0.1139282%) than in the latter (0.3734209%), and this difference must be interpreted as highly statistically relevant ($p < 0.0001$). The distribution of "want to" in formal versus informal context is, however, problematic. The variant is actually used less frequently in the former than in the latter, which runs counter to the assumptions of Hypothesis 1. The p-value for this difference is 0.0302, so the results must be treated as statistically meaningful. This particular case should be kept in mind in the subsequent analysis. Although Hypothesis 1 has been confirmed by most of the results discussed thus far, there are exceptions.

As predicted, the frequency of "wanna" in the whole corpus (0.2145681%) is higher than in formal contexts (0.1139282%) and lower than in informal contexts (0.3734209%). The p-values for these differences are below 0.0001 and such results strongly support Hypothesis 1. Also, the distribution of "want to" in formal contexts (0.1326049%) is higher than in the entire corpus (0.1009541%) ($p = 0.0024$), which is in accordance with the expected results. Nevertheless, a comparison between the frequency of "want to" in the selected informal contexts and in the whole corpus is another problematic case, because the variant is, in fact, more frequent in the former instance (0.1659648%) than in the latter (0.1009541%), and this difference is statistically meaningful ($p < 0.0001$). Consequently, it must be stressed that although Hypothesis 1 has been confirmed so far, some of the results do not support it.

Figures 3 and 4 show the distribution of "want to" and "wanna" in individual contexts. The results depicted there clearly indicate the discussed tendencies. In all formal contexts the formal variant "want to" is more frequent than the informal "wanna", and in informal situations the distribution is reversed. What is more, almost all these differences are statistically significant. The corresponding p-values are above 0.05 only in the case of "service encounters".

The variants of the variable (going to) also behave in the way which, in general, corresponds with the assumptions of Hypothesis 1. The results summarised in Tab. 3 demonstrate that in informal contexts "gonna" is more common than "going to" ($p < 0.0001$). The summary of the distribution of the variants in individual contexts provided in Figure 6 also indicates this tendency, and the p-values for the differences observable there are below 0.0001 in all cases. On the other hand, a similar comparison in formal contexts (cf. Tab. 3 and Figure 5) yields results which are not as consistent with the predictions. In these cases, "gonna" is actually more frequent than "going to". This inconsistency, however, does not really undermine Hypothesis 1, because the results are strongly influenced by the general bias in the distribution of the variable "going to" in the entire corpus. As summarised in Tab. 2, "going to" is significantly more frequent than "gonna". A much more reliable analysis, in which the two variants under discussion are examined separately, fully supports Hypothesis 1. "Going to" is more frequent in formal contexts (0.1614410%) than in informal ones (0.1089918%) ($p < 0.0001$) and "gonna" is more frequent in informal situations (0.5592024%) than in formal ones (0.2596069%) ($p < 0.0001$).

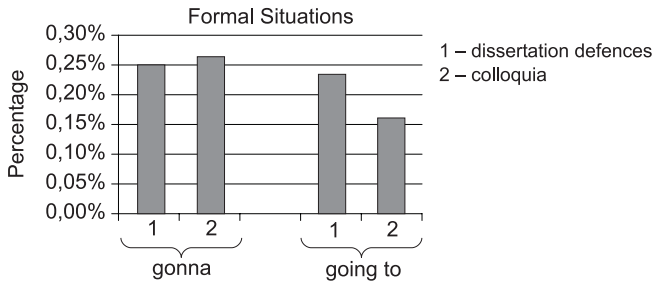

Figure 5. "Gonna" and "going to" in formal situations

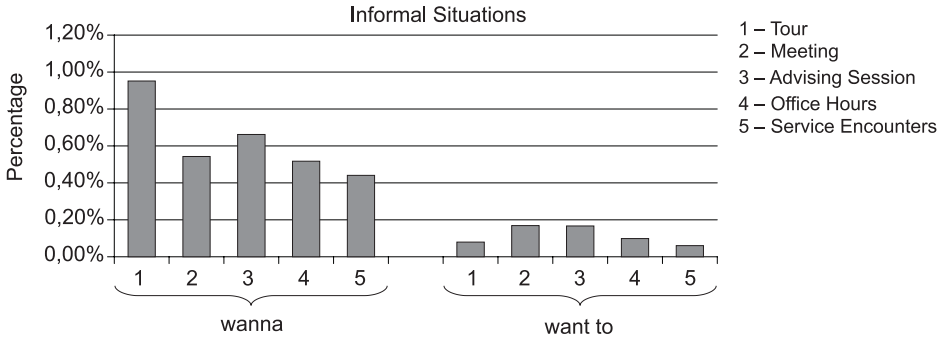

Figure 6. "Gonna" and "going to" in informal situations

A comparison between the distribution of the variants in the examined contexts and the general distribution of the variants in the corpus also supports Hypothesis 1. "Gonna" in general (0.4535903%) is more frequent than in the formal contexts (0.2596069%) and less frequent than in the informal contexts (0.5592024%) (in both cases p-values are below 0.0001). Conversely, "going to" in the entire corpus (0.1158863%) is less frequent than in formal situations (0.1614410%) and more frequent than in the informal ones (0.1089918%) (in the former case $p < 0.0001$, and only in the latter can the difference not be statistically proven because $p = 0.4502$). What is more, the tendencies under discussion are also observable when the general distribution of the two variants in the corpus is compared with the way in which the variants are used in individual contexts, and the differences in such comparisons are also in most cases statistically significant.

All in all, the results discussed in this section indicate that speaker's choice of style is dependent on the level of formality of the situation they are in. This supports Hypothesis 1, according to which the speaker tends to pay more attention to the way he speaks in formal situations than in informal ones.

4.3 Testing Hypothesis 2

Figure 7 depicts the distribution of the two variants of the variable (got to). It is instantly visible that the frequency of the less formal variant "gotta" gradually decreases when the conversational interaction between interlocutors decreases. Conversely, the formal variant "got to" becomes gradually more frequent. This accords with the assumptions that style-shifting depends on the amount of attention the speaker gives to the addressee. In the case under discussion speakers recorded in the corpus tend to shift from more formal to less formal style when their interaction with hearers becomes closer. A similar tendency may be observed in the case of the two variants of the variable (going to) (cf. Figure 9). The informal "gonna" becomes gradually less frequent when the interaction between interlocutors decreases. The only exception is a slight rise in frequency in the case of highly monologic contexts in comparison to mostly monologic contexts. The distribution of the informal variant here is the opposite of what one would expect, but the observed difference is statistically insignificant ($p = 0.125$). What is more, the frequency of occurrence of the formal variant "going to" also aligns with the predicted tendency and the expression is used less frequently in interactive contexts than in monologic contexts.

The analysis of the distribution of the two variants of (want to) yields mixed results (cf. Figure 8). On the one hand, the informal "wanna" is distributed in the expected way: the weaker the interaction between the interlocutors, the less frequently it is used. On the other hand, the frequency of occurrence of "want to" does not seem to be correlated with the change in interactivity. The differences between the results for each of the analysed contexts are minute and statistically irrelevant. Additionally, they do not exactly conform with the expected tendency. The frequency of use of "want to" does not increase with the decrease in interactivity rating.

Figure 10 presents the average distribution of all the informal and formal variants of the three variables tested in the present study. It is easily visible that there is a strong association between the interactivity rating and the frequency of occurrence of "gotta", "wanna" and "gonna". The informal variants become gradually less frequent as the interactivity between interlocutors decreases. It is necessary to underline that the differences between the results obtained in the four contexts are statistically significant. The only case in which the p-value is above 0.05 is the difference between the frequency of occurrence of the informal variants in mostly monologic situations and highly monologic situations ($p = 0.7384$). The mean results depicted in Figure 10 also confirm the prediction that the formal variants

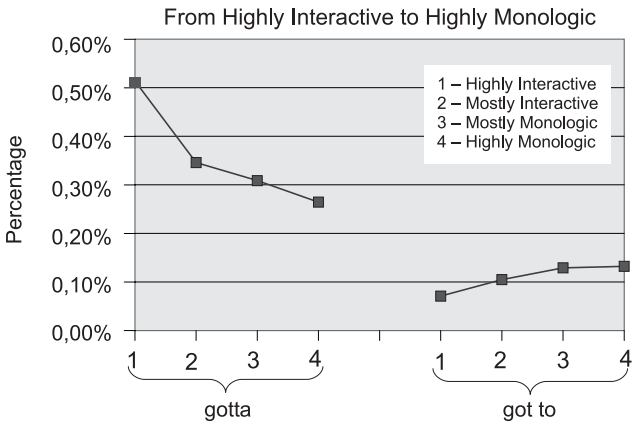

Figure 7. Distribution of "gotta" and "got to" according to interactivity rating

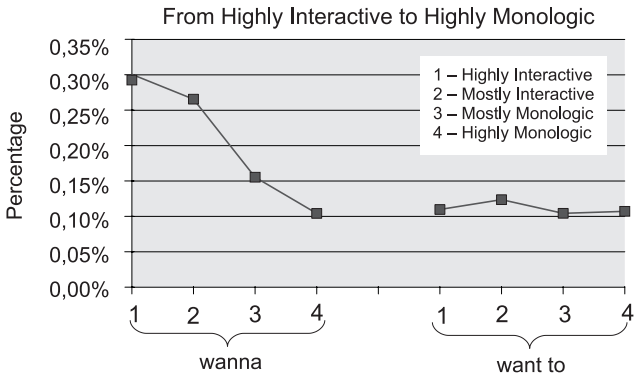

Figure 8. Distribution of "wanna" and "want to" according to interactivity rating

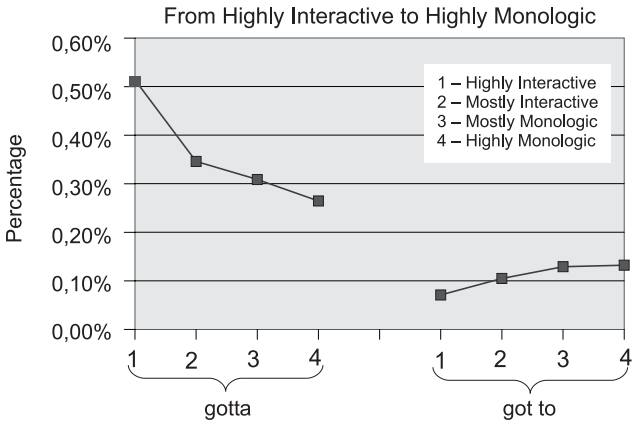

Figure 9. Distribution of "gonna" and "going to" according to interactivity rating

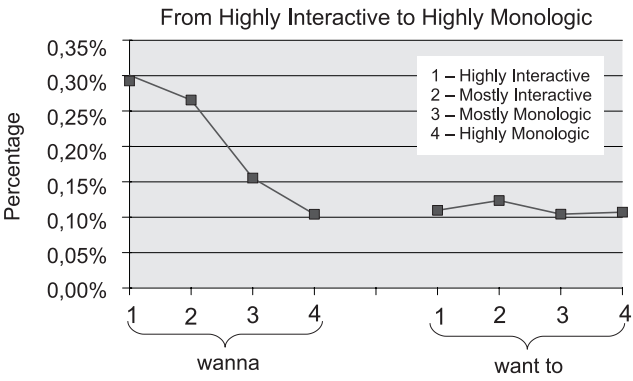

Figure 10. Distribution of informal and formal variants according to interactivity rating

would tend to become more frequent with the decrease in interactivity between the speakers. Again, the differences between the data obtained in each of the four interactional contexts are statistically significant (with the exception of "mostly monologic" versus "highly monologic", in which case $p = 0.3207$).

It is interesting to note that, in general, style-shifting is marked more by the distribution of informal variants than formal ones. As observed above, "got to", "want to" and "going to" are used in a way which supports Hypothesis 2, but in this case the differences are smaller than the differences in the distribution of their informal counterparts. Consequently, it becomes apparent that the speaker marks his style primarily by they use of the informal forms. The more formal counterparts are less active in the process of style-shifting.

5. Conclusion

The present paper examined two basic theories of style-shifting. (The experiment was designed in such a way as to test the theories in a single experiment, using a large, unbiased sample.) The obtained results strongly support both of the proposals in question. Firstly, the attributes used in Labov's experiments have a significant effect on the choice of the variants used in the analysis. The less formal "gotta", "wanna" and "gonna" were relatively more frequent in informal contexts and less frequent in formal contexts. Conversely, the more formal "got to" and "going to" were used less frequently in formal situations and more frequently in formal ones. The only significant exception to this general pattern was the distribution of "want to".

This variant was actually more common in informal contexts than formal ones. This exception shows that we are dealing here only with a tendency rather than an absolute rule. Secondly, the results of the experiment also support the theory of "audience design" (Bell 1984). It is clear that the level of interactivity rating has a direct effect on the distribution of the variants used in the analysis. As the interactivity increases, the more informal variants become more frequent and the formal variants less frequent. There is also an opposite trend when the interactivity between the interlocutors decreases.

All in all, the current findings demonstrate that style-shifting is a complex sociolinguistic phenomenon depending on more than one factor. Indeed, the two aspects investigated in this paper are probably only a small part of the complex system effecting the variation in an individual's speech.

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The 1925 Scopes Trial as a discursive event: Does reference to the 1925 trial affect our view of teachers in the contemporary debate over evolution?[1]

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ABSTRACT

Recent developments in cognitive linguistics and corpus linguistics have found application in discourse analysis. One important contribution by cognitive linguistics is the role metonymy can play in carrying a discourse (Brdar – Brdar-Szabó 2007, Halverson – Engene 2010). What cognitive linguistics identify as metonymy, Jäger and Maier follow Foucault in calling a *discursive event* (2009, cf. Foucault 1972). This article is based on the premise that the 1925 Scopes Trial serves as a discursive event, or metonymical referent, for the continuous controversy over the teaching of evolution in US classrooms. The investigation addresses two related questions: How are teachers portrayed in online news stories covering the current debate on teaching evolution? What role does mention of the 1925 Scopes trial and the image of John Scopes play in shaping the way these teachers are depicted? These questions are discussed as a result of a corpus-based study of the positioning of teachers in articles written on the passage of a controversial Tennessee education bill in 2012.

1. Introduction

It is not uncommon for a certain event to be so closely related to a particular understanding of its impact that the two become indistinguishable. This interpretation then becomes the lens through which the original event and subsequent related events are viewed. Jäger and Maier borrow the term

[1] This paper is part of a presentation given at the CADS conference (Bologna, Italy 2012).

discursive event from Foucault (1972) to explain the power such events have to "influence the development of discourse" on a given issue (2009: 48). Cognitive Linguists refer to this phenomenon as an example of metonymy. One particular event in 20th century American history that has had an influence on a variety of discourses is the 1925 trial of John T. Scopes in Dayton, Tennessee, for teaching human evolution. Echoes of the trial appear in current debates on topics such as academic freedom, evolution education, religion, and law.

This paper will analyze the influence of the 1925 Scopes Trial as a discursive event in news articles about a more recent piece of Tennessee legislation addressing evolution education, SB 893 / HB 368[2]. In particular, it will use tools of corpus linguistics to understand better how teachers are positioned with respect to these articles. As the Trial is a natural historical referent, this paper will also discuss whether or not mention of John Scopes has had an effect on shaping the image of public school teachers. In doing this, it applies a combination of strategies from corpus linguistics and historical discourse analysis (cf. Baker et al. 2008, Reisigl – Wodak 2009).

I will begin with a presentation of the methodological approach including a working definition for discourse and discursive events. Section three provides historical context for the 1925 Scopes Trial and an outline of the bill passed in 2012. A description of the TENN2012, the corpus created to analyze media response to the legislation, follows in section four. The results are discussed in section five. The summary in section six includes an interpretation of the results and offers suggestions for future research.

2. Approach

Although there are many different ways of defining discourse, from the utterance to the text, the verbal to the multi-modal, this study adopts a definition typically applied in corpus-aided discourse analysis. That is, *discourse* is used to describe "recurrent ways of talking […that…] provide familiar and conventional representations of people and events, by filtering and crystallizing ideas, and by providing pre-fabricated means by which ideas can be easily conveyed and grasped" (Stubbs 1996: 158). In other

2 The bills under consideration are given two different names, one for the Senate (SB) and one for the House of Representatives (HB), but it is one bill, jointly agreed upon that is finally passed and put before the governor for approval. Accordingly, I will use "bill" in the singular to refer to the finalized piece of legislation.

words, we are looking at "a set of meanings, metaphors, representations, images, stories, statements and so on that in some way together produce a particular version of events" (Burr 1995: 48, as quoted in Baker 2006: 4).

As mentioned in the introduction, of particular interest to this study is the role of a discursive event in carrying discourse. The term was first proposed by Foucault in *The Archaeology of Knowledge* to describe the discourse that revolves around a particular memory or event (1972). Jäger and Maier further developed this concept to describe events "on the discourse planes of politics and the media intensively, extensively and for a prolonged period of time" (2009: 48). One salient example they give is the Chernobyl nuclear disaster: the word *Chernobyl* alone still prompts a series of anti-nuclear arguments. Other examples of discursive events include the 1999 success of the Freedom Party of Austria (Jäger and Maier 2009), The Assassination of Yitzhak Rabin (Gabay 2006), and Hurricane Katrina (Faux II and Kim 2006). Other researchers have used different terms to refer to a similar phenomenon: Rich identified *Wounded Knee*[3] as a metonymic trope to encapsulate a complex discourse on the nature of US-Native American relations (2004); Wodak and Cillia analyzed the "discursive construction" of the "Rebirth of the Second Austrian Republic" (2007).

As Faux II and Kim point out, "using the discourse event approach allows us to see the multi-layered dimension of an event and explore different contextual influences. Without such an approach, a critical analysis of how to respond to events is incomplete" (2006). It is important to note that a discursive event is not merely the mention of an historical event (as if that were possible, cf. Jäger and Maier 2009, Gabay 2006, Faux II and Kim 2006, Rich 2004, Wodak and Cillia 2007), but a prompt to interpret the news story in the same way the writer does. This creates or reinforces a way of understanding a current event in light of the "accepted" discourse on the topic. As the debate over evolution education continues in the US, this understanding is vital if citizens and elected officials are to respond effectively.

The tools of corpus linguistics were chosen as a means to uncovering the discourse(s) surrounding teachers in the debate over teaching evolution. This approach was chosen because understanding "discourse(s)" as defined above requires seeing how a word or idea is used over a variety of texts (Jäger and Maier 2009: 38). Computerized textual analysis is the most practical means of doing this because it virtually eliminates human error

3 The Wounded Knee massacre occurred in 1890 as one of the last, if not the last, of the American Indian battles.

or oversight in identifying all occurrences of a given word or phrase (cf. Partington 2006, Stefanowitsch 2006). For this reason, corpus tools can also bring to light frequent ways of talking about a topic that might otherwise go unnoticed (cf. Stubbs 1996), and allow for triangulation research methods which increase the strength of conclusions drawn (Baker et al. 2008).

3. Context

3.1 The 1925 Scopes Trial

In the wake of the devastation left by World War I, questions regarding the moral effects of teaching the evolution of man began receiving increased political attention. Numerous legislators in states across the US proposed bills to limit or suppress the teaching of evolution. Tennessee, with the Butler Act in 1925, was the third state to pass such a law and the first to impose a punishment: a fine of 100-500 dollars[4]. The act forbade "teaching that man evolved from a lower animal", although it made no mention of the evolution of other species. There was also no expressed concern about the age of the earth, as can be seen in Bryan's testimony at the trial (cf. Numbers 1992, Larson 1997, 2003).

The trial itself came about as the result of a plan concocted by Dayton businessman George W. Rappelya after reading an advertisement placed by the American Civil Liberties Union (ACLU). The ACLU advertised free legal services for any teacher willing to put forward a test case. Rappelya saw a trial as a way to revive the dying town. He collaborated with other prominent townsmen, including the prosecuting attorney, to convince John Scopes, who had substituted in the biology classroom, to "confess" to having taught the evolution of man. Not long after, three-time Democratic candidate, progressive William Jennings Bryan, volunteered for the prosecution. In response, the well-known lawyer and iconoclast, Clarence Darrow, offered his services for the defense. The result was a circus-like atmosphere of monkey memorabilia and street preachers, which even made a positive impression on H.L. Menken, a reporter known for his cynicism, particularly when it came to the south and the religious (Larson 1997: 93).

Scopes was convicted, but the conviction was later overturned on a technicality. The Scopes decision and continuous proposals for anti-

4 Following Florida and Oklahoma.

evolution bills in other states resulted in publishers virtually removing the word "evolution" from textbooks so as not to lose sales[5]. Despite the apparent victory for those opposed to teaching evolution, most Americans today see the trial as the first in a long line of defeats for anti-evolutionists. Larson ascribes this to ACLU's secondary goal to portray the law as the result of foolishness and narrow mindedness (Larson 2003: 72, 81). This they accomplished through the writings of journalists during the trial, H.L. Mencken being perhaps the most prominent. Later books such as *Only Yesterday: An Informal History of the 1920s* (Frederick Lewis Allen 1931/1997) carried this interpretation of the trial which was later dramatized in the play-turned-movie *Inherit the Wind* (Lawrence and Lee 1955/1960, cf. Larson 2003). This movie is frequently a component in US history or literature courses and is often viewed as a prime example of the debate between science and religion (cf. Larson 1997: 225-246).

It is also worth mentioning that the 1925 trial of John T. Scopes has had a continuing presence in the debate over evolution education, and not only in Tennessee. The title "Scopes II" has been applied to most, if not all prominent court cases regarding evolution education since 1925, as illustrated in Fig. 1. "Scopes II" has also been used to refer to curriculum debates, including certain ones in Kansas in 2004-2005.

Case	Year	Court and Decision
Epperson v. Arkansas	1968	U.S. Supreme court declared it unconstitutional to forbid the teaching of evolution.
McLean v. Arkansas	1981	The U.S. District Court for the Eastern District of Arkansas declared mandating equal time for evolution and creationism violated separation of church and state.
Edwards v. Aguillard	1987	The U.S. Supreme court came to the same conclusion on a case originating in Louisiana.
Kitzmiller v. Dover Area School District	2005	The U.S. District Court for the Middle District of Pennsylvania declared Intelligent Design to be creationism and therefore a violation in the same order as *Edwards* and *Aguillard*.

Figure 1. Examples of "Scopes II"

5 Evidence from *The Corpus of Historical American English* (*COHA*) supports this claim. There is a sharp decline in the usage of *evolution* from a range of 22-34 words per million in each decade after the publication of *Origin of Species* to not quite 15 words per million in 1930. No significant increase is visible until the 1990s; however, even then it does not reach the high frequency of the 1900s or 1920s (Davis, 2010-).

Furthermore, there is at least one reference to the Scopes Trial for every 41 occurrences of *evolution* in *The Corpus of Historical American English* (*COHA* Davies 2010-) and *The TIME Magazine Corpus* (Davies 2007-) combined, and at least one reference per 78.5 instances of *evolution* in *The Corpus of Contemporary American English* (*COCA* Davies 2008-)[6]. Thus, it is reasonable to view the 1925 Scopes trial as a discursive event that has evolved with the debate, carrying certain assumptions about both its contents and its participants. The role of *Inherit the Wind* is worth taking into consideration as well: of the Scopes Trial references mentioned above, the play/movie accounts for 13%, and the book for 16%. Moreover, there is evidence of journalists confusing historical reality with the play's storyline in the TENN2012 corpus, as will be illustrated in some of the examples.

3.2 The current case study: Tennessee SB 893 / HB 368[7]

First put forward in February 2011, House Bill HB 368/Senate Bill 893 (authored by Representative Bill Dunn and Senator Bo Watson, respectively) proposed that science teachers be allowed to discuss controversies related to scientific theories already included in the science curriculum. However, the bill produced its own controversy, primarily because the examples of disputed science topics included biological evolution, chemical evolution, and climate change. In March of 2012, the bill passed both houses with a significant majority and was put before Governor Bill Haslam for a signature that April. His decision to let the bill become law without his signature was made public on April 10. As this research focuses on the positioning of *teacher*(*s*) in the articles, excerpts from the bill containing the word *teachers* are given below. The full text of the bill can be found in the Annex.

> Some *teachers* may be unsure of the expectations concerning how they should present information on such subjects. […] The state board of education, public elementary and secondary school governing authorities, directors of schools, school system administrators, and public elementary and secondary school principals and administrators shall endeavor to assist *teachers* to find effective ways to present the science curriculum as it addresses scientific controversies. […] Toward

6 These are my calculations based on searches for the terms "John (*) Scopes", "Monkey Trial" and "Inherit the Wind".

7 Now filed as Tenn. Code Ann. § 49-6-1030 (2012).

> this end, *teachers* shall be permitted to help students understand, analyze, critique, and review in an objective manner the scientific strengths and scientific weaknesses of existing scientific theories covered in the course being taught. (Tenn. Code Ann. § 49-6-1030, 2012).

4. The TENN2012 corpus

The results of this study are based on a corpus created specifically for studying responses to the Tennessee Bill discussed above, TENN2012. I collected the articles by searching for the phrase "Tennessee 'Teach the Controversy'" using *Google News* and the dates April 5-18, 2012. This means that the articles include speculations and advice for the Governor before his decision as well as various responses that followed. Unless otherwise made explicit, all corpus-based examples in this article come from TENN2012. I have used this corpus previously for other similar projects researching the debate; I quote my rational for choice of search terms here:

> I chose to search for the phrase "Tennessee 'Teach the Controversy'" rather than the name of the bill or other metonymic references to the bill as I discerned, from previous reading, that such a search had the greatest chance of producing articles neutral to the bills' passage. This decision was reached based on the fact that the "teach the controversy" is the reasoning or argument presented by the bills' supporters and echoes the language of the bill itself, which is meant to address the teaching of "controversial issues" in science (Barczewska, forthcoming).

The search retrieved 159 articles, 29 of which were duplicates, unusable daily or weekly news digests, or simply irrelevant. A further problem was related to the procurement of articles, some of which required a subscription. The remaining 118 articles (62,696 words) were categorized according to origin, genre, and reference to the 1925 Scopes Trial. The number of articles and words analyzed for each category can be seen in Fig. 2. A description of the categories follows below[8].

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8 The findings are consistent with what could be expected according to Pennebaker and Banasik's study on collective memory (1997). Their research suggested that the closer a place was to a tragedy, the less likely it was to be mentioned or commemorated

Source	Totals		Scopes (S)		No Scopes (NS)		% Scopes	
	articles	words	articles	words	articles	words	articles	words
Local (Tennessee)	26	12971	11	6431	15	6540	42%	50%
newspapers	5	2461	1	309	4	2152	20%	13%
newspaper blogs/opinion	12	6256	6	4392	6	1864	50%	70%
Blogs	5	3226	2	1180	3 (same source)	2046	40%	37%
TV/Radio	4	1028	2	550	2	478	50%	54%
Southern States	5	3081	3	2167	2	914	60%	70%
National	74	40143	51	26610	23	13533	69%	66%
News	22	9622	21	9464	1	158	95%	98%
News blogs/opinion	9	4413	5	2534	4	1879	56%	57%
Blogs	35	21452	17	9956	18	11496	49%	46%
TV/Radio	8	4656	8	4656	0	0	100%	100%
Foreign	12	6501	11	6188	1	313	92%	95%
TOTAL	117	62696	76	41396	41	21300	65%	66%

The number of words/tokens in the articles includes the headlines, but not other information such as author, date, and publication

Figure 2. Google News Search Results: "Tennessee 'Teach the Controversy'" (April 5-18, 2012)

This follows the classification for the projects mentioned above, so I will quote the previous description of my classification system.

> Newspaper articles were thus classified if the website identified itself with a print newspaper or as an online newspaper. Included are press releases. Newspaper blogs/opinion refers to blogs on newspaper websites as well as opinion/editorial articles and letters to the editor.

there. As an example, they cite Dallas, TX which did not have a memorial to John F. Kennedy until about 25 years after his assassination. Similarly, Memphis, TN did not have a monument to Martin Luther King, Jr. until about 25years after his assassination in that city (pp. 11-13).

The term "blogs" was used for all other sources not directly related to a newspaper or TV/Radio station. Virginia, Texas, North Carolina, Missouri are the southern states appearing in this corpus (Barczewska, forthcoming).

The examples from the corpus provided below are marked according to the scheme in Fig. 3. Throughout this article S and NS will be used to abbreviate TENN2012_S and TENN2012_NS, respectively. The original analysis was conducted with Wordsmith 5.0, but subsequently with Wordsmith 6.0. Concord was the primary research tool used for the analysis.

Source	Marker
Local (Tennessee)	
Newspapers	LN
Newspaper blogs/opinion	LNB
Blogs	LB
TV/Radio	LRTV
Southern States	S
National	
News	NN
News blogs/opinion	NNB
Blogs	NB
TV/ Radio	RTV
Foreign	F

Figure 3. Marking Scheme for TENN2012

5. Results

I will begin by identifying how John Scopes was presented in the corpus. Those results will then be available for comparison with the way in which current teachers are presented in the corpus.

5.1 Retextualization of John Scopes

Wordsmith concord identified 154 instances (3.72/1000ww.) of *Scopes* in the S sub-corpus. Of these, 78 are references to the trial and 3 are used to identify Clarence Darrow as his attorney. Collocates of the remaining 73 references

to John Scopes describe him as a *high* (16/6.7)[9] *school* (23/6.0) *biology* (4/4.8) *science* (16/3.6) *teacher* (38/7.1) who was *convicted* (8/7.3) of *violating* (23/7.3) a Tennessee law against *teaching* (9/3.2) *evolution* (8/2.2). While not exactly signifying lies, these terms are variously interpretable as Scopes was not explicitly a science teacher, but rather a math teacher who had substituted in a biology class. Furthermore, it could be argued that the choice of the lemma [violate] (35, 0.85/1000ww.) over the lemma [break] (7, 0.16/1000ww.), with a relatively frequent use of *flouted* (3, MI=8.1) in connection with the Butler Act, implies volition or moral activism on the part of Scopes. This impression is exemplified in the following lines from the TENN2012_S sub-corpus.

(1) John Scopes, a biology *teacher* who **flouted the state's ban on evolution** […] **(**NN×3)[10]

(2) The ACLU, attorney Clarence Darrow, and *teacher* John Scopes **teamed up to challenge the bill** […] (LNB)

(3) Scopes **presented an enduring lesson in the importance of standing up for science and the truth**. (NNB, NN)

(4) Tennessee *teacher* John Scopes **appealed for the right to teach students all of the scientific evidence** (NN×2)

These extracts clearly present John Scopes as an active participant in the heroic struggle for truth in education and academic freedom. The first even portrays him as a biology teacher who intentionally set out to break the law. Even proponents of the new legislation present Scopes in this light (4). That said, (3) could be understood metonymically; it may refer to the trial and the surrounding events rather than to the historical person of John Scopes. The vagueness provides a link between the person, the trial, and the moral the writer wants to emphasize. It is an example *par excellence* of Scopes being used discursively to highlight an image of John Scopes and his trial that is linguistically enforced throughout the S sub-corpus.

While (1)-(4) focus on Scopes as an intentional hero; he is also profiled by some as a victim of unjust persecution by "religious zealots".

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9 The numbers in parentheses show the raw frequencies of occurrence of these words and the specific mutual information (MI) score for the word as a collocate of *Scopes* in the S sub-corpus.

10 This particular phrase occurred in three different articles within the National News section of the S sub-corpus.

(5) OakTree wrote: …**Who initiated the prosecution of John Scopes**? Who pushed for this legislation? Religious zealots, who cannot win over the public to their position by the reasonableness…[11] (LNB)

While historically inaccurate, this quote illustrates the license of cinema: *Inherit the Wind* begins with four men, including a local priest, arresting Bertram Cates during his biology lesson[12].

To summarize, the articles tend to present Scopes as a purposeful hero, even a martyr, for science. They draw upon the image of the scientist as pure and unbiased, as discussed by Lessel (1989) and Nelkin (1987) in their research into the portrayal of scientists in the news media. Additionally, they draw upon the American value of non-violent resistance in standing up for one's principles. This is also consistent with the image of Scopes presented in the press of his day.

> Mr. Scopes, who is hardly more than a boy and whose pleasant demeanor and modest bearing have won him many friends since this case started, was nervous. His voice trembled a little as he folded his arms and said:
> "Your Honor, I feel that I have been convicted of violating an unjust statute. I will continue in the future, as I have in the past, to oppose the law in any way that I can. Any other action would be in violation of my idea of academic freedom, that is, to teach the truth as guaranteed in our Constitution, of personal and religious freedom. I think the fine is unjust". (*New York Times* 1925).

The question which should be raised, then, is whether or not the image of John Scopes as a symbol of intellectual integrity in the fight for academic freedom has been transferred to the portrayal of the teachers in the Tennessee of today. Firstly, we will look at the presentation of teachers in articles that avoid direct mention of the Scopes Trial. Then, we will look for examples within articles referring to the trial with a view to finding any differences that the presence of the hero/martyr Scopes makes in the way teachers are presented.

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11 While comments were not included in the corpus in general, one article was based on "the best" quotes related to the Tennessee controversy and those quotations that were included as part of the actual article were kept in the corpus.

12 Bertram Cates is the character in *Inherit the Wind* who was based on John Scopes.

5.2 *Teachers* in the NS sub-corpus

There are 126 occurrences of *teachers* within the NS sub-corpus (5.87/1000 ww.). We will begin with a look at the most frequent collocates to the left and right of *teachers* as illustrated in Fig. 4.

Top 10 L1 collocates			Top 10 R1 collocates	
SCIENCE	17 (3.708)	*teachers*	TO	35 (3.170)
FOR	11 (3.715)		WHO	17 (5.503)
ENCOURAGE	11 (7.553)		ASSOCIATION	14 (6.579)
PROTECT	9 (7.585)		THAT	4 (0.664)
ALLOW	8 (5.508)		IN	4 (0.631)

Figure 4. Top 5 L1 - R1 collocates of teachers in the NS sub-corpus after lemmatization

As may be expected, *science* and *association* are frequently found together in reference to the Tennessee Science Teachers Association (8 occurrences) and the Earth Science Teachers Association (5 occurrences). Likewise, the remaining R1 collocates can be seen as extensions of *encourage/allow/protect + teachers*. While it is common practice to focus on content words, function words can also provide key insights. In this corpus *for* is also used in phrases granting permission or protection:

(6) opens the door for *teachers* to **legally distract students with frivolous content** (LNB)[13]

(7) The bill 'provides guidelines' for *teachers* **when answering students' questions** (NB)

(8) effectively granting permission for *teachers* to **bring religion into the classroom** (LB)

(9) essentially granting permission for *teachers* to **violate the First Amendment** (LB, NB)

(10) protections for *teachers* who **discuss the 'weaknesses' of scientific theories** (LRTV)

[13] As section 5.2 focuses exclusively on the NS sub-corpus, only the source/genre markings are included.

(11) **a permission slip for** *teachers* to bring creationism, climate-change denial, a (NB, 2×)

It is not surprising to frequently see comments on the fact that the bill gives permission; that comes from the language of the bill itself. What is interesting is the tendency to think that the teachers will do something sinister with this freedom: five comments suggest teachers will bring in creationism or religion, both of which are illegal in the US science classroom, and two convey the notion that this law will allow teachers to violate the first amendment. Also of interest is the comparison of the law to a *permission slip* (11)[14]. This is of particular interest as a permission slip is something minors must have signed by parents or teachers in order to leave the classroom or to attend special activities. Analysis of this compound in *COCA* (Davies 2008-) suggests that when *permission slip* is used figuratively it has a negative connotation: it implies either that a situation might be misunderstood resulting in negative consequences (12), or that the subject is independent or mature enough not to need permission to do something that the speaker believes is a natural right/duty (13).

(12) Are White House people worried that that might be *a permission slip* for some voters to go vote for the other guy if he gets (COCA)

(13) gave them the back of his hand by saying, America will never seek *a permission slip* to defend the security of our country.' (COCA)

Figuratively or literally, *permission slip* implies that its possessor lacks the maturity and/or authority to make decisions independently. It is particularly ironic in (11) as it is usually teachers who are establishing/confirming a student's right to do something. Hence, such word choice could be understood as condescending.

When not used as a tool to quote or paraphrase the new bill, *allow* and *encourage* paint a similar picture. A few examples from TENN2012_NS are provided below:

(14) allow *teachers* to **promote their personal beliefs in the classroom**. (LN)

(15) allow *teachers* to **reiterate many of the spurious arguments** (NB)

14 This statement of NCSE's Eugenie C. Scott quoted in Nature was found in both sub-corpora.

(16) allowing *teachers* to **point out flaws in widely held scientific theories** (LNB)

(17) encourage *teachers* who would **introduce pseudo-scientific criticisms inspired by religion or ideology** (NNB)

(18) encouraging *teachers* to **intentionally confuse their students** (LNB)

While the neutrality of statements such as (7) and (14) depends on the readers' perspective of the evolution debate, other statements echo the distrust of teachers displayed in the use of the compound *permission slip*. If there are teachers prone to "intentionally confusing" their students or "reiterating… spurious arguments", those problems should be addressed as methodological issues, regardless of whether or not the bill is passed.

The R1 collocate *who* occurs in the context of protecting or providing legal cover for the teachers. In 58% of the cases, the context is a situation in which the teacher would do something the journalist disapproves of[15]. Most other uses of *who* follow a pattern of quoting or paraphrasing the bill. Those that do not, and are not included above, are presented in (19) and (20):

(19) "[…] *teachers* who **run off the rails**", he said. (NB)

(20) *teachers* who **wish to dress up religious beliefs** (LB, NB)

When looking at phrasing, it is also important to ask what is not said (cf. Baker 2006). The choice to use a defining relative clause featuring *who* rather than a conditional clause in *if* implies that "run[ning] off the rails" and "dress[ing] up religious beliefs" is something teachers are in a habit of doing already. The overall impression presented in the sub-corpus is that the bill gives the teachers a dangerous freedom that they are likely to abuse. This presents a negative picture of educators in the public school system: their authority is ignored and their professionalism is questioned. In their discussion of methods for corpus-aided discourse analysis, both Partington (2003) and Baker (2006) suggest that different results can be obtained by searching for a word in its singular and plural forms. Thus, the next step is to see if individual teachers are able to stand out from the crowd and serve as heroes, as Scopes did. This is what we find:

15 This is a conservative number. Depending on one's approach to the legislation, the number could be higher.

(21) …K-12 do **not have the capability to undertake such a task**. All the science *teacher* can do in such circumstances is select a partial set of evidence-(NB)[16]

(22) …is a **betrayal of the trust** children place in their *teacher*… (NB)

(23) **Orwellian misdirective** name of "Academic Freedom", …Likewise if you are a History *Teacher*, you can decide that you want to teach that Ceaser was never assassinated… And if you a Math *Teacher*, you can teach 2+2=5, that's your Academic Freedom[17] (NB)

(24) …exposure to science **tainted** by a *teacher* with a **creationist agenda**… (NB)

The individual teacher fares no better. The initial compliment of a teacher being a person the children trust is significantly weakened by the implication that a teacher would be inclined to betray that trust. Again, the use of *is* implies that this misdeed occurs. Furthermore, teachers are described as lacking the training (or intelligence) to teach their assigned subject. While for some, these comments may seem in line with the perceived dangers of the bill, they should also raise questions as to what extent the community trusts teachers to educate their children in general. The example in (23) makes use of hyperbolic exaggeration to suggest that the application of the term "Academic Freedom" to justify teaching weaknesses in Darwinism is comparable to using it to justify teaching 2+2=5. The insult is double: it both accuses the bill's authors of insincerity and teachers of abusing the system. It expresses the content of other statements, such as (17) and (18), but does so through hyperbole and metonymy[18].

Nevertheless, there is one teacher that survives this scathing review: biology and anatomy teacher Derek DeSantis. His wife, Larisa DeSantis, the professor who organized a petition against the bill, is widely quoted in a positive light in the corpus. However (27) shows the only situation in which she is referred to as a 'teacher'. It is worth noting that she herself applies the label, perhaps as a means of identifying with those in the K-12 public school system.

16 K-12 is a commonly used abbreviation for Kindergarten through 12th grade in the US educational system.

17 Spelling errors are those present in the corpus.

18 A word of appreciation is due an anonymous reviewer who drew my attention to the need to expand on the figurative nature of concordance lines (23) and (29).

(25) Derek DeSantis, a high school biology and anatomy *teacher* and the husband of Larisa DeSantis, the Vanderbilt University paleontologist […] (NB)

(26) He added, "Honestly, as an educator and a parent, as a *teacher* in the system, I don't see the need for [the law]." (NB)

(27) As a science *teacher* I would say there is no controversy over evolution or climate change […]." (NB)

Here, DeSantis is given the respect that the other teachers are denied. Although he claims his source of authority is his position as a teacher (and parent), this is open to debate as the content of the articles in general does not seem to assume unconditional trust in the science teachers. It is worth asking whether his authority to speak for the science teachers is granted instead as a result of who he knows (his wife, the university paleontologist) or of his opinion on the bill (not seeing controversy over evolution). Derek DeSantis is not mentioned by name in the S sub-corpus although his wife is quoted as a scientific expert[19].

To summarize, the NS sub-corpus seems to portray teachers in a negative light. This is accomplished by highlighting not only their need for permission but also the likelihood that they will abuse additional freedoms or protection granted them in the Tennessee legislation. Furthermore, it appears that the only way to be worthy of trust is through identification with a university professor. The average K-12 teacher's judgment and motivation are placed under suspicion. This is true whether the teachers appear in the plural or singular form.

5.3 Scopes sub-corpus

I will now turn to the articles in which John Scopes and his trial are mentioned to see whether or not Scopes is able to raise the profile of the teacher and the teaching profession.

Here we will start with the singular *teacher*, which occurs 75 times in the S sub-corpus (1.81/1000 ww.). After removing phrases used as direct modifiers of (*John*) *Scopes*, there were 20 concordance lines to be analyzed (0.48/1000ww.). One refers to an unnamed Tennessee teacher who had chosen to violate the very same Butler Act in 1967. Here, *teacher* bears

19 The only related lines in TENN2012 S are quoted in (27).

a positive connotation. The Butler Act, or the people/government behind it, is portrayed as a hindrance.

(28) until 1967, when it was repealed – just in time to avoid a class action lawsuit led by a Tennessee *teacher* who had been fired for violating the act (F)

However, not every teacher is as well respected in the corpus as the gentleman mentioned above. On the contrary, it is feared that a teacher may abuse the new law and behave irresponsibly because of his or her religious beliefs.

(29) I wonder what repercussions a *teacher* would face if he/she introduced "Pastafarianism" to the classroom[20]. (NNB)

(30) Our fear is that there are communities across this state where schools are very small and one *teacher* is the science department, and they also happen to teach a Sunday school class. (NN×2, F)

The question is as much over what constitutes a good law, as it is over what constitutes a good teacher. For some, meaning most writers represented in TENN2012, a 'good teacher' teaches evolution as presented in the textbooks. It also seems that these authors feel it would be better for a teacher to have no public role in a religious community as that could interfere with professional responsibility in the science classroom.

Proponents of the new law disagree. In their opinion, a 'good teacher' will support discussion over a range of 'sides' to any given issue without falling into the trap of teaching religion or creationism. They claim that this openness invites critical thinking and follows the Scopes legacy more faithfully than the current approach to teaching evolution.

(31) the law defends a principle Scopes himself had endorsed in the following statement: "If you limit a *teacher* to only one side of anything, the whole country will eventually have only one thought"

20 "Pastafarianism" is in reference to a satirical religion that developed as a response to organized religions, Christianity in particular (see http://www.venganza.org/about/). The quote does not suggest a teacher would actually introduce Pastafarianism, but by presenting a satirical religion the author makes a sweeping comment about other religious beliefs or worldviews that a teacher may convey to his/her students. Alternatively, it may be implying that the aim of the bill is to promote one religious understanding of origins, but may not be so accepting to "Pastafarianism".

As seen above, however, this is not the prevalent opinion in the corpus. One blogger wrote: "Haslam does not believe that the bill "changes the scientific standards that are taught in our schools or the curriculum that is used by our teachers." Yet this will only hold true if a student has a worthy and respectable science teacher. Qualified teachers will continue to abstain from teaching creationism" (Yahanda 2012). Yahanda's understanding of the law seems to represent the tone of the corpus as a whole[21].

From what has been analyzed thus far, the general consensus appears to be that most students will not be fortunate enough to have such a teacher. Similar concerns are visible when looking at the plural *teachers*. There are 314 instances of *teachers* in the S sub-corpus (7.5/1000ww.). As with the NS sub-corpus, I will begin with the key L1 and R1 collocates for *teachers.* The results are similar to what was found in that sub-corpus: *science, school* and *biology* describe the type of teaching, and the combination [protect/allow/encourage] + *teachers* + [to/who/from] explains what it is thought the new bill will mean when applied[22].

Top 10 L1 collocates			Top 10 R1 collocates	
PROTECT	47 (8.150)		TO	90 (3.285)
SCIENCE	41 (3.846)		WHO	47 (5.275)
ALLOW	31 (5.439)		FROM	24 (4.618)
THAT	18 (1.684)		ASSOCIATION	18 (4.996)
SCHOOL	17 (4.528)	*teachers*		
GIVE	14 (6.862)			
ENCOURAGE	14 (6.004)			
FOR	13 (2.385)			
OUR	13 (4.170)			
BIOLOGY	12 (5.392)			

The numbers in parenthesis are the MI relation scores for relations within the S sub-corpus

Figure 5. Top L1 and L2 collocates of teachers in the S sub-corpus after lemmatization

Once again, the majority of the specimens are quotes or paraphrases of the law. These phrases express fears similar to those found in the NS sub-corpus. Some examples are presented in (32) – (38). The compound *permission slip* is

21 Haslam's much quoted explanation for his decision is the reason for the word *our* appearing as a frequent L1 collocate.

22 More collocates are given for *teachers* in this sub-corpus as the database was larger and there were more collocates that occurred more frequently in the L1 position.

used again, this time by two different speakers. While outside the scope of this study, it may be worth mentioning that (38) is an extension of the same statement found in the NS sub-corpus (9) and (20); however, the author of the article chose to quote it differently. What is particularly interesting is that *permission slip* was used exclusively in quotes made by two spokesmen, one whose job it was to support science teachers, and the other to protect civil liberties[23]. Irrespective of one's position on the bill, it is difficult to see the use of that phrase as an expression of solidarity with the teachers of Tennessee.

(32) allow *teachers* to **inject Intelligent Design** and **neo -creationism**. (F, 4×)[24]

(33) allow *teachers* to **teach creationism** in the classroom. (F)

(34) allow *teachers* to **introduce any idea they want** into the science curriculum, religious (NN, 3×)

(35) encourage *teachers* to **interject** their **personal non-scientific** and **religious views** (NN)

(36) *gives* **legal cover** to *teachers* to **introduce pseudo-scientific** ideas (NN, 2×)

(37) is effectively **a permission slip** for *teachers* to **violate the First Amendment** by allowing *them* to **dress up** their **religious beliefs on the origin of life as pseudo-science**,' Weinberg said. (S, NN, F)

(38) a permission slip for *teachers* to **bring creationism, climate-change denial** and other **non-science into science classrooms** (NB)

One marked difference, which may or may not be coincidental, is that some articles in the Scopes sub-corpus aim at clarifying what the law does *not* allow, which would counter the concerns above. However, that is an issue for another study as our focus is not on the ramifications of the law, but on the presentation of the teachers. The perception of the teachers presented in the S sub-corpus is that they will (mis)read the new bill as permission or even encouragement to do a host of things that have been identified by US courts as unconstitutional, such as teaching religion or creationism.

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23 Hedy Weinberg is the executive director of the American Civil Liberties Union of Tennessee.

24 The (4×) signifies that the same selection of words occurred four times in that segment of the sub-corpus.

Thus, both sub-corpora portray the average teacher in a negative light. It appears to be a common consensus that as a group, public school science teachers, especially those in Tennessee, tend to be irresponsible and dangerously inclined to teaching religion instead of science if given the opportunity. In the sense that they need guidelines, permission, protection and instruction, they do not seem to have much more authority than their pupils do. While the individual teacher may be a 'martyr', it seems the consensus from the corpus is that he/she is more likely to be a 'wolf' in scientific attire.

6. Summary and concluding thoughts

The hypothesis that the Scopes trial is a discursive event that brings integrity to the teaching profession was not supported by evidence in the corpus. Although the proponents of the bill tried to draw on the heroic image of Scopes as an advocate of Academic Freedom in order to support the teaching of "scientific weaknesses", their attempt to redefine the discourse surrounding the 1925 Scopes trial was not reflected in other articles of the sub-corpus.

While some may regard this to be an obvious outcome considering the nature of the debate, the visible lack of trust and respect among teachers, parents, legislators and journalists may be an indication of a larger problem in the American school system. It would be interesting to see whether or not a similar tone of distrust is present in the news when other areas of education are discussed.

Not only does this research indicate the need for further study on the discourse surrounding teachers and the educational system, it also suggests a need to rethink the role that discursive events play in creating discourse. It appears that the impact of the formulation of these events is dependent on a variety of factors. One possibility in this case is that the religion-science, or evolution-creationism, dichotomy has become the discursive lens through which the Scopes trial is viewed. As a result, other aspects of the discourse surrounding the trial, such as the heroic image of Scopes as a teacher fighting for academic freedom, are overshadowed. Regarding the similarities between the two corpora, it seems that the image of the Scopes Trial is so well entrenched in American culture that the mention of *evolution* and *Tennessee* together is enough to trigger a "Scopes Trial" discourse without explicitly mentioning the event. This suggests a need to look deeper into the cognitive mappings involved in figurative language and discourse creation,

particularly in the case of event metonymy. Additionally, a comparison of the language used in reporting the trial in the 1920s to that used in its numerous retellings and reenactments could also shed light on the development of discourses surrounding evolution education. Any diachronic study of the evolution debate would benefit from making that comparison using the modern tools of corpus linguistics.

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