Morphology recycled: The Principle of Rhythmic Alternation at work in Early and Late Modern English grammatical variation

Julia Schlüter

1 Introduction

The present contribution is part of a research programme that explores linguistic variability as a source of new insights into the workings of functional factors in language.[1] It is assumed that grammatical variation and change are determined by a network of interacting factors which may reinforce or counteract each other. Some factors that deserve mention here are, among others, semantic tendencies, stylistic biases, cognitive complexity, avoidance strategies, frequency and requirements of information structure. The focus of this paper is on phonological factors, which have been frequently neglected or even ruled out as determinants of grammatical variation. In particular, I will concentrate on the Principle of Rhythmic Alternation, whose effects will be illustrated with reference to a number of variation phenomena.

For the Principle of Rhythmic Alternation, Selkirk (1984:37) proposes the following definition: "There is arguably a universal rhythmic ideal, one that favors a strict alternation of strong and weak beats." It follows from this that an ideal rhythm consists of a stressed syllable followed by an unstressed syllable, followed by a stressed syllable again, etc. Put differently, both sequences of stressed syllables ('stress clashes') and sequences of (more than two) unstressed syllables ('stress lapses'[2]) tend to be avoided.

Making reference to the Principle of Rhythmic Alternation, the data reviewed in this paper support the claim that in areas involving rhythmically different grammatical variants, those variants which give rise to a regular succession of stressed and unstressed syllables will be preferred over those leading to stress clashes or lapses. Relevant effects of this type have been pointed out by Fijn van Draat (1910; 1912a; 1912b) and Bolinger (e.g. 1965) for English prose as well as by Stroheker (1913), Bihl (1916) and Franz (1939) for versified language. I aim to buttress these authors' findings by providing quantifiable empirical evidence for the effectiveness of this principle in explaining the determination of grammatical choices and linguistic change.

All of the analyses to be presented in the following subsections illustrate cases in which grammatical morphemes and markers are available as rhythmic buffers that can be optionally inserted in accordance with the Principle of Rhythmic Alternation. Section 2.1 takes a look at the rhythmic conditioning of the gradual loss of the formerly obligatory participial suffix *-en*, showing that the past participle *drunken* was preserved in certain rhythmically defined environments. Section 2.2 focuses on the establishment of the adverbial suffix *-ly* and the facilitating or inhibiting role of rhythm in this respect. The adverb *scarcely*, variably replaced by its suffixless counterpart *scarce*, is chosen to exemplify this process of linguistic change. Section 2.3 deals with the variable marking of infinitives dependent on the verb *make* in the passive. It will be demonstrated that, as long as the infinitive marker is not obligatory in this construction, the influence of rhythm manifests itself by slowing down the rate of change in favourable contexts. Finally, section 2.4 analyses the variable presence of the *a*-prefix in *-ing*-forms associated with the verb *set*. While English usage exhibits an up-and-down evolution in this respect, the effect of rhythmic alternation is noticeable at every historical stage. All of these studies are concerned with intermediate phases of language change in which morphemes and markers are no longer or not yet quite obligatory in terms of grammatical motivations. It is precisely in such phases of grammatical indeterminacy that the Principle of Rhythmic Alternation assumes the role of an influential determinant.

Notes

[1] This work is part of the research project "Determinants of Grammatical Variation in English", based at the University of Paderborn (Germany). I would like to thank the Deutsche Forschungsgemeinschaft (grant No. RO 2271/1-1) for financial support and Teresa Fanego as well as an anonymous reviewer for many useful comments on previous versions of this paper.

[2] Depending on the linguistic background of the researcher, the notion of 'stress lapse' is variously defined as a sequence of two (cf. Plag 1999:156) or three (cf. Selkirk 1984:49 and Kager 1995:382) unstressed syllables. It is agreed that the presence of only one unstressed syllable separating two stressed ones represents an ideal constellation. There is evidence in the above-mentioned works that the avoidance of sequences of more than one unstressed syllable is a matter of degree: two unstressed syllables are universally avoided less strongly than three.

2 Empirical studies

Methodologically, the present work is based on a large collection of historical corpora (details are given in the references). The database covers the 16th to 19th centuries, i.e. the Early and Late Modern English periods. However, where appropriate, the data are placed in a wider context, ranging from Middle English to late 20th century English.

2.1 The distribution of mono- and disyllabic past participle variants

Even today, variation in the form of the past participle of irregular verbs is still a frequently encountered phenomenon. Variants belong to different verb types and involve ablauted, suffixless forms and syncopated weak forms which may or may not be (re-)suffixed with *-en* or *-ed*. In many of the relevant cases the variants differ not only in their morphological shape, but also in their prosodic properties, i.e. a monosyllabic form as opposed to a disyllabic form, equipped with an additional participial suffix. The list of examples includes *drunk/drunken*, *shrunk/shrunken*, *sunk/sunken*, *struck/stricken*, *swelled/swollen*, *shaved/shaven*, *fit/fitted*, *knit/knitted*, *quit/quitted*, *lit/lighted*, *chid/chidden*, *trod/trodden*, *got/gotten*, etc. In earlier forms of English (as well as in modern dialects), the number of variants was considerably greater (cf. Fijn van Draat 1912a:27ff; Stroheker 1913:42ff; Franz 1939:166ff; Bolinger 1965:145ff).

The following empirical study focuses on the past participles of the verb *drink* and investigates the variable preservation of the Old English participial suffix *-en*, which underwent a gradual process of degrammaticalization, having been omissible in the participle since the 13th century (*OED 2 on CD-ROM*, s.v. *drink*).[3] The database is composed of the Middle English section of the *Helsinki Corpus* (*HC*; 1150-1500; 0.6 million words), the *Early English Prose Fiction* corpus (*EEPF*; 1518-1700; 9.6 million words), the *Eighteenth-Century Fiction* corpus (*ECF*; 1705-1780; 11.2 million words[4]), the *Nineteenth-Century Fiction* corpus (*NCF*; 1782-1903; 37.6 million words), and the *British National Corpus* (*BNC*) imaginative prose section (1964-1993; 19.7 million words). All occurrences of *drunk* and *drunken* are classified according to their syntactic functions. The first category, labelled 'simple attributive uses', contains all cases in which the participles immediately precede a noun and are not premodified themselves; cf. example (1):

(1) The **drúnken wrétch** fell off the sofa, and fell on to the floor, where he stayed; … (William M. Thackeray: *Catherine*, 1839-1840; *NCF*)[5]

The second category comprises all uses that are not simple attributive ones. This involves, in particular, the large number of non-attributive occurrences of *drunk* and *drunken*, such as postnominal uses, as in example (2), predicative uses, as in example (3), nominalized uses, as in example (4),[6] and verbal uses, as in example (5):

(2) The beating of drums, the rattle of tomtoms, and the yells and howls of the rebels, **drúnk** with opium and with bang, were enough to remind us all the night of our dangerous neighbours across the stream. (Sir Arthur Conan Doyle: *The Sign of Four*, 1890; *NCF*)

(3) "I would lie a wager they are all **drúnk** in an hour," said he, … (Meadows Taylor: *Confessions of a Thug*, 1839; *NCF*)

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[3] The following orthographic variants were retrieved from the corpora: *drun(c)k(e)*, *dron(c)k(e)*, *dran(c)k(e)*, *drūk(e)* and *drōk(e)* as suffixless forms (for ease of reference subsumed henceforth under the spelling *drunk*); *drun(c)ken*, *dron(c)ken*, *drūken*, *drōken*, *drunkyn*, *drunkun* and *drunkē* as suffix-containing forms (subsumed under the spelling *drunken*). In the corpus search, a wildcard was prefixed to these forms to include all premodified and orthographically fused forms. All past tense forms were excluded from the data in figure 1, since, with the exception of three past-tense uses of *drunken*, which were inflected for plural in the Middle English part of the corpus, they regularly involved the suffixless form.

[4] In those cases in which the *ECF* corpus included more than one edition of a publication, only the earliest edition was taken into consideration.

[5] In this example and elsewhere, acute accents indicate primary stress. Where appropriate, grave accents will be used to mark reduced primary or secondary stress. The bold print is my addition.

[6] Contrary to the information provided, for example, by the *OED* (*OED 2 on CD-ROM*, s.v. *drunk*, *drunken*), the variant *drunken* was also, although rarely, used as a nominalized adjective. This is the case in four corpus examples; cf.:

(i) ... euery one at a banquet is compelled to drinke carouse, to the end the sober may not disclose ye words or deeds of the **drunken**. (Henry Wotton: *A Courtlie controuersie of Cupids Cautels*, 1578; *EEPF*)

(4) Long horse-hair settles for the **drúnk**, with horse-hair pillows at each end. (Thomas Hardy: *Far from the Madding Crowd*, 1874; *NCF*)

(5) At tea, two or three hours earlier, they had, in the freakishness of affection, **drúnk** from one cup. (Thomas Hardy: *Tess of the D'Urbervilles*, 1891; *NCF*)

The syntactic classification adopted here closely correlates with certain prosodic constellations: prenominal contexts constitute the rhythmically most critical contexts for attributive material ending in a stressed syllable, since nouns in English typically carry initial stress.[7] Thus, Bolinger (1965:146f; cf. also Fijn van Draat 1912a:24; Franz 1939:167) predicts that the disyllabic form preserving the Old English participial suffix *-en* will be particularly favoured in attributive contexts, where the suffix can serve to prevent a stress clash.[8] An illustrative example is given in sentence (1) above. By contrast, the participle in non-attributive uses is usually either followed by an unstressed function word or by a pause,[9] so that stress clashes are rare. This is the case in examples (2) to (5), which are representative of most of the relevant cases. The results of the count are summarized in figure 1, which lists the corpora in their chronological order.

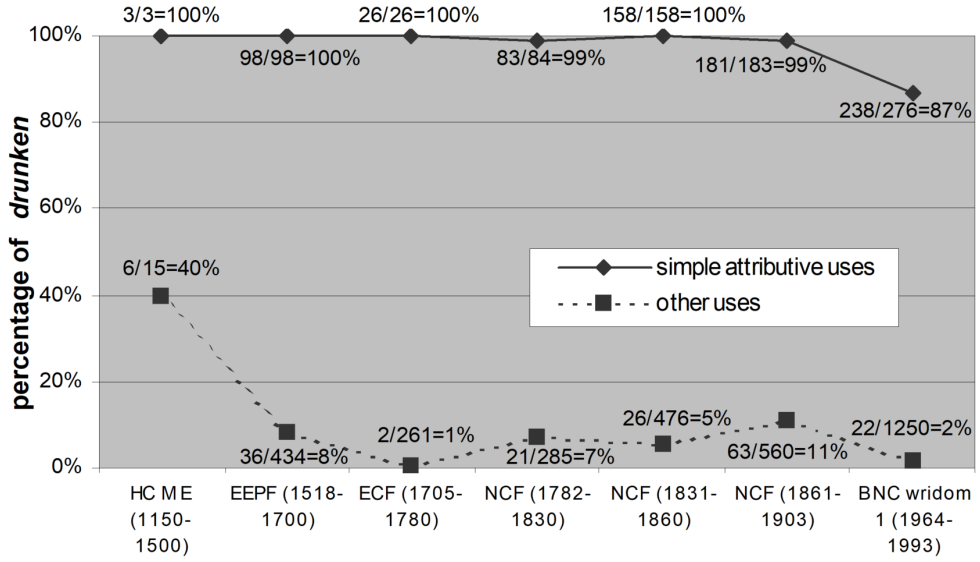

Figure 1: The distribution of the participial variants *drunk* and *drunken* in a series of prose corpora

As can be seen in the comparison of the percentages of *drunk* and *drunken* in simple attributive and other contexts, the expectations are fully confirmed. At every point in the history from Middle English to Late Modern English, *drunken* was preserved in close to 100 % of the critical attributive cases. It is only in the late 20th century that the older form showed signs of an incipient demise in simple attributive uses.[10] By contrast, in all other uses, its frequency suddenly dropped from 40 % in Middle English to values between 11 and 1 % in the later periods. The stark contrast between simple attributive and other uses found as early as Middle English maintained a quasi-categorical status all through Early and Late Modern English.

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[7] Cf. Kelly & Bock (1988:391): 89 % of the 4,218 most frequent disyllabic English nouns are initially stressed. Monosyllabic nouns (which are at least as frequent) have not been included in this count, but note that they are inherently stressed syllables.

[8] Franz (1939:167) additionally remarks that the preservation of *-en* in attributive past participles may initially have been due to the fact that in Old English, after the definite article and demonstrative pronouns, attributive past participles took the endings of the weak adjectival declension (e.g. *se foresprecena here* 'the aforementioned army').

[9] A pause occurs, roughly speaking, where the participle is followed by a relatively wide syntactic and prosodic disjuncture (for a more technical analysis, see Selkirk 1984:301-320).

[10] It is striking that *drunk* in simple attributive uses begins to establish itself in high-frequency collocations such as *drunk driver(s)*, *drunk driving* (which tend to be treated as compounds by the stress-assigning rules) and *drunk man/men*, *drunk husband(s)*, *drunk woman/women* (which involve generic nouns). The threatening succession of two stressed syllables is perhaps averted by allocating only reduced stress to these highly given combinations.

However, some qualifications of the binary opposition attributive vs. other uses are in order. In contrast to the earlier centuries, the 19th century witnessed the growth of more complex attributive structures. Thus, the *Nineteenth-Century Fiction* corpus yields 13 compounds in attributive uses involving the past participle, three of which contain the monosyllabic variant *drunk* (*half-drunk*, *sleep-drunk*, and *joy-drunk*, as in example (6), alongside ten instances of *half-drunken*). By virtue of the English compound stress rule, the lexical stress in such complex lexemes regularly falls on the first element, so that even the monosyllabic form of the participle causes no rhythmic problem. Similarly, in two cases the participle is itself premodified by an adverb. This constellation affords the possibility of shifting the stress leftwards to the premodifying adverb. As a consequence, the participle merely retains secondary stress (*néwly drùnk* and *pártially drùnk*, as in example (7)), and the clash between the monosyllabic variant *drunk* and the following noun is mitigated (for the stress shift rule, cf. Selkirk 1984:169). In the 20th century corpus, the trend towards the monosyllabic form in complex attributive structures is even more pronounced: in 16 out of 24 cases, *drunk* is used (10 compounds, among them 6 instances of *half-drunk* and 4 instances of *punch-drunk*, and 6 adverbially premodified participles). Of the remaining 8 cases of *drunken*, 3 are compounded (all of them *half-drunken*), and 5 adverbially premodified. This distribution suggests that monosyllabic *drunk* is accepted as fully grammatical in attributive structures, but only on the condition that these are expanded by additional material and thereby rhythmically disencumbered.

(6) …, she yields herself to the influences around her; the soft and sugared air, the **jóy-drunk lárks**, the juicy grass fields thronged with bold dandelions and faint ladies'-smocks. (Rhoda Broughton: *Belinda*, 1883; *NCF*)

(7) …, an exceedingly dirty and **pártially drùnk mínister** of justice asked me if I would like to step in and hear a trial or so: … (Charles Dickens: *Great Expectations*, 1861; *NCF*)

Composite attributive structures in which attributive *drunk(en)* does not directly precede the noun it modifies equally reduce the danger of a stress clash since the participle is followed by a pause (sometimes indicated by a comma) or by unstressed *and* or *or*, as is the case in example (8):

(8) … the stranger who preceded them divided the press, shouldering from him, by the mere weight and impetus of his motion, both **drúnk and sóber pássengers**. (Sir Walter Scott: *Guy Mannering*, 1830; *NCF*)

Due to the fact that compounded, adverbially premodified and composite attributive structures are usually unproblematic with respect to the alternation of stressed and unstressed syllables, these are subsumed under the category 'other uses' of figure 1. The two groups 'simple attributive' and 'other uses' are thus highly correlated with contexts representing a high and a low potential for stress clashes respectively. The obvious explanation for the continued preservation of *drunken* in simple attributive uses invokes the Principle of Rhythmic Alternation, which favours an initially stressed disyllabic form preceding stressed syllables and thus secures an ideal rhythmic pattern.

The wide discrepancy between the two curves in figure 1 suggests that the Principle of Rhythmic Alternation has led to the loss of free variation between the participial variants during a long interim of almost five centuries. The functional split has however not gone to completion: the 19th and 20th century data show that the use of *drunk* is licensed and widespread in attributive functions wherever material expanding the attributive structure conspires to secure an alternating rhythm. Thus, the morpheme *-en*, degrammaticalized in Middle English (in the sense that it was abandoned as an obligatory participial marker), has not entirely become regrammaticalized as a categorical ending for attributive occurrences of the participle, but primarily subserves rhythmic (i.e. extra-grammatical) preferences instead.

In conclusion, the Old English suffix *-en* has been able to maintain its presence in Modern English thanks to its suitability as a rhythmic buffer in attributive contexts. The apparent near grammaticalization observable in all corpus sections from Early Modern English onwards may be attributed to the diachronic influence of the Principle of Rhythmic Alternation. Even so, rhythmic alternation operates in conjunction with the English compound stress rule and the stress shift rule to license the monosyllabic form in more complex attributive structures. The evolution of the disyllabic form *drunken* illustrates a phenomenon which Lass (1990; 1997:316ff) refers to as linguistic exaptation (cf. also Aitchison 1991:148ff; Brinton & Stein 1995; Vincent 1995): that is, a morpheme that used to code a grammatical function loses this function, but the morphological material itself is still around and is put to a different use – one which may be just as systematic. Instead of marking past participles, the *-en*-suffix has from Middle English times onwards been recycled to buffer stress clashes.

2.2 Adverbs with and without the -ly-*suffix*

The *-ly*-suffix, used to derive adverbs from adjectives, was fully established in this function in Middle English, but even today it may be missing in deadjectival adverbs in non-standard and even standard language, provided that the circumstances favour its omission (cf. Fijn van Draat 1910:96ff; Stroheker 1913:49; Franz

1939:223; Nevalainen 1997). Syntactic and stylistic factors play an important role in this respect, but here I focus on the rhythmic aspect of *-ly*-less adverbs.

Exemplary cases of *-ly*-omission include a number of intensifying adverbs, popular in earlier forms of English, which boast an unstressed final syllable, e.g. *excessive*, *wondrous*, *wonderful* and *proper*. My corpus studies have confirmed that the *-ly*-less forms frequently served as adverbs, even before items beginning with a stressed syllable, since they never caused a stress clash with the following element:

(9) The execution after the Route was **excéssive blóody**, the Romans remembring how freely the Affricans had open'd their veines, were not vngratefull in their returne. (Roger Boyle: *Parthenissa*, Part 2, 1655; *EEPF*)

Parallel results have been obtained for several non-finally stressed adjectives which may serve as adverbial intensifiers without the addition of a *-ly*-suffix even in present-day English, e.g. *devilish clever*, *hellish good*, *hopping mad*, *boiling hot*; etc. In these cases, the presence of *-ly* offers no rhythmic advantage, since the base forms in *-ish* and *-ing* have an unstressed final syllable. Indeed, it would create the undesirable structure of a stress lapse. It is for this reason, among others, that these patterns are still very productive in contemporary usage (see Adams 1973:98).

An interesting and longstanding case in point is provided by the alternation between *scarce* and *scarcely*:[11] both can be used as adverbs without a difference in meaning (cf. Stroheker 1913:50). The following corpus study considers only those cases in which *scarce* and *scarcely* immediately precede and premodify full verbs (excluding auxiliaries and cases with intervening material). These full verbs can be subdivided into initially stressed ones, as in example (10), non-initially stressed ones, as in example (11), particle verbs, which are stressed on the particle, such as *pull off* in example (12), as well as verbs, such as *kiss* in (13), which are normally initially stressed (or monosyllabic), but which produce at most a mitigated stress clash in the corpus examples because their stress is absorbed by a stronger emphasis on the following material and is thereby reduced:[12]

(10) ... I thereupon told him my name, which he had **scárcely héard**, but I found my selfe in his Armes, as a reward of that discovery; ... (Roger Boyle: *Parthenissa*, Part 4, 1655; *EEPF*)

(11) The generous Atafernes did **scárce abándon** me one moment, knowing my condition needed all the consolation, though it was above all service of a Friend. (Roger Boyle: *Parthenissa*, Part 5, 1656; *EEPF*)

(12) ... that Maharball wanted tyme to answer this Civility, and had **scárce pulld óff** his owne Scarfe and taken his Freinds, before they were come up; … (Roger Boyle: *Parthenissa*, Part 2, 1655; *EEPF*)

(13) I had **scárce kìst his hánds** as an acknowledgement of his favour and my Ioy but Batiatus came in, … (Roger Boyle: *Parthenissa*, Part 1, 1655; *EEPF*)

The analysis of the data is guided by the hypothesis that, as in the examples quoted above, the suffixed variant *scarcely* will be favoured in contexts involving a subsequent stressed syllable (e.g. example (10)). By contrast, the suffixless variant *scarce* is expected to occur where an unstressed or secondarily stressed syllable follows the adverb and there is thus no need to avoid a stress clash (e.g. examples (11)-(13)). This hypothesis has been tested against a large corpus of fictional texts dating from 1518 to present-day English (including the same corpora as the previous case study, except for the Middle English section, which contained too few examples).

The results reveal that the use of the two variants differs widely between individual authors: in the *Early English Prose Fiction* corpus (comprising the 16th and 17th centuries), the majority (58 authors) have *scarce* only; four authors have *scarcely* only, and the remaining 42 authors fluctuate between both variants. In the *Eighteenth-Century Fiction* corpus, six authors use *scarce* only; none uses *scarcely* only, but the vast majority of 26 authors use both *scarce* and *scarcely*. In the *Nineteenth-Century Fiction* corpus, 66 authors alternate between *scarce* and *scarcely* and 32 use *scarcely* exclusively.[13] Finally, of the several hundreds of authors whose works make up the

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[11] There is little evidence from the etymology as well as from the spelling variants listed by the *OED* (*OED 2 on CD-ROM*, s.v. *scarce*) that – as has been suggested by an anonymous reviewer – *scarce* could be given a disyllabic pronunciation in earlier centuries. Even if the *r* could possibly be syllabic, the corpus findings prove that there is a clear distributional difference between *scarce* and *scarcely*, which can only be explained by their dissimilar rhythmic structure.

[12] Concerning the reduction of stress due to the length and complexity of following material, cf. Zwicky (1969:429) and Bolinger (1965:149f).

[13] There is also one author who has only one adverbial use and happens to employ *scarce* in this context, but this case has to be considered exceptional.

imaginative prose section of the *BNC*, only five use *scarce* as an adverb at all. All of these are authors of novels set wholly or partly in earlier centuries, employing an archaic style on purpose. While in the 16th to 18th centuries, *scarcely* appears in only 13 to 16 % of all adverbial uses, it makes up 76 % in the 19th century and reaches 97 % (respectively 100 %, discounting the historical novels) in the late 20th century corpus. There is thus a constant rise in the marking of the adverb in the course of five centuries.

In the works of most authors who alternate between the two forms of the adverb, the distribution of the variants is neutral with regard to rhythm; probably other factors than rhythm prevail in their selection. However, the handful of authors given in figure 2 seem to be distributing the variants according to the requirements of the Principle of Rhythmic Alternation. In this study, only the works of those authors are included which contain at least two relevant instances of both *scarce* and *scarcely*. Even so, due to the low numbers of occurrence, most results for individual authors are far from attaining statistical significance. Nevertheless, the figures are highly suggestive and allow interesting conclusions.

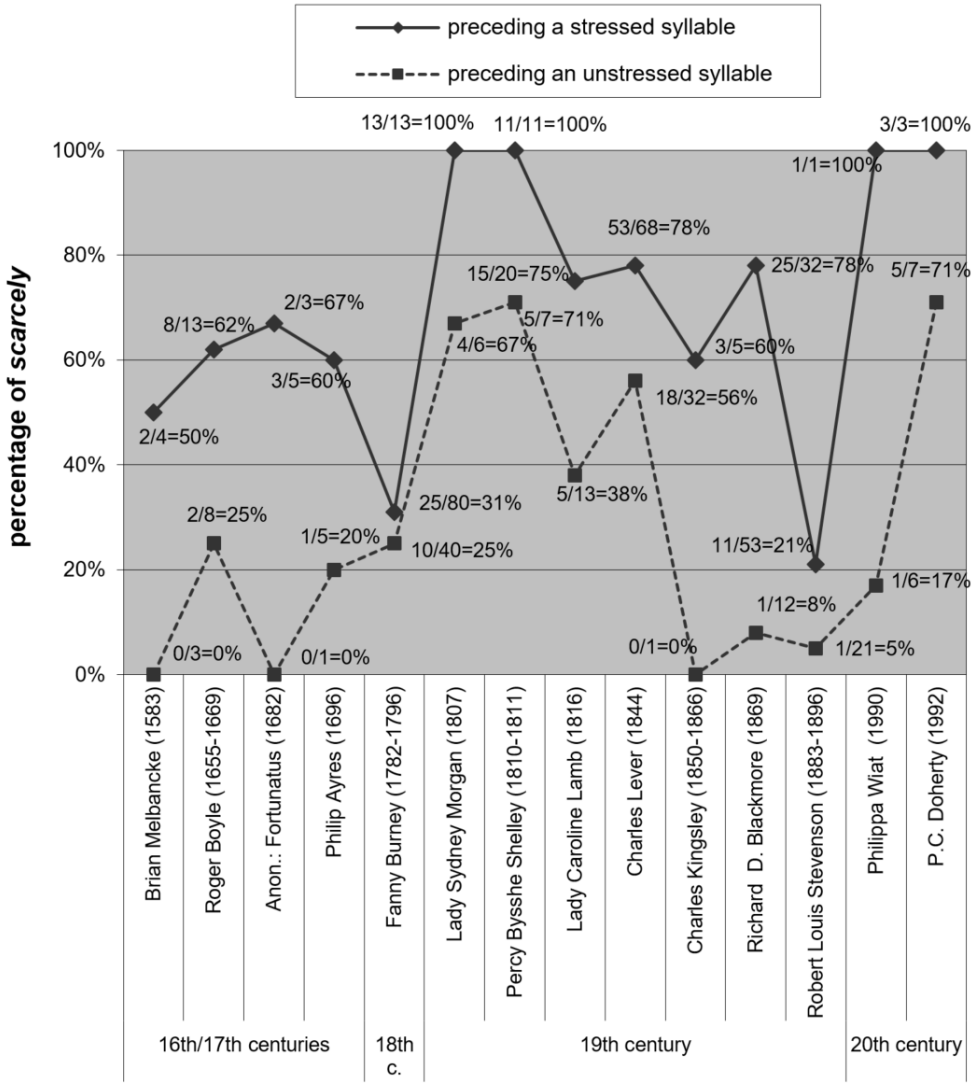

Figure 2: The distribution of *scarce* and *scarcely* immediately preceding full verbs in the works of selected authors in a series of prose corpora

The solid curve, '*scarcely* preceding a stressed syllable', refers to all instances of the adverb immediately preceding initially stressed verbs; the dashed curve, '*scarcely* preceding an unstressed syllable', subsumes both non-initially stressed verbs, particle verbs and rhythmically overshadowed verbs following the adverb.

As it turns out, for every author, *scarcely* occurs in a higher percentage of cases preceding stressed syllables than preceding unstressed syllables. Conversely, the percentage of *scarce* soars before unstressed syllables. Thus, conformity with the Principle of Rhythmic Alternation is achieved in the majority of cases.

Figure 2 shows that individual authors behave very differently. In the text by Brian Melbancke (16th century) there are only four instances of the adverb preceding and modifying a verb, but they occur in complementary

distribution: *scarcely* precedes initially stressed verbs, while *scarce* precedes verbs that are non-initially stressed or rhythmically overshadowed. Like Melbancke, the anonymous 17th century author of *Fortunatus* uses *scarce* preceding an unstressed syllable. In the 19th century, the same is true of Charles Kingsley and – with one exception – of Richard D. Blackmore and Robert Louis Stevenson. As late as that century, Robert Louis Stevenson still uses *scarce* as the most common, unmarked form preceding all types of verbs,[14] but even so makes a slight difference between environments with a following stressed or unstressed syllable. Lady Morgan and Percy Bysshe Shelley in the 19th century and Philippa Wiat and P.C. Doherty in the 20th century never let adverbial *scarce* precede an initially stressed verb. In the works of all authors, the Principle of Rhythmic Alternation only manifests itself in a more or less reduced incidence of *scarce* preceding initially stressed verbs. But within these clearly recognizable tendencies, there is a margin for free variation, which seems to be determined by factors outside the domain of prosody (e.g. processing tendencies).

One strategy which probably contributes to deviations from a perfect alternating rhythm may be a striving for parallelism, favouring the same morphological form for a sequence of two adverbs fulfilling the same syntactic function. Consider examples (14) and (15), in which one non-initially stressed and one initially stressed full verb are coordinated. A rhythmically-guided choice of *scarce* in one case and *scarcely* in the other would have led to a striking structural inconsistency:

(14) She had **scárce recéived** it, **scárce pláced** it in her bosom, when Lady Margaret attached her. (Lady Caroline Lamb: *Glenarvon*, 1816; *NCF*)

(15) He then held out to her his hand, which she could **scárcely appróach** from trembling, and **scárcely kíss** for weeping, ... (Fanny Burney: *Camilla*, 1796; *NCF*)

Useful as it may be in terms of rhythmic alternation, the lack of codification of adverbial forms runs counter to standardization tendencies gaining ground in the 18th century (cf. Franz 1939:224). These forces favour a single morphological form for each syntactic function, but they are generally insensitive to the requirements of the Principle of Rhythmic Alternation. As a result, in present-day English prose, *scarce* regularly fills the adjective slots, while – with very few exceptions – *scarcely* has become the dominant adverbial form. These exceptions occur almost exclusively in cases where the omission of *-ly* serves to create a deliberately archaizing style, but causes no rhythmic inconvenience. The latter fact supports the view that the avoidance of stress clashes is a universal factor which is at work at all times, but visible only to the extent that it is not neutralized by contrary forces.

In conclusion, the adverbial suffix *-ly* can function as an accentual buffer, thus averting threatening successions of strongly stressed syllables. Conversely, it may be omitted where a buffer element is unnecessary because an unstressed syllable separating two stressed ones is already present. Unlike the case of the participial suffix *-en*, this phenomenon cannot be properly described as an exaptive change: while the participial suffix was on its way out when it was recycled for rhythmical purposes, the adverbial suffix was actually in the process of establishing itself. Even so, it replicates the process by which essentially grammatical morphemes receive a subsidiary functional motivation as rhythmic buffers.

2.3 The variable marking of infinitives dependent on manipulative verbs

In Early Modern English, it was possible for a number of manipulative (or directive) verbs (e.g. *make*, *bid*, *charge*, *command*, *entreat*, *forbid*, *let*, *see*, and *suffer*) to be followed either by marked or by unmarked infinitives (cf. Stroheker 1913:81ff; Franz 1939:539; Mustanoja 1960:526ff). The presence or absence of the infinitive marker *to* was determined by a range of different factors, notably semantic and syntactic ones.[15] The following corpus

[14] In this respect, he resembles Sir Walter Scott, who is equally Scottish-born. These results – albeit sporadic – seem to suggest that the rate of adverb marking in Scottish English lags somewhat behind that in the more southern varieties.

[15] Effects of the following factors on the marking of verb-dependent infinitives in Middle and Early Modern English have been demonstrated in the literature: (1) various iconic tendencies (degree of transitivity or impingement of the matrix clause subject on the object, (in-)directness of the relation between the events denoted by the matrix verb and infinitive, (non-)actualization of the event denoted by the infinitive; cf. Fischer 1995; 1996; 1997), (2) certain syntactic characteristics that may be subsumed under the concept of processing complexity (active/passive contrasts, degree of separation of matrix verb and dependent infinitive due to intervening material, non-canonical sentence structures, change of object in coordinated infinitival structures; cf. Ohlander 1941; Mustanoja 1960:522; Quirk & Svartvik 1970; Fanego 1994; Fischer 1995:15; Rohdenburg & Schlüter 2000:446-452). In contrast, rhythmic influences are frequently either treated as an aside (e.g. Ohlander 1941:66; Fanego 1994:201f) or denied as significant constraining forces (e.g. Fischer 1995:2; 1996:267).

analysis focuses on infinitives dependent on the verb *make* in the passive (parallel results have been found in connection with the verb *bid*; for both verbs cf. Rohdenburg & Schlüter 2000:484ff). In the passive, the superordinate verb *made* is normally immediately followed by the dependent infinitive and both verbs carry a lexical stress. In contrast to the active (where object phrases intervene), passivization is therefore liable to produce a high potential for stress clashes. Consider the following examples:

(16) …; my eyes have before been **máde to glísten** by this soul-moving beauty; … (Samuel Richardson: *Clarissa*, 1748; *ECF*)

(17) …; my Father was the happiest Man in the World, and had nothing to vex him, but the Enmity he was **máde belíeve** his Children had to him. (Sarah Fielding: *David Simple*, 1744; *ECF*)

In both examples, the dependent verbs *glisten* and *believe* directly follow the superordinate *made*. Since *glisten* in (16) carries initial stress, the infinitive marker *to* comes in handy as a stress clash buffer. By contrast, *believe* in (17) has an unstressed initial syllable which makes an additional buffer syllable superfluous.

The present study investigates the influence exerted by the stress pattern of the dependent verb on the variable presence of the infinitive marker. The proposed hypothesis is that the marker will be absent relatively more often when the dependent infinitive is non-initially stressed. Figure 3 presents the results of a corpus analysis covering the familiar prose corpora from the 16th to 19th centuries. The data include only non-coordinated infinitives or such that are initial in coordinated infinitival structures; i.e. all instances of non-initial coordinated infinitives are excluded (the use of the infinitive marker is governed by different principles here; cf. Ohlander 1941:59; Rohdenburg & Schlüter 2000:450f). All examples of *made* + infinitive have been categorized according to the presence or absence of initial stress on the infinitive.[16]

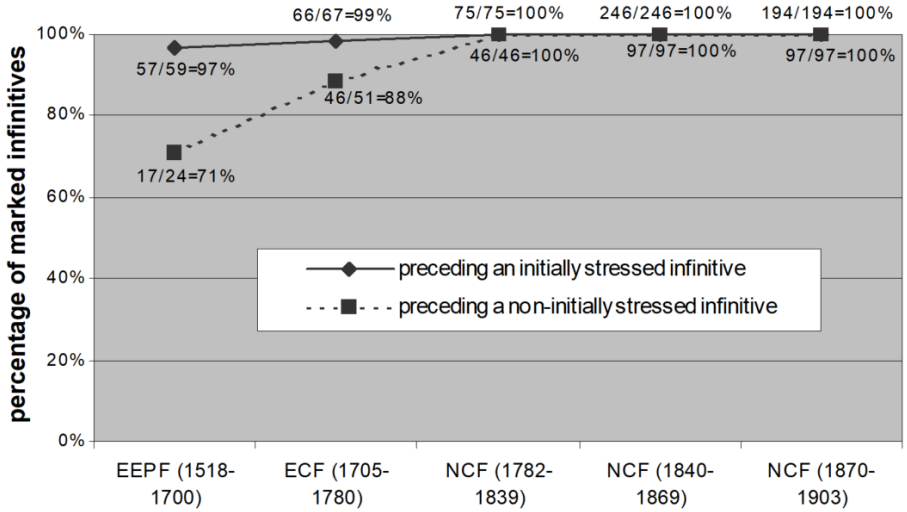

Figure 3: The variable marking of (initial or non-coordinated) infinitives dependent on passive *make* in a series of corpora

On average, in the 16th and 17th centuries, 89 % of the dependent infinitives are marked by *to*. In the 18th century, this is already true of 94 %, and in the 19th century, the corpus yields not a single occurrence of an unmarked dependent infinitive. This shows that the diachronic range of the corpus under consideration extends over the terminal phase of the *to*-less construction. Nevertheless, in the earlier corpus sections, the curves for initially and non-initially stressed infinitives take a clearly distinct course: as early as the *EEPF* corpus, nearly all initially stressed infinitives are associated with the infinitive marker. Two out of the total of three exceptions to this trend can be explained with reference to the overriding prosodic movement of the sentence:

(18) ... as the yonge Fawne will be **máde tàke bréad** at a mans hand, when the old Bucke will not by any meanes looke vpon a man: ... (Austen Saker: *Narbonus*, 1580, *EEPF*)

[16] To find passive uses of the past participle *made*, a corpus search was carried out that retrieved all forms and spelling variants of the auxiliary *be* (*am*, *art*, *is*, *are*, *was*, *wast*, *wert*, *were*, *be*, *bee*, *being*, *beeing*, *been*, *beene*, *bē*) immediately preceding *made*.

(19) Being come to his House, he put me into the Garden to work, there I was **máde dràw Wáter**, dig, and labour hard all day, … (Penelope Aubin: *Charlotta Du Pont*, 1739, *ECF*)

In both cases, the dependent infinitives are immediately followed by object expressions which absorb much of the stress from the infinitives, so that the latter have a relatively weak stress in comparison to the adjacent syllables and can themselves function as buffer syllables.

In contrast to the initially stressed infinitives, of the non-initially stressed infinitives, seven (i.e. 29 %) in the *EEPF* corpus and five (i.e. 12 %) in the *ECF* corpus are left unmarked. This contrast is explained by the Principle of Rhythmic Alternation which does not require any buffer to be added before infinitives that do not carry stress on their initial syllable (e.g. *appear*, *confess*, *obey*, and *believe*, as in example (17)). The corpus data prove that while the *to*-less construction is petering out, rhythm and sentence prosody are two important factors accounting for its latest occurrences.

As figure 3 shows, the marked infinitive after passive *made* becomes obligatory (grammaticalized) in the course of the 18th century. By contrast, in the active uses of *make*, the unmarked infinitive is still unchallenged up to present-day English. A strong hypothesis (cf. Franz 1939:537) attributes this grammatical split between the active and the passive voice to the fact that the dependent infinitive usually follows immediately upon the passive form *made*. As a consequence, the probability of imminent stress clashes is high, and the infinitive marker *to* is called for on rhythmical grounds. The situation is different in the active, where *make* and the dependent infinitive are usually separated by intervening object expressions (cf. example (20)):

(20) I would **máke you smíle** in the midst of your gravest airs, as I used to do. (Samuel Richardson: *Clarissa*, 1748; *ECF*)

Despite the decisive influence of the Principle of Rhythmic Alternation, the choice of marked or unmarked infinitives after *made* seems to be co-determined by additional factors. One of them is the processing difficulty introduced by syntactic complexity, which may lead to the practically exceptionless marking of infinitives (including non-initially stressed ones) as soon as adverbial expressions intervene between *made* and the infinitive. This is the case in all of the seven relevant corpus examples, e.g. sentence (21):

(21) Tracts, so numerous that it would be impossible to give their measure or their value by any other calculation than that of their weight, were **máde** by the ingenuity of the fair and pious contributors **to assúme** a very tempting aspect, … (Frances Milton Trollope: *The Vicar of Wrexhill*, 1837; *NCF*)

In this occurrence, the infinitive marker is not conditioned by rhythm (since *assume* has an unstressed initial syllable), but is indispensable from the point of view of language processing: it clarifies the syntactic relation between the super- and subordinate verbs, which would otherwise easily get lost due to the bulky adverbial insertion. This finding is predicted by the Complexity Principle (cf. Rohdenburg 1996:151), which stipulates that in cases of increased cognitive complexity more explicit grammatical variants tend to be favoured (e.g. *to*-infinitives are preferred over unmarked infinitives). Similar effects have been described for active constructions in studies by Ohlander (1941), Mustanoja (1960), Quirk & Svartvik (1970) and Fanego (1994).

In conclusion, corpus analyses have shown that the Principle of Rhythmic Alternation accounts for most of the variation involving the variable infinitive marker after passive *made* in the 16th to 18th centuries. In addition, it explains why *to*-less constructions had the longest lease of life with non-initially stressed infinitives at a time when this construction was already on its way out. Thus, as long as the marked infinitive was not yet grammatically obligatory, the particle *to* was redeployed for extra-grammatical purposes, namely the avoidance of stress clashes.

2.4 The variable presence of the a-*prefix in* -ing-*participles*

The Old English prepositions or prefixes *ā*, *of*, *on*, *at* and *ge* had all become semantically bleached and phonetically reduced to Middle English *a* (cf. Fijn van Draat 1912b:508-514; Stroheker 1913:25). Although as early as Middle English the particle *a* was almost meaningless, it continued to accompany *-ing*-forms ('*a*-prefixing') and remained vigorous in Early and Late Modern English (cf. Franz 1939:559) and in modern English dialects (cf. Wolfram 1976; 1980 for Appalachian English).

According to Wolfram (1976; 1980), *a*-prefixing is subject to a number of phonological restrictions (intersecting with syntactic and semantic constraints; cf. also Nagucka 1984): firstly, the *a* is never prefixed to a vowel-initial basis. This tendency is accounted for by the phonetic principle of optimal syllable structure, which disfavours the creation of hiatuses (cf. the ungrammatical example in (22)). Secondly, *a* is only rarely prefixed to a verb following a vowel-final element, thus equally avoiding hiatuses (cf. example (23), which has to be considered rare). Thirdly, *a* is exclusively prefixed to initially stressed verbs (cf. the ungrammatical example in (24)). This restriction serves to avoid the sequence of two or more unstressed syllables (stress lapse).

(22) * John was **a-eatin'** his food. (Wolfram 1980:125)

(23) He was just standin' quietly **a-hollerin'**. (Wolfram 1976:51)

(24) * He was **a-retúrnin'** from his house. (Wolfram 1980:126)

While all of these factors have been found to have explanatory potential in the following corpus study, an additional phonological constraint will be investigated. This concerns the question of whether the *-ing*-form follows a stressed or an unstressed syllable. Since, according to Wolfram (1980:126), only initially stressed verbs are eligible for *a*-prefixing, a prefixless *-ing*-form following a stressed syllable would create a stress clash. The *a*-prefix can, however, serve as a buffer separating the two stresses.

The hypothesis that will be tested in this study has been borrowed from Fijn van Draat (1912b:508f): if the *-ing*-form follows a stressed syllable, *a*-prefixing should be more likely to occur than if the *-ing*-form follows an unstressed syllable. The database is composed of the same series of prose corpora that has been used in the preceding studies, covering the 16th to 20th centuries. The analysis is restricted to *a*-prefixing in *-ing*-forms following transitive and intransitive uses of the verb *set*.[17] Furthermore, only *-ing*-forms that are stressed on their initial syllable are counted, because non-initially stressed forms never create a potential for stress clashes. In addition to the prototypical prefix *a-*, other items are included that can fulfil the same function. This concerns the prepositions *on*, *upon*, *to*, *into* and *at*.[18] For convenience, all of these will be referred to – somewhat imprecisely – as '*a*-prefixing' (which is the common designation in the literature).

The examples obtained from the corpus can be subdivided according to their rhythmic contexts. Thus, there may be different kinds of objects preceding the *-ing*-form: personal pronouns are normally unstressed and do not produce a stress clash even if the prefix is absent. By contrast, reflexive pronouns end in a stressed syllable. In this case, the presence of the unstressed *a*-prefix (or a comparable preposition) is advantageous. Compare examples (25) and (26):

(25) These Instructions … were sufficient to set **them góing** to the Emperour. (Peter Bellon: *The Court Secret*, 1689; *EEPF*)

(26) To ease my mind a little, I set **my sélf to wríting**, and made these Verses on my departure from Bracilla. (Anonymous: *The Player's Tragedy*, 1693; *EEPF*)

Among the full noun objects, one can distinguish between those ending in an unstressed syllable (non-oxytonic nouns) and those ending in a stressed syllable (oxytonic nouns). In the former case (e.g. sentence (27)), the omission of the prefix does not cause a stress clash; in the latter (e.g. sentence (28)), it does:

(27) ..., Ile set a **cándle búrning** in the midst of this roome where we all are, open and easie to be seen as my hand: ... (Thomas Brewer: *The Life and Death of the Merry Deuill of Edmonton*, 1631; *EEPF*)

(28) In this manner I may say, he set all **whéels a góing** at once, that might in any kinde prejudice and disturb his own King Orontes; ... (Sir Percy Herbert: *The Princess Cloria*, 1661; *EEPF*)

Furthermore, there are some instances in which the verb *set*, which generally carries a strong stress, immediately precedes the dependent *-ing*-form. This is the case when the object of the transitive construction is pre- or postposed (cf. example (29)), when the construction is passivized (cf. example (30)), or when *set* is used

[17] The following verb forms were searched: *set*, *sete*, *sett*, *sette*, *setst*, *settest*, *sets*, *setts*, *settes*, *setteth*, *settyth*, *setting*, *seting*, *settynge*, *setyng* and *setted*, each one followed by an *-ing*-form at a maximal distance of eight words. Besides the ending *-ing*, the spelling variants *-yng*, *-inge* and *-ynge* were included.

[18] Cf. Visser (1973:1894). These prepositions are subsumed under the same category because, in terms of rhythm, they all function alike; even the disyllabic items *upon* and *into* can take over a buffer function if they are completely destressed; this constellation creates a ternary rhythm, which is not particularly objectionable. There is however some evidence that the prepositions are treated as more independent items than the *a*-prefix: they may precede *-ing*-forms that do not satisfy the above-mentioned conditions by Wolfram. The corpus yields forms like *on retreating* (*EEPF*), *upon enquiring* (*ECF*), *to examining*, *to replacing*, *to recovering*, *on debating*, *upon devising* and *upon inquiring* (all *NCF*), which are initially unstressed and in some cases begin with a vowel. Since these *-ing*-forms constitute no potential loci for stress clashes, they are excluded from the data in figure 4.

intransitively (cf. example (31)).[19] In all cases, the sequence *set* + initially stressed verb in the *-ing*-form creates a potential for stress clashes, which may be avoided by using the intervening prefix as a buffer:[20]

(29) But I will be bold to say, that neither She, nor my Brother, nor even my Father himself, knows what a heart they have **sét a bléeding**. (Samuel Richardson: *Clarissa*, 1748; *ECF*)

(30) ..., but such a tongue as his might lay matters too open, if once **sét a-góing**, for you see he is not to be over-awed to any thing. (Charles Johnstone: *Chrysal*, 1760; *ECF*)

(31) ... some of them let fly several shot at him from their Fuzees, while others **sét a rúnning** after him, thinking to have overtaken him; ... (Anonymous: *Don Tomazo*, 1680; *EEPF*)

Figure 4 summarizes the results of the corpus study in a highly simplified way: it focuses exclusively on the contrast between the total percentage of all instances of *-ing*-forms following unstressed syllables (including personal pronouns and non-oxytonic nouns; represented by the dashed curve) compared to the total percentage following stressed syllables (including reflexive pronouns, oxytonic nouns and stressed forms of *set* itself; represented by the solid curve).

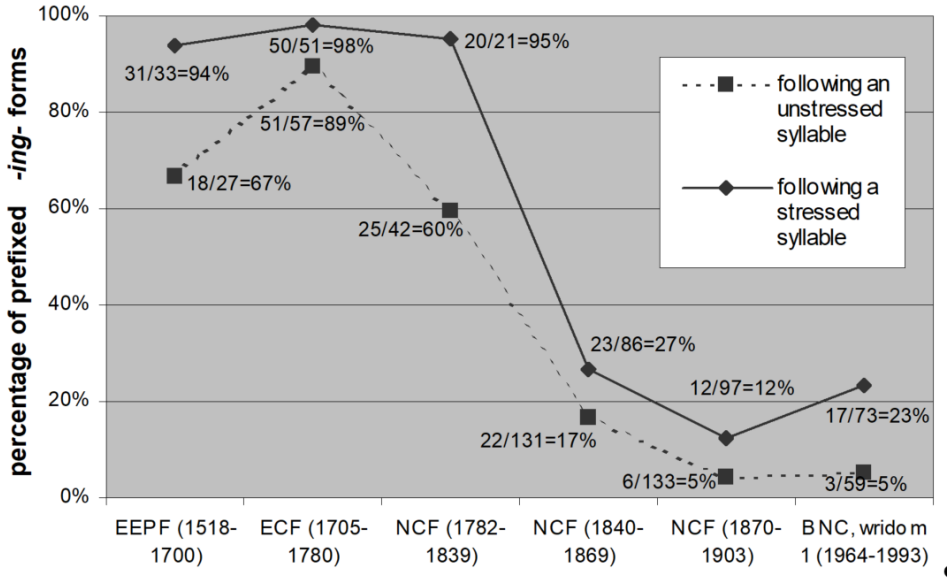

Figure 4: The variable presence of the particle *a/(up)on/(in)to/at* preceding initially stressed *-ing*-forms dependent on the verb *set* in a series of prose corpora

The data in figure 4 show that in the 16th and 17th centuries and in the first part of the 19th century, freedom of variation was greatest: in these periods, the imbalance between the two contexts was considerable, with a divergence of 27 to 35 %. By contrast, in the 18th century, the presence of the prefix was almost obligatory (cf. Fijn van Draat 1912b:510f). Even *-ing*-forms following an unstressed syllable could hardly run counter to this trend, taking the prefix in 89 % of all cases.[21] Since the middle of the 19th century, the *a*-prefix has become almost extinct, but traces of it can still be found following stressed syllables, where the prefix retains its buffer function. Despite these diachronic changes, in each chronologically defined subsection of the corpus the proportion of *a-*

[19] The disyllabic form *setting* does not occur even once in these three constellations. Note that the second unstressed syllable provided by the *-ing*-suffix would secure an alternating rhythm. Nevertheless, the sequence *setting (a-)*V-*ing* is eschewed due to the strong avoidance effect provoked by repeated *-ing*-forms (see in particular Bolinger 1979). Cf. also the remarks below in relation to the *horror aequi* tendency.

[20] In the case of object extraposition or passivization, the *a*-prefix may additionally be motivated along the lines of the Complexity Principle (Rohdenburg 1996; cf. the relevant remarks in section 2.3) as an explicit marker of the syntactic relation between *set* and the *-ing*-form .

[21] According to Fijn van Draat, the great rhythmic value of the prefix was no longer clearly recognized in the 18th century and generally, "[s]ense of Rhythm was but weakly developed" in this period. By contrast, for the 19th century, the author claims a "re-awakened sense of Rhythm" (Fijn van Draat 1912b:511 and 512).

prefixation is lower following unstressed syllables than following stressed syllables. In other words, the *a*-prefix is consistently more likely to occur in contexts where it can serve to prevent a stress clash.

The corpus examples from the second half of the 19th century make it clear that the *a*-prefix has acquired a social stigma: authors use it to characterize the speech of uneducated speakers as non-standard rather than to secure the rhythmic pattern of the language (cf. example (32)). This stylistic use of *a*-prefixing provides a further reason why rhythmic motivations are watered down in the 19th century, and it betrays the standardization pressures affecting the *a*-prefix:

(32) … Gambado, who says, 'be werry shy of a crupper if your 'oss naturally throws his saddle forward. It will certainlie make his tail sore, **sét him a kíckin'**, and werry likely bring you into trouble.' (Robert S. Surtees: *Handley Cross*, 1845; *NCF*)

Contrary to expectations, the curve for *a*-prefixing after stressed syllables in figure 4 rises once more in the late 20th century corpus: the avoidance of stress clashes seems to be gaining importance as the percentage of – what I have provisionally called – *a*-prefixing increases again. A close inspection of the corpus examples shows that this effect is, however, not due to a resurgence of the *a*-prefix, but to an increased use of the preposition *to*, as exemplified in (33):

(33) But oh, he had set her **héart to rácing**, the instant she'd first seen him. (Sandra Marton: *Roman Spring*, 1993; *BNC*)

In fact, in stark contrast to the previous centuries (where the *a*-prefix constantly accounted for about 80 % of the elements preposed to the *-ing*-forms), 18 out of the total of 20 instances that have been referred to as *a*-prefixed contain the preposition *to*, whereas only two make use of the *a*-prefix itself (one of them clearly characterizing a speaker of vernacular English). Presumably, the fully-fledged preposition has less of a non-standard or obsolescent flavour, so that even present-day authors employ it quite freely whenever they require some intervening buffer syllable.

In connection with the avoidance of stress clashes by means of the *a*-prefix, there is some indication of the effects of another factor co-determining the variable presence of the *a*-prefix: the so-called *horror aequi* Principle (cf. Rohdenburg & Schlüter 2000:461)[22] describes the avoidance of the semantically unmotivated adjacency of phonologically similar material. Compare examples (34) and (35) on the one hand to examples (36) and (37) on the other:

(34) But though this strange Message sett all my wounds **frésh a bléeding**, yet I had so much discretion left, as only to answere it with a Complement ... (Roger Boyle: *Parthenissa*, Part 3, 1655; *EEPF*)

(35) ..., he entertain'd me with such passionate discourses of his Flame, that I must acknowledge, they sett my old wounds **frésh a bléeding**, ... (Roger Boyle: *Parthenissa*, Part 3, 1655; *EEPF*)

(36) You shall be satisfy'd with a true Narration of the Disasters of a miserable Wretch, injur'd by Fortune, and pursu'd by Fate; the Relation of which, will set my **Wóunds blèeding afrésh**; … (Anonymous: *Cynthia*, 1687; *EEPF*)

(37) ...; yet the motion set both his **wóunds blèeding afrésh**; and it was with difficulty they again stopped the blood. (Samuel Richardson: *Clarissa*, 1748; *ECF*)

In (36) and (37), the *a*-prefix preceding the *-ing*-form is consistently avoided, presumably on account of the *horror aequi* effect provoked by the adverb *afresh*, which itself contains an *a*-prefix deriving from the same source as the verbal *a*-prefix (cf. Stroheker 1913:25). Additionally, the *-ing*-form *bleeding* is in both cases rhythmically overshadowed by the strongly stressed and focused adverb *afresh*. As a consequence, the stress clash with the preceding noun *wounds* is mitigated and thus rendered more acceptable. While in (34) and (35), rhythmic alternation requires the presence of the verbal *a*-prefix and there is no *horror aequi* effect to counteract this tendency, in (36) and (37), both sentence prosody and the avoidance of identity effects facilitate the omission of the prefix in the *-ing*-form.

To sum up, the study has revealed that *a*-prefixing in English has taken a changeable route of evolution, first gaining ground on and then losing ground to the prefixless variant. In the midst of this indeterminacy, the Principle of Rhythmic Alternation has at all times been a powerful factor influencing the choice between prefixed and prefixless *-ing*-forms following the verb *set*. In interaction with other factors (e.g. standardization tendencies and *horror aequi*) it explains part of the synchronic distribution and of the diachronic preservation of the *a*-prefix and functionally similar prepositions in 16th to 20th century English.

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[22] The term *horror aequi* was originally introduced by Brugmann (1909:146ff) to designate the perception of a cacophony created by the close adjacency of phonologically similar elements.

3 Conclusion

In this paper I have presented the results of empirical studies of four different grammatical variation phenomena, all of which show that the presence or absence of grammatical morphemes and markers may be determined – among other factors – by the Principle of Rhythmic Alternation. This concerns (1) the variable presence of the suffix *-en* in the participle *drunk*, (2) the variable presence of the adverbial suffix *-ly* in *scarce* used as an adverb, (3) the variable marking of infinitives depending on the verb *make* in the passive, and (4) the variable prefixation of *-ing*-forms with the prefix *a-* (or the insertion of certain prepositions). A number of comparable findings have been obtained for the variable use of the *-er*-suffix, which could be optionally appended to the irregular comparative *worse* in the 16th and 17th centuries (cf. Schlüter to appear 2001), for the *-ed*-suffix in the participle *lighted*, which was partly replaced by the monosyllabic variant *lit* (cf. Schlüter to appear), for variable infinitive marking dependent on the verb *bid* in the passive (cf. Rohdenburg & Schlüter 2000:484ff), and for the fate of the final vowels deriving from Old English inflectional endings (cf. Minkova 1990; 1991:155ff).

In all of these cases we witness situations in which grammatical morphemes or markers are lingering, without however being assigned a definite grammatical function: they may be involved in processes of grammaticalization (like the adverbial suffix or the infinitive marker), or degrammaticalization (like the participial suffix *-en*), or simply in longstanding cases of grammatical changeability (like the *a*-prefix). Each of these situations is inherently linked up with a more or less extensive period of variability during which the morphemes and markers under consideration are neither obligatory nor unavailable. As has been demonstrated, it is in precisely these phases of indeterminacy that the Principle of Rhythmic Alternation gets a chance to overrule grammatical motivations.

The effects of this principle have a synchronic as well as a diachronic dimension. Irrespective of other factors, it has been shown that rhythmic alternation sometimes constitutes the primary determinant of the synchronic distribution of these variants; in other cases, it operates within a more narrow margin defined by competing influences. Diachronically, the principle helps to establish new morphological variants wherever they can improve the rhythm; on the other hand, it contributes to the retention of obsolescent variants wherever they can preserve rhythmically optimal configurations. In this way, the Principle of Rhythmic Alternation can lead to the elimination of the variability if one of the variants proves disadvantageous in the majority of its occurrences (e.g. the *to*-less infinitive after *make* in the passive, or the monosyllabic form *drunk* before nouns). However, this regularization entails the loss of flexibility in individual cases (e.g. even non-initially stressed infinitives dependent on *made* are regularly marked nowadays; even non-initially stressed nouns were almost systematically preceded by *drunken* as an attribute from the 16th to the 19th centuries). As a result, rhythmic alternation is observed in the greater part of the occurrences, but not in every single instance.

The corpus studies have shown that the Principle of Rhythmic Alternation interacts with other determinants of grammatical variation such as standardization pressures, the *horror aequi* Principle, the Complexity Principle, semantics, and a number of other phonological factors such as optimal syllable structure and considerations of sentence prosody. This list is by no means exhaustive. As has been illustrated in some of the above-mentioned examples, these influences operate synergetically or antagonistically, depending on the alternatives in question. The considerable efficacy of the Principle of Rhythmic Alternation revealed in this contribution gives only a foretaste of the wealth of insights that can still be derived from the study of linguistic variation and change.

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