Metrical grouping and cliticisation in Middle Dutch: Evidence from verse

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ABSTRACT

The syntax-phonology mapping is rarely isomorphic. In Germanic, there is a strong tendency for weak (function) words to encliticise rather than to procliticise. Synchronic and diachronic evidence of encliticisation is available from a number of West and North Germanic languages (cf. Lahiri & Plank 2010). Our goal was to examine metrical grouping in Middle Dutch iambic and trochaic verse, in conjunction with orthographic contractions. Two of our texts, *Mellibeus* and *Saladijn*, are from Ms Marshall 29 (around 1375), the is *Lutgart* (around 1300). We asked, to what extent are orthographic contractions isomorphic with cliticisation, and how do they interact with metrical grouping? Furthermore, a close examination of the metre showed, that when properly scanned orthographic sequences of function words need not represent regular cliticisation patterns. First, words can be broken up in prosodic grouping and this holds also for orthographic contractions of function and/or lexical words (*alsic* < *als ic*) or (*laetti* < *laet ghi*). Second, contractions may not reflect cliticisation. They can be split across feet and the second element can be head of a foot; e.g. *dade ic* > *dadic* where *ic* can head the trochaic foot. Finally, we find that encliticisation is preferred to procliticisation in verse.

KEYWORDS

Clitics, encliticisation, Middle Dutch, iambic metre, trochaic metre, phonological grouping, prosody, Melibeus, Saladijn, Lutgart.

1. INTRODUCTION

Syntax-Phonology mapping is rarely isomorphic. In Germanic, there is a strong tendency for weak function words to encliticise rather than be proclitics in normal utterances (cf. Lahiri and Plank 2010). The productivity of phonological grouping is obvious in popular phrases in English such as *"Drinka pinta milka day"* which go against the syntactic grouping ((drink (a pint of milk)) a day). Encliticisation is equally evident in Modern Dutch such as in *Sint en Piet* [sɪntn̩ pit] (cf. Booij 1996 and experimental data Wheeldon and Lahiri 1997, Lahiri and Wheeldon 2011). Indeed, Henry Sweet (1877) claimed that encliticisation was the norm even in 19th century Dutch. As in most manuscripts of the medieval period, we often find orthographic contractions where two function words are written as one word (contraction) (1a) or where a function word encliticises to a lexical item (1b) in our texts.

(1) Orthographic contractions
a) *willic* < *will ic* 'will I', *datic* < *dat ic* 'that I', *ict 'ic dat'* 'I that'
b) *gordi* < *gord ghi* 'gird you', *makic* < *maek ic* 'make I', *vercochtic* < *vercocht ic* 'sold I' *tlant* < *dat lant* 'that land'

In this paper, we investigate the interaction of prosodic grouping and orthographic contraction as deduced from medieval texts written in rhyming verse. The issues we will examine include the extent to which metrical grouping governed by trochaic or iambic rhythm is always reflected in orthographic contraction and whether prosodic grouping in rhyme follows the pattern observed in normal utterances where encliticisation is the norm. Assuming that enclitisisation was the norm in MNL as it is in ModD, to what extent is this evident from verse? Several issues arise. First, given instances of orthographic contraction as *soudi* < *soude ghi* or *ict* < *ic dat*, one might assume that cliticisation is always apparent in writing. Second, one might hypothesise that the absence of orthographic contraction suggests that the weak functions words are not cliticised. Third, are orthographic contractions inevitably part of a single foot and thus should not be broken up by metrical grouping? Finally, to what extent is the interaction of metrical grouping and orthographic contraction different in trochaic and iambic rhythm?

The research presented here is based on two texts from Ms.Marshall 29[1], *Mellibeus* (Jan van Boendale) and *Saladijn* (Hein van Aken) and *Lutgart* (Willem van Afflighem). The parchment manuscript

[1] Ms. Marshall 29 contains four didactic books in rhyming verse:

Ms.Marshall 29, kept in the Bodleian Library, Oxford, dates back to 1375[2] and comprises 102 folios. The text is written in *littera textualis* in two columns of 48 lines each and is written by two regular hands (Sytsema et.al. 2014: 158). The *Lutgart* manuscript is kept in Copenhagen[3] and dates back to around 1300. All three authors hailed from the Brabant district, south of Holland.[4] A full diplomatic edition of Marshall 29 has been made available on our website.[5] These texts are ideal for our research on phonological phrasing and cliticisation since they are written in rhyming verse (two iambic and one trochaic), allowing us to draw conclusions about how words are grouped together, which in turn provides evidence for cliticisation. *Lutgart* is known to have been written in iambic tetrameter (Fikkert 2000; Zonneveld 2000) and has been regarded as the only iambic Middle Dutch text. However, we have found that *Saladijn* too is written in iambic verse, in contrast to *Mellibeus* which is trochaic. The spelling conventions are also regular (e.g., Mudrow 1994:110) with only minor differences between the two hands.

In what follows, we will briefly discuss the effects of encliticisation in Germanic in general, including 18th and 19th century reports on encliticisation in Dutch. We will then discuss synchronic accounts on cliticisation in Modern Dutch with a brief excursus into experimental evidence and then turn to the medieval period and examine orthographic contractions, metrical grouping, and cliticisation patterns observable from these texts.

2. Germanic Historical context

Both West and North Germanic languages show cliticisation of function words, a familiar phenomenon in older and modern stages of Germanic languages. There are many cases in the history of Germanic where cliticisations lead to affixation, especially in verbal suffixes that are derived from clitics, since verbal inflection is nearly always suffixal rather than prefixal. Where these suffixes derive

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(i) *Mellibeus het boec van troeste* (attributed to Jan van Boendale), didactic poem translated from Latin by Albertanus van Brescia, completed in 1342
(ii) *Jans Teesteye* (by Jan van Boendale)
(iii) *Boec van der wraken* (attributed to Jan van Boendale)
(iv) *Dit es van Maskeroen* (attributed to Lodewijk van Velthem), *Van den coninc Saladijn ende van Hughen van Tabaryen* (by Hein van Aken), *Die tien plaghen ende die 10 gheboden* and *Dit is noch van salladine* (by Hein van Aken).

[2] Kienhorst (2005, 799) dates the manuscript around 1375.
[3] Kopenhagen, Ny kgl. Saml. 168 43 (*Life of St Lutgart*, books 2 and 3).
[4] Jan van Boendale, author of *Mellibeus*, hailed from Boendale in Brabant and was city clark in the Brabantic town of Antwerp most of his life. Hein van Aken, author of the *Saladijn* text, came from Brussels, also in Brabant. Willem van Afflighem was from Afflighem which is also in Brabant. We thus assume that the dialects were similar.
[5] The full diplomatic transcription of Ms Marshall 29 is one of the outcomes of the project *Word and Sentence Phonology in Middle Dutch.* http://www.ling-phil.ox.ac.uk/dutch

from clitics, they are necessarily enclitics, confirming the tendency for encliticisation in Germanic. For example the verbal ending *-est*$_{2SG}$ in German is derived from the Proto-Germanic present indicative ending *–*es* and the postponed personal pronoun **þu*. When the clitic became inseparable the new suffix *-est* was formed (Lahiri and Plank 2010). Another classic case is the dental suffix for the preterite tense of weak verbs, whose source (or at least the source reconstructed most plausibly) was the auxiliary or light verb 'to do, make', Proto-Germanic **ded*- in the imperfect form (from Proto-Indo-European **dhe-dheH1-*, with reduplicating present; cf Lahiri 2000).

(2) *Development of Germanic dental preterite*

DENTAL PRETERITE:	Verb - /do/$_{past}$	>	Verb=d
English:	kissed		filled
German:	küsste		füllte
Dutch:	kuste		vulde

The past tense of 'to do' was added to a non-finite form of a weak verb and later cliticised when it was no longer an independent word. Later, the consonantal segment of 'to do' was reanalysed as a suffix (cf. also Lahiri 2000: 113) and the voicing of the dental preterite reflects language independent contrasts.

Other productive cases of cliticisation include the encliticisation of definite articles to prepositions in Modern German, e.g. *in d-as N > in=s* 'into the', *zu d-er N > zu=r* 'to the', *in d-em N > im (in=m)* 'in the'. The determiner encliticises to a preposition and thus forms a new word, made up of the unchanged preposition and the last consonant of the determiner. The preposition and determiner retain their morphological properties since they are still separable: e.g. both *in das* and *ins* occur frequently in different contexts. The postponed definite articles in North Germanic constitute a further example: the postponed determiner encliticised to the preceding noun and became a suffix as in Swedish *en björn* 'a bear' vs. *björnen < björn =en < björn (h)inn* 'the bear'. Thus, encliticisation seems to be the norm.

Early grammarians such as Steele and Sweet already recognised that prosodic grouping is often not isomorphic with syntactic grouping and that each language has its own phonological phrasing. That rhythm functions independently of syntax and morphology, was already propagated in the eighteenth century by Steele (1775), and further developed in the 19th and 20th century, e.g. by Sweet (1877, 1885) and Sievers (1901a, 1901b). It was taken up again by Fudge (1999) who illustrated the necessity to assume a grammatical hierarchy as well as a phonological one.

As we noted, encliticisation is preferred over procliticisation in English, German, and Dutch. Early linguistics literature is replete with non-isomorphic syntax/phonology grouping. Henry Sweet gives the following examples for English (3) and for Dutch (4)

(3) Parsing from Sweet (1885: 3)

English

Syntactic grouping	(The) (Thames) (flows) (through a shallow valley) (called) (the Thames Valley)
Prosodic grouping	(The) (Thames) (flows through a) (shallow) (valley) (called the) (Thames) (Vall

(4) Dutch (Sweet 1877: 143)

	Grouping		Gloss
a)	Syntactic	(Hoe) (genoeg'lijk) (rolt) (het leven) (des gerusten landmans) (heen)	how pleasant-ly roll-3P.SG the life the.GEN calm peasant-GEN PART *How pleasantly life rolls for the calm peasant*
	Prosodic	(Hoe ge) (noeglijk) (rolt het) (leven) (des ge) (rusten) (landmans) (heen)	
b)	Syntactic	(De wind) (is) (naar het westen) (gedraaid)	the wind is to the west turn-PAST *The wind has turned west.*
	Prosodic	(De) (wind is) (naar het) (westen ge) (draaid)	
c)	Syntactic	(Ik kan) (mijn boek) (niet vinden)	I can my book not find *I cannot find my book*
	Prosodic	(Ik kan mijn) (boek niet) (vinden)	

According to Sweet, in both English and Dutch, the unstressed elements are encliticised to the preceding word. For instance, in English, the determiners *a* and *the* encliticise leftwards and in Dutch, the unstressed elements include a number of different syntactic classes such as unstressed prefixes like *ge-* (4a,b), pronouns like *mijn* (4c) or determiners like *het* (4a).

Thus, encliticisation is widespread in Germanic and the non-isomorphic mapping between syntax and prosody has long been observed by scholars. As we shall see in the next section, the encliticisation patterns noted by Sweet for 19th century Dutch is equally obersevable in the modern language.

3. CLITICISATION IN MODERN DUTCH

Cliticisation is frequent in Modern Dutch (Berendsen 1986, Gussenhoven 1986, Booij 1995). Strong and weak forms of first and second personal pronoun (cf. Booij 1995: 167) can encliticise to a verb or to a function word. For instance, weak forms of personal pronouns like *we, je, (d)ie (<hij), d'r (<haar)*

and determiners cliticise, e.g. *was hij > was-ie, ik zie haar > ksider*. Especially in the case of modal verbs and auxiliaries the verb can be contracted in the process when the weak forms *'k* or *je* encliticise to it. Booij lists the following examples:

(5) *Encliticsation of first and second person pronoun* (from Booij 1995)

ik/ək	heb=ik [hɛk]	< heb ik	'have I'
	kan=ik [kaŋk]	< kan ik	'can I'
jij/jə	heb=je [hɛjə, hɛj]	< heb jij	'have you'
hij/-ie	komt-ie [komti]	< komt hij	'comes he'
zij/ze	dat=ze [dasə]	< dat zij (sg or pl)	'that she/they'het/(ə)t
het	gaat='t [χatət]	< gaat het	'goes it'wij/we
wij	dat=we [daʊe]	< dat wij	'that we'
je	zul=je [zyjə]	< zul je	'will you'

Thus, many function words can cliticise in phrasal phonology. Such function words include *d*-initial function words *de, dat, daar/er* and personal pronouns *hij, haar, wij, jij, zij*. Personal pronouns are often reduced and cliticised when they are unaccented, e.g. *jij > je, wij > we, hij > (d)ie, haar > dər* (Lahiri et al. 1990, cf. also Gussenhoven 1986 and Berendsen 1986).

Although encliticisation is frequent, procliticisation also occurs particularly in sentence initial position. Weak forms of personal pronouns and of some adverbs can be proclitics in specific contexts, usually sentence initially. Booij describes these forms as contraction (cf. Booij 1995: 179).

(6) *Sentence initial procliticisation*

ik/ək	ik=houd [kout]	< ik houd	'I hold'
jij/jə	je=houdt [jout]	< jij houdt	'you hold'
zij/ze	zij=houdt [zout]	< zij houdt	'she holds'
het/(ə)t	het=houdt [tout]	< het houdt	'it holds'
wij/we	wij=houden [ʊoudə]	< wij houden	'we hold'
zij/ze	zij=houden [zoudə]	< zij houden	'they hold'

With Berendsen, Booij and Gussenhoven, we distinguish encliticisation and procliticisation and do not distinguish between syntactic and phonological clitics as Van Gestel does. Van Gestel et al. (1992: 133-134) state that cliticisation is a product of a syntactic incorporation process. In case of procliticisation

and in some cases of encliticisation there is no incorporation, only phonological contraction. e.g. in *dolifant* < *de olifant*, where the contraction is a result of prevocalic schwa-deletion.

The generally accepted view is that cliticisation is prosodic word formation, whereby a weak function word attaches to a content word or to another function word and thus forms a new prosodic word. We have assumed (following Selkirk 1984, 1995; Hayes 1995; Gussenhoven 1986; Booij 1996 and others; see also Gussenhoven and Jacobs 2013) that prosodic word formation is recursive and that both enclitics and proclitics will attach to the nearest prosodic word to form another prosodic word, contrary to Nespor and Vogel (1986) who introduced the concept of 'clitic group'. They argued that clitics cannot be regarded as separate prosodic words in the first place since clitics are prosodically deficient. They referred to a host with attached clitic as a 'clitic group', rather than a new prosodic word. Nespor and Vogel preferred a more direct syntax-phonology mapping and indeed do not support recursive word formation. Vogel (2009) has recently claimed that the 'clitic group' should be replaced by a 'composite group' which again, is in addition to the prosodic word. The central reason for the new phonological category is to avoid recursion. However, there is little evidence that we require another category. Encliticisation can obviously apply to more than one function word and as we have just seen, phonological word formation was independent from surface syntactic structure throughout the history of Germanic, leading to various morphological innovations.

Our cliticisation claims can be formalised as prosodic word formation as follows:

(7) *Cliticisation and prosodic word formation*

(i) Encliticisation of a content word and a function word leads to a prosodic word: $'\omega\ \sigma_{FN} > ('\omega{=}\sigma)_{\omega}$

Sint en Piet > [sintn̩] *Piet*

(ii) Two function words could cliticise to become one prosodic word: $'\sigma_{FN}\ \sigma_{FN} > ('\sigma{=}\sigma)_{\omega}$

als ik > $[\text{alsk}]_{\omega}$

het is laat > $[\text{tɪs}]_{\omega}$ *laat*

(iii) A sentence initial function would cliticise to become one prosodic word: $'\sigma_{FN} = '\omega > ('\sigma{=}\omega)_{\omega}$

ik slaap> $[\text{ksla:p}]_{\omega}$

In addition to theoretical synchronic and diachronic evidence, experimental data from spontaneous language production also supports the fact that speakers employ prosodic grouping rather than syntactic grouping and prefer enciliticisation of function words during phonological encoding and language planning. Thus, in sentences like *Ic zoek de wijn*, native speakers grouped *de* with the verb *zoek* rather

than the syntactic phrase *de wijn* (cf. Wheeldon & Lahiri 1997). Similarly in English, native speakers preferred to encode the auxiliary *are* in *Dishcloths are dirty* with the preceding noun and not with the following adjective: i.e., the preferred grouping was (dishcloths=are) (dirty) (Wynne 2016).

Given the diachronic and synchronic patterns and experimental evidence, one asks whether encliticisation was always the norm in Dutch and to what extent this is evident in the written language. We now turn to Middle Dutch and examine prosodic grouping in verse and compare this with orthographic contraction. Since Germanic languages have shown encliticisation preference time and again, Middle Dutch rhyming verses could provide us with similar evidence.

4. METRE, RHYTHM, STRESS AND CLITICISATION OF FUNCTION WORDS

In Middle Dutch, the metrical foot for lexical stress is assumed to be trochaic just as it is in the present day (cf. Fikkert 2000: 313-323). In general, the preferred metre in verse during this period has been assumed also to be trochaic. However, this does not hold across all manuscripts; although *Mellibeus* is written in trochaic verse, *Saladijn* is written in iambic verse, similar to *Lutgart*, which is one of the oldest available texts in Middle Dutch (Fikkert 2000; Zonneveld 2000). We first provide evidence for the metre and then discuss cliticisation.

4.1 Metre in *Lutgart, Saladijn* and *Mellibeus*

Halle and Keyser (1966) provide a set of metrical principles in their analysis of Chaucer's iambic pentameter, which were adapted by Zonneveld (1993, 1998, 2000) and later again by Fikkert (2000) for their analysis of Lutgart. In our analysis of Saladijn, we have further adapted these principles.[6] Like

[6] Metrical principles for iambic tetrameter. Similar to Fikkert, we adapted principles for iambic tetrameter from Halle & Keyser, 1966: 380-381.

a. Principle I
   The iambic tetrameter verse consists of eight positions to which may be appended one final extrametrical syllable which must contain a schwa.
b. Principle II
   A position is normally occupied by a single syllable, but under certain conditions, it may be occupied by more than one syllable or none.
   Condition 1. Two vowels may constitute a single position, provided that they adjoin or are separated by a liquid or nasal or by a word-boundary, which may be followed by *h-*, *w-* or a coronal consonant and provided that one of them is a weakly stressed or unstressed vowel.
   Condition 2. An unstressed or weakly stressed monosyllabic word may constitute a single metrical position with a preceding stressed or unstressed syllable.
   Condition 3. Inversion of the iambic rhythm may occur line initially and very occasionally line internally.
c. Principle III

Lutgart, Saladijn is written in iambic tetrameter, which ideally consists of eight positions *w s w s w s w s* to which one extrametrical syllable may be appended (Principle I) to create a feminine rhyme. This extrametrical syllable must contain a schwa, i.e. it cannot have a full vowel. Sometimes the number of syllables can be higher than 9 (Principle II), in which case schwas may be in an elision position to form one position with the following vowel. This may be the case word finally or word internally. In (8), we provide examples from Saladijn, elucidating each of these principles. Final extrametrical syllables are found in (8a, b, e, f), whilst the elision of the final syllable before another vowel is evident in (8 c, e) and internal elision in (8f). Most lines are in tetrameter, although occasionally a line has only three beats making it a trimeter (8e). Line initial inversion of the iambic stress pattern is permitted though infrequent, as in (8g). Inversion is not allowed in trochaic metre.

(8) Iambic rhythm in *Saladijn*[7]

(a) S15509 Want 'god en 'woudse 'niet be'waren
(σ σ) (σ σ)(σ σ) (σ σ) σ
Because God did not want to save them

(b) S15511 Si 'bleuen 'doot met 'groten 'scaren
(σ σ) (σ σ) (σ σ) (σ σ) σ
They died in large numbers

(c) S15495 In 'heyde'nisse een 'rijc sou'daen
(σ σ) (σ σ) (σ σ) (σ σ)
In heathendom a rich sultan

(d) S15497 Daer 'yc ye 'af con'de ver'staen
(σ σ) (σ σ) (σ σ) (σ σ)
Of whom I could understand

(e) S15503 Reg'neerde in 'sinen 'iaren

A stress maximum is constituted by a syllable bearing linguistically determined stress that is greater than that of the two syllables adjacent to it in the same verse. A stress maximum may only occupy even positions within a verse, but not every even position need be so occupied.

[7] In all our text samples characters in italics represent resolved abbreviations. We have underlined characters that are deleted in prosody.

(σ σ) (σ σ) (σ σ) σ
Reigned in his years

(f) S15613 Al'toes selt 'vorderen 'goede 'dade
(σ σ) (σ σ) (σ σ) (σ σ) σ
Always shalt further good deeds

(g) S15492 'Dat en es 'sijn bate 'noch sijn 'ere
(σ σ) (σ σ) (σ σ) (σ σ) σ
That is neither his gain nor his honour

In contrast, *Mellibeus* was written in trochaic tetrameter. As we see in (9), *Mellibeus* has four trochaic metrical feet per line, where each strong beat is followed by a weak one. Ideally, a trochaic tetrameter consists of eight positions *s w s w s w s (w),* and a syllable may be deleted from the eighth position to create masculine rhyme (9f). The number of syllables may be higher than eight in which case unaccented syllables containing a schwa may be deleted, either word finally as in *wése* (9a) and and *ghíne* (9c) or internally as in *seget* (9b). Alternatively, an extrametrical syllable may be appended line initially (9f). Note that the trochaic foot in metre may cross word boundaries such as in (9b) *(sene) (ca die)* from <*Seneca die*>. The first two syllables are grouped together, whereas the third syllable initiates a new rhythmical unit with the following function word.

(9) Trochaic metre in *Mellibeus*

(a) M2335 'Nochtan 'wese moet 'op sijn 'hoede
(σ σ) (σ σ) (σ σ) (σ σ)
Nevertheless has to be on his guard

(b) M2336 'Dat seget 'Sene'ca die 'vroede
(σ σ) (σ σ) (σ σ) (σ σ)
That says Seneca the wise one

(c) M2339 'Ghine sult 'niet ont'sien al'lene
(σ σ) (σ σ) (σ σ) (σ σ)
You shall not only fear

(d) M1371 'Want so 'wie hem 'inder 'ioghet
(σ σ) (σ σ) (σ σ) (σ σ)

Because whoever himself in his youth

(e) M1372 'Niet en 'oefent 'toter 'doghet

(σ σ) (σ σ) (σ σ) (σ σ)

Does not train to virtue

(f) M187 Ic (ˈhebbe) (ˈlieuer) (ˈdes sijt) (ˈvroet)

σ (σ σ) (σ σ) (σ σ) (σ)

I prefer, so you know

Based on these observations, we can now adapt the metrical principles (cf. footnote 6) for trochaic tetrameter:

(10) Principles for trochaic tetrameter

Principle I

The trochaic tetrameter verse consists of eight positions to which may be appended one initial extrametrical syllable.

b. Principle II

A position is normally occupied by a single syllable, but under certain conditions, it may be occupied by more than one syllable or none.

Condition 1. Two vowels may constitute a single position, provided that they adjoin or are separated by a liquid or nasal or by a word-boundary, which may be followed by h-, w- or a coronal consonant and provided that one of them is a weakly stressed or unstressed vowel.

Condition 2. An unstressed or weakly stressed monosyllabic word may constitute a single metrical position with a preceding stressed or unstressed syllable.

c. Principle III

A stress maximum is constituted by a syllable bearing linguistically determined stress that is greater than that of the two syllables adjacent to it in the same verse. A stress maximum may only occupy odd positions within a verse, but not every odd position need be so occupied.

With this background, we can now turn to metrical grouping and orthographic contractions in Middle Dutch verse. Since encliticisation is the norm, we expect similar patterns in verse. However, orthographic contractions are plentiful, and a cursory examination suggests that they may all reflect cliticised forms. However, as we shall see, this is not the case.

5. Prosodic grouping, function words and orthographic contraction

Boundaries of heterosyllabic words are not sacrosanct in verse. Thus, poets often combine words in orthography; e.g., *vercocht ic* > *vercochtic* or *seg dat* > *seget*. Our interest in this paper is to determine how orthographic contraction relates to prosodic grouping. In particular, we want to determine the relationship between prosodic grouping in verse and orthographic combinatory sequences of words such as *willic, seget* etc. Present day Dutch, like other Germanic languages, tends to encliticise function words in speech, attaching them leftwards to a stressed syllable. However, function words themselves can be stressed, becoming a prosodic word and may encliticise other function words. The question arises to what extent orthographic contraction predicts prosodic grouping. Does orthographic merging automatically suggest prosodic grouping or is it only a convention? The issues we address are as follows:

(11) Prosodic grouping and function words

(A) To what extent does prosodic grouping follow word boundaries?

(B) How does stress and function words interact in trochaic vs. iambic verse?

(C) Is orthographic contraction of function words isomorphic with metrical grouping?

We consider each in turn.

(11A) To what extent does metrical grouping follow word boundaries?

As we mentioned earlier, metrical grouping in verse rarely obeys word boundaries (cf. Kiparsky 1977; 1989). However, the Middle Dutch poets differ in the way in which they treat unstressed function words and other unstressed syllables in heterosyllabic words. Predictably, metrical grouping shows that each stressed syllable is followed by an unstressed one in trochaic rhythm (cf. 9) and preceded by an unstressed syllable when the metre is iambic (cf. 8). Elision of unstressed syllables is common in iambic and trochaic metre in our texts. A schwa could become silent as in *regneerde in* > *regneerd<u>e</u>=in* (8e) to avoid two unstressed syllables following a stressed vowel. Such examples also illustrate that metrical grouping often does not respect word boundaries. For example, we have seen this in (8e) where the iambic phonological grouping *(in 'sin) (en 'iar)en* for <*in sinen iaren*> crosses word boundaries. Other words that show non-isomorphic mapping between lexical and prosodic units are *ontsien, allene, heydenisse* and *meneghe* in (12c, d, f). A subset of the examples from (8) and (9) are presented in (12) with appropriate metrical grouping.

(12) Prosodic grouping in *Mellibeus* and *Saladijn* (elided elements are underlined)

(i) Trochaic grouping *Mellibeus*

(a) ('Noch.tan) ('we:se moet) ('op sijn) ('hoe.de) *nochtan wese moet op sijn hoed e*
(σ σ) (σ σ) (σ σ) (σ σ) 'yet should be on his guard'

(b) ('Dat seget) ('Sé:.ne.) ('ca die) ('vroe.de) *dat seget Seneca die vroede*
(σ σ) (σ σ) (σ σ) (σ σ) 'this says Seneca the wise'

(c) ('Ghine sult) ('niet ont) ('sien al) ('le.ne) *ghine sult niet ontsien allene*
(σ σ) (σ σ) (σ σ) (σ σ) 'you shall not only fear'

(ii) Iambic grouping *Saladijn*

(d) (In 'hey) (de'nisse) (een 'rijc) (sou'daen) *in heidenisse een rijc soudaen*
(σ 'σ) (σ ' σ) (σ 'σ) (σ 'σ) 'in heathendom a great sultan'

(e) (Daer 'yc) (ye 'af) (con'de) (ver'staen) *daer ic ye af conde verstaen*
(σ σ) (σ σ) (σ σ) (σ σ) 'as far as I could understand'

(f) (Ende 'me) (neghe 'doecht) (had 'hi) (be'uaen) *ende meneghe doecht had hi beuaen*
(σ σ) (σ σ) (σ σ) (σ σ) 'and many a virtue he had acquired'

The trochaic grouping in Mellibeus obeys words boundaries in (12ia) but not in (12ib, c). The sequence of three lexical words *niet ontsien allene* is parsed in trochaic rhythm as *(niet ont) (sien al) (lene)* in the metre. Similarly for iambic grouping in Saladijn, (12ii d & f) do not follow word boundaries, but (12iie) does. Thus, *in heydenisse* is iambically parsed as *(in hey) (denisse)* where the metre splits up the word *heydenisse* into two metrical feet. A similar metrical split can be observed in *ende meneghe doecht* which is parsed as *(ende 'me) (neghe 'doecht)*. We observe non-isomorphic mapping for lexical and metrical parsing in iambic and trochaic lines alike (cf. 13). Clearly, word boundaries are not sacrosanct in heterosyllabic words.

(13) *Mismatch in lexical and prosodic grouping* (M 2339)

	trochaic metre	**iambic metre**
Lexical grouping:	(niet) (ontsien) (allene)	(in) (heydenisse)
Prosodic grouping:	(niet ont) (sien al) (lene)	(in hey) (denisse)

Thus, as Sweet pointed out earlier, unstressed syllables can be parsed and prosodically grouped easily, becoming normal metrical feet in both iambic and trochaic verse.

(11B) To what extent do function words play a differential role in trochaic vs. iambic verse?

We now turn to the way in which function words are parsed in the two metres. Recall that in normal speech, unless function words are stressed and thereby become full prosodic words, there is a strong tendency for function words to be encliticised to a stressed word. However, since we are dealing with both iambic and trochaic rhythm the question arises as to whether functions words are treated differently in different metrical environments. We chose to examine in detail the function word *ic 'I'*, which occurs very frequently and provides us with a variety of contexts. For all three texts, we investigated the metre and stress patterns with reference to *ic 'I'* and the examples in (16) illustrate the various ways *ic* has been used in verse. In (14) we provide relevant examples with their glosses and in (15) the prosodic grouping is illustrated according to iambic and trochaic metre.

(14) *Pronoun* ic *in the three texts; the single underlined elements are not audible in prosody*

(a) *Ic* = stressed (strong position in metre)

L004: *Daer ic in mire goeder trowen* 'where I in my good trust'

S15550: *Dat ic vergelde dese scout* 'That I repay this bailiff'

M 2930: *Dat ic vercoele minen moet* 'that I may cool my mood'

(b) *Ic* = unstressed (extrametrical or in weak position)

L038: *Ic siese comen so gereet* 'I see them coming so ready'

S15530: *Ic conde soe meneghen besant* 'I could so many golden byzantine coins'

M 187: *Ic hebbe lieuer des sijt vroet* 'I prefer, you should know'

(c) *Ic* = unstressed (in weak position), cliticising with another unstressed syllable in prosody, σ=ic

L10817: *Want sinen name ic nit en weet* 'For his name I do not know'

S15717: *Hier te biddene ic raet v wale* 'Here to pray I do advise you'

M 178: *Ende ic achte dat si doet si* 'and I believe that she is dead'

The prosodic grouping of each set of examples is given in (15).

(15) Metrical grouping of various manifestations of *ic*

	Manifestations of <ic>	**Lutgart (L) - iambic**	**Saladijn (S) - iambic**	**Mellibeus (M) - trochaic**
a	*Ic* = stressed	(Daer ˈic) (in ˈmi)(re ˈgoe)(der ˈtrow)en	(Dat ˈic) (verˈgel)(de ˈde) (se ˈscout)	Dat (ˈic ver)(ˈcoele) (ˈminen) (ˈmoet)

b	*Ic* = unstressed, weak position in metre	(Ic ˈsie) (se ˈco) (men ˈso) (ge ˈreet)	(Ic ˈconde) (soe ˈme) (ne ˈghe) (be ‘sant)	Ic (ˈhebbe) (ˈlieuer) (ˈdes sijt) (ˈvroet)
c	*Ic* = unstressed, cliticising with another unstressed syllable in prosody σ=ic	(Want ˈsi)(nen ˈna) (me ic ˈnit) (en ˈweet)	(ˈHier) (te ˈbidde) (ne ic ˈraet) (v ˈwa)le	(ˈEnde ic) (ˈachte) (ˈdat si) (ˈdoet si)

A complex pattern of prosodic grouping can be observed. When *ic* is stressed, it must be the head of a foot (iambic or trochaic cf. 15a). If *ic* is unstressed line initially, it can be extrametrical (15b-M) or it can constitute a weak branch of a foot in for example (*ic ˈconde)* (15b-L,S). Thus, it emerges that *ic* can be in both stressed and unstressed positions. If stressed, however, it must be head of the foot, attracting a beat for metrical reasons in trochaic verse; if unstressed they can be grouped in various different ways. The most interesting case is (15c) where unstressed *ic* is metrically grouped with a lexical word ending with an unstressed syllable. Note, that this is not obvious in orthography.

(11C) Is orthographic contraction of function words isomorphic with metrical grouping?

The next question that arises is whether orthographic contraction can be regarded as an indicator for metrical grouping. Thus, if words are written together, does it suggest that in verse they must remain restricted to the same foot? We provide a set of examples in (16) of instances of orthographic contraction across the three texts.

(16) Orthographic contraction of function words in the three texts

(a) *Ic* = another clitic; ic=σ

L11182: *Ter herten doe ict irsten las* ‘to heart, when I first read it’

S15674: *Want ict wel gh*e*rne onderuo*n*de* ‘Because I would like to fathom it’

M 372: *Doen stont op also ict las* ‘Then [he] arose as I read it’

(b) *Ic* = contracted in orthography, and remains together in metre

L11125: *Hebbic u vonden willech gnoch* ‘I have found you willing enough’

S15728: *Bi waerheden heer hughe datsi* ‘truly Sir Hugh that they’

M3373: *Maer hebbic messeghet of mesdaen* ‘but if I have said or done anything wrong’

(c) *Ic, ghi* = contracted in orthography, but separated in metre

L1118: *Dat willic dat u cundech si* ‘This I want you to know’

S15732: *Ende ooc en willic niet dat ghi* ‘And I also do not wish that you’

M527: *Want dadic nv uwen raet* ‘Because if I followed your advise’

The metrical grouping of all the examples in (16) are given in (17).

(17) Interaction of orthographic contraction and metrical grouping: the case of *ic* and *ghi*

		Lutgart (L) - iambic	Saladijn (S) - iambic	Mellibeus (M) - trochaic
a	Ic = attracting another clitic; ic=σ	(Ter ˈhert)(en ˈdoe) (ict ˈir)(sten ˈlas)	(Want ˈict) (wel ˈgher)(ne on)(derˈuon)de	(ˈDoen stont) (ˈop al)(ˈso ict) (ˈlas)
b	*Ic* = contracted in orthography, grouped in metre	(Hebbˈic) (u ˈvon)(den ˈwil)(lech ˈgnoch)	(Bi ˈwaer)(heˈden) (heer ˈhughe) (datˈsi)	Maer (ˈhebbic mes)(ˈseghet) (ˈof mes)(ˈdaen)
c	*Ic* = contracted in orthography, but separated in metre	(Dat ˈwill) (ic ˈdat) (u ˈcun) (dech ˈsi)	(Ende ˈooc) (en ˈwill)(ic ˈniet) (dat ˈghi)	(ˈWant da)(ˈdic nv) (ˈuwen) (ˈraet)

In various examples in (16) we see that two function words can be orthographically contracted e.g. *ic dat > ict, wil ic > willic.* This follows normal prosodic patterning where two function words could come together, as we have consistently seen in the history of Germanic including Dutch. When another function word is orthographically contracted to *ic*, stress can either fall on *ic* (17a-S) or be unstressed (17a-L,M). Thus the stress is irrespective of the metre. The function words *ic* or *si* can orthographically merge with another stressed function word and remain in the same foot (17b) where the weak vowel in the encliticised function word can also be elided as in *hebbic* as in (17b-M). However, this is not compulsory as we see in the examples (17c), which are very revealing. The orthographically contracted *willic* (17c-S,L) and *dadic* (17c-M) are separated in metre, belonging to different feet.

The examples above make two different points. First, orthographic contraction does not go hand in hand with metrical grouping. A line like *"Dat willic dat u cundech si"* in Lutgart is parsed as (Dat ˈwill) (ic ˈdat) (u ˈcun) (dech ˈsi); thus although *willic* is written as one word orthographically, it must be split for metrical purposes. A second related point, is that in verse an orthographic sequence of FN=FN does not necessarily suggest that the second element is unstressed, which would be the case in normal language. This we see in (17b-L) where normally the first element in *hebbic* should be stressed, but it is not; instead *ic* is stressed in an iambic rhythm. Thus the orthographic contraction of FN-FN does not always behave as if a weak function word encliticises to a strong one. This is not just true for iambic rhythm but also holds for trochaic verse such as in Mellibeus (17c) *"Want dadic nv uwen raet"* where *dadic* is separated into (ˈWant da) (ˈdic nv) (ˈuwen) (ˈraet), with *ic* being the head of the foot.

To reiterate, during normal prosodic encliticisation in speech, a function word can only encliticise if it is unstressed and we would expect the unstressed function word to appear in a weak position in the metre. If this were to be taken for granted in verse, then for iambic metre, with its *wsws* pattern, this means that if orthographically combined function words indicate prosodic cliticisation, then sequences such as *datic, alsic, hebbic* with initial stress should not appear in the onset of an iambic line; this holds in (17c-L) where *ˈwillic* is in the first foot but not line initial. In trochaic metre, where the pattern is *swsw* we would expect the opposite: *datic, alsic, hebbic* may occur line initially. This is what we find (17b-M) where *ˈhebbic* is line initial in a trochee. However, in the same texts, we also find occurrences of the contracted function word in strong position; in (17a-L) and (17c-M) when *ic* is the second element in a sequence of FN-FN and is in a strong position where it has to bear stress. In fact, (17c-M) shows a mismatch between orthography and metrical grouping where *dadic* is split between two feet, and *ic* is the head of the foot. In the next few paragraphs we take a closer look at orthographic contraction and the prominence of the individual function words. To what extent do the poets prefer to maintain the pattern ˈFN=FN with prominence on the first function word?

If orthography is a regular predictor of cliticisation we would also expect this to show in metrical grouping such that the host (first function word) would have to be in strong position and the cliticised function word in weak position. Indeed we find many examples where sequences of ˈFN=FN, written together, also lead to prominence on the leftmost clitic.

(18) Prosodic grouping $\omega_{('\sigma)FN}\ \sigma_{FN}\ >\ (\omega_{('\sigma)}=\sigma_{FN})_{\omega}$

L498	Van heresiën **totter** doet	*tot der > totter*	'to the'
	(Van 'he)(re'si)(ën '**tot)(ter** 'doet)		

L11235	Dat **sijs** en hadde engheene macht	*sij des > sijs*	'she the$_{gen}$'
	(Dat '**sijs) (**en 'had)(de en'ghee)(ne 'macht)		
L11621	Vergelden **metter** volre maten	*met der > metter*	'with the'
	(Ver'gel)(den '**met)(ter** 'vol)(re 'ma)ten		
L10822	Want **alsic** van din mensche las	*als ic > alsic*	'if I'
	(Want '**al)(sic** 'van) (din 'men)(sche 'las)		
S1739	En*de* dat ghi recht al **totter** doot	*tot der > totter*	'to the'
	(Ende 'dat) (ghi 'recht) (al '**tot)(ter** 'doot)		
S1774	Op onrecht tote dat **ghijt** v*er*weert	*ghij dat > ghijt*	'you that'
	(Op 'on)(recht 'tote) (dat '**ghijt)** (v*er*'weert)		
M540	Ende van wiuen **int** ghemene	*in dat > int*	'in the'
	('Ende van) ('wiuen) ('**int** ghe)('mene)		
M2936	Ic sal **metten** scatte mijn	*met den > metten*	'with the'
	('Ic sal) ('**metten) (**'scatte) ('mijn)		
M3400	**Vander** sware auonturen	*van der> vander*	'of the'
	('**Vander)** ('sware) ('auon)('turen)		

However, although fairly common, this is not necessarily the case. That is expected ˈFN=FN can lead to FN=ˈFN in verse even if it is written together as in (19b). We compare the two types below.

(19) Orthographic combinations of function words and metrical positions: ˈFN=FN & FN=ˈFN

		Lutgart - iambic	**Saladijn - iambic**	**Mellibeus – trochaic**
a	*second FN* in weak position	Dit **salic** wedermaken so (Dit ˈ**sal)(ic** ˈwe)(derˈma)(ken ˈso)	Nu **willic** bidden na uwer lere (Nu ˈ**will)(ic** ˈbidden) (na ˈu) (wer ˈlere)	**Soudic** bi uwe*n* rade werken **(**ˈ**Soudic)** (ˈbi uwe*n*) (ˈrade) (werken)
b	*second FN* in strong position	**Salic** u seggen, hort na mi **(Sal**ˈ**ic) (**u ˈseg)(gen, ˈhort) (na ˈmi)	**Datsi** v helpen tuwen vromen (**Dat**ˈ**si) (**v ˈhel)(pen ˈtu)(wen ˈvro)men	Want **dadic** nv uwen raet (Want **dad)(ic** nv) (uwen) (raet)

In Mellibeus, we do find the pattern ˈFN=FN in (19a), where for *soudic* and *datmen,* the host word is in strong position and the clitics (*ic, men*) are in a weak position. However, the second function word in an orthographic sequence can also be in strong position; we see this in both iambic and trochaic

rhythm in (19b). One would have expected ˈFN=FN but what we get is FN= ˈFN. Thus, even when two function words are written together in orthography, they do not behave as a regular cliticised sequence.

Thus, metrical grouping suggests that although written together, words are not always confined to one foot neither in iambic nor in trochaic metre. Only in trochaic metre, when host-plus-clitic is within a single foot, does orthography and expected cliticisation pattern coincide. This suggests that orthography alone can be misleading. First it does not necessarily follow metrical grouping. Although contracted, units with two function words easily stretch over two feet in iambic metre as in (*Dit* ˈ***sal)(ic*** *ˈwe)* and (*Nu* ˈ***will)(ic*** *ˈbid)* (18a). Here, the first function word takes prominence as would normally be expected. In trochaic metre, however, orthographically combined units of two function words can also stretch over two feet, such as *(*ˈ*Want* ***dad)*** *(*ˈ***ic*** *nv), (*ˈ*Wet* ***dat)(*** ˈ***men*** *ghe),* where the second function word is stressed, contrary to expectation. Second, prominence patterns do not coincide with what we would expect in a clitic sequence. Thus, FN=FN sequences are expected to have initial prominence, but they do not necessarily do so even if written together: e.g. the above sequence *(*ˈ*Want* ***dad)(***ˈ***ic*** *nv)* shows that *ic* takes main prominence. Consequently, metre is the deciding factor and orthographic contractionis just a short hand method of writing.

5. More on prosodic grouping in verse with and without orthographic contraction

As we have seen earlier in Modern Germanic languages encliticisation is far more common than procliticisation. Here we focus on sequences of content words and function words in encliticisation. More abstractly, we propose the following prosodic grouping:

(20) Expected prosodic grouping

(i) $\omega_{('\sigma)}\ \sigma_{FN} > (\omega_{('\sigma)}\ =\sigma_{FN})_{\omega}$

(ii) $\omega_{('\sigma\ \sigma)}\ \sigma_{FN} > (\omega_{('\sigma)}\ =\sigma_{FN})_{\omega}$

(iii) $\omega_{(\sigma\ '\sigma)}\ \sigma_{FN} > (\omega_{(\sigma\ '\sigma)}\ =\sigma_{FN})_{\omega}$

(iv) $'\sigma_{FN}\ \sigma_{FN} > (\omega_{('\sigma)}\ =\sigma_{FN})_{\omega}$

A weak function word can encliticise to a monosyllabic prosodic word thus becoming a single prosodic word (20i). A heterosyllabic trochaic word with penultimate stress can attract a function word, but the unstressed syllable deletes (20ii). Thus, in *antwórde ic > antwórd ic > antwórd=ic* (*antwerd* is disyllabic after apocope of schwa). A heterosyllabic word with stress on the last syllable can be host to a weak function word and encliticisation (20iii). Finally, two function words, the first of

which is accented, may cliticise and become a prosodic word (20iv). Examples from *Lutgart, Saladijn* and *Mellibeus* in (21-24) show these patterns. We illustrate each separately.

(21) Cliticisation reflected in orthography (cf.20i): $(\omega_{('\sigma)} =\sigma_{FN})_{\omega}$

L11301	Warumme **laetti** dan, Lutgart	*laet ghi > laetti*	'let you'
	(War'um)(me 'laet)(ti 'dan), (Lut'gart)		
S1793	Soe **gheeftem** mi in der waer bi	*gheeft hem > gheeftem*	'give him'
	(Soe 'gheef)(te*m* 'mi) (in 'der) (waer 'bi)		
M3395	**Doeter** met al uwen wille	*doet daer > doeter*	'do there'
	('Doeter) ('met al) ('uwen) ('wille)		

Monosyllabic prosodic words are metrically heavy and can therefore host a clitic. In (21-L) *gh* is dropped for the phrase *laet ghi*, in *doet daer* the full vowel in *daer* becomes a schwa and initial *d* is deleted (possibly because it assimilates to the preceding voiceless stop and the resulting geminate degeminates) and in *gheeftem* initial *h* is dropped. Note that the accented host remains the same, while the weak clitic adapts to the host.

In disyllabic prosodic words ending in a light syllable, usually a schwa, the light syllable can be deleted so that the word effectively becomes a monosyllabic word to which a clitic may attach.

(22) Metrical grouping (20ii) $(\omega_{('\sigma\ \sigma)} =\sigma_{FN})_{\omega}$

L456	Mar **wildi** dat ic u bediede	*wilde ghi > wildi*	'you wanted'
	(Mar '**wil**)(**di** 'dat) (ic 'u) (be'die)de		
M3373	Maer **hebbic** messeghet of mesdaen	*hebbe ic > hebbic*	'have I'
	Maer ('hebbic mes)('seghet) ('of mes'daen)		
S1735	Her hughe **cledem** ene*n* roc root	*clede hem > cledem*	'dressed him'
	(Her 'hu)(ghe '**cle**)(**dem** 'en*n*) (roc 'root)		

A disyllabic (or polysyllabic) prosodic word where the last syllable can take a beat and hence is heavy can also host a clitic.

(23) Metrical grouping (20iii) $\omega_{(\sigma\ '\sigma)}\ \sigma_{FN}$ > $(\omega_{(\sigma\ '\sigma)} =\sigma_{FN})_{\omega}$

S15528	Here al **ver'cochtic** al mijn lant	*vercocht ic > vercochtic*	'I sold'
	(Here 'al) (ver'cocht)(=ic 'al) (mijn 'lant)		
M59	Inden yrsten **aenroepic** gode	*aenroep ic > aenroepic*	'I invoke'

('Inden) ('yrsten aen)('roep=ic) ('gode)

Finally, two functions words where the first is stressed, will cliticise as we have also seen before.

(24) Metrical grouping (20iv) $'\sigma_{FN}\ \sigma_{FN} > (\omega_{('\sigma)} =\sigma_{FN})_{\omega}$

L11235	Dat **sijs** en hadde engheene macht	*sij des > sijs*	'she the$_{gen}$'
	(Dat '**sijs) (**en 'had)(de en'ghee)(ne 'macht		
S15674	Want ict wel gherne onderuonde	*ic dat > ict*	'that I'
	(Want ˈict) (wel ˈgher)(ne on)(derˈuon)de		
M540	Ende van wiuen **int** ghemene	*in dat > int*	'in the'
	('Ende van) ('wiuen) ('**int** ghe)('mene)		

Thus, function words can become part of the preceding prosodic word. What is important is that even when two words are not written together, cliticisation can be distinguished through the metre in the examples below. In M240 the preceding word gets a beat and the schwa is deleted so that the clitic can attach. In the S15493, the sequence *en es* can only take one position in the iambic foot and thus the initial vowel of the unstressed auxiliary *es* is not pronounced.

(25) Further examples of metrical grouping and encliticisation leading to reduction, shown in metre.

L247	Daer si abdessen **name in** droege	*name in > namin*	'name in'
	(Daer 'si) (ab 'des)(sen 'name) (=in 'droe)ge		
S15493	**En es** niemen vroet in domme daet	*en es > ens*	'NEG PART is'
	(En=(e)s 'nie)(men 'vroet) (in 'dom)(me 'daet)		
M 240	Ende die **worme dat** hout doer et	*worme dat > wormdat*	'worm the'
	('Ende=die) ('worme=dat) ('hout doer) ('et)		

Just on the basis of the surface string, without taking into account metrical grouping, it appears that certain function words encliticise in some contexts but not in others. However, it turns out that where encliticisation might be expected but is not found, the function word is stressed. Our prediction is thus borne out: the stress on *es*, *dat* and *ic* in (26) prevents these words from becoming a clitics and causes the function words to become full prosodic words.

(26) Stressed function words

L329 Dat '**es** die 'sorge 'die mi 'dert

L950	Want 'sent dat 'hi in '**dat** be'dwanc
S15550	Dat **'ic** v*er*'gelde 'dese 'scout
M3801	Van 'viant'scapen **'dat** be'gin

Thus, weak function words as phonological clitics can attach leftwards to lexical words or function words, provided the preceding element is accented. This is the case when the preceding element is a monosyllabic phonological word (consisting of either a lexical or a stressed function word), or has become one through apocope of a weak final syllable, or when the last syllable of the preceding polysyllabic word is heavy.

Finally, we turn to proclicisation. Based on normal speech, we would expect procliticisation to occur in situations where encliticisation is not possible. We summarise the following contexts:

(27a) PROCLITICISATION

(i) sentence initially the function word often reduces to a single consonant

(ii) Sentence medially, a sequence of two unstressed function words, where the first metrically groups with the preceding prosodic word and the second is procliticised

(iii) Sentence medially, a function word becomes a proclitic when it is preceded by a polysyllabic word ending in an unstressed syllable.

(b) More abstractly:

(i) $\#\# \sigma_{FN}\ \omega > (\sigma_{FN} = \omega)_{\omega}$

(ii) $\omega\ \sigma_{FN}\ \sigma_{FN}\ \omega > (\omega = \sigma)_{\omega}\ (\sigma_{FN} = '\omega)_{\omega}$

(iii) $\omega_{('\sigma\ \sigma)}\ \sigma_{FN}\ \omega > \omega_{('\sigma\ \sigma)}\ (\sigma_{FN} = '\omega)_{\omega}$

We discuss each in turn.

Sentence initial function words can only attach to the following prosodic word. It may look as if the attachment to the right is triggered by the phonological shape of the following word such as a word that begins with a vowel as in (28i) but the examples in (28ii) show that this cannot be the case and the following word may begin with a consonant (28ii). In either case, the function word is reduced to a consonant.

(28i) Sentence initial function words *:* $\#\# \sigma_{FN}\ \omega > (\sigma_{FN} = \omega)_{\omega}$

(i) Before vowels

L367	**Tabdessen** noch te priorinnen	*te abdessen > tabdesssen*
L404	**Tambachte** wert de wederval	*te ambachte > tambachte*
S15688	**Dander** es laet v gherade*n*	*dat ander > dander*
M3191	**Dierste** es om tghelou<u>e</u> te sterken	*dat ierste > dierste*

(ii) *Before consonants*

M3797	**Dbeghin** van vrienscapen es	*dat beghin > dbeghin*
S15704	**Tfierde** poent makic v mare	*dat vierde > tfierde*

However, procliticisation also occurs sentence medially, but under very restricted conditions. In such instances, as we see in the examples in (29), the preceding element is always an enclitic (*ge'schide=oc, 'hir=nu, 'gode=es, 'waert=al, 'de=and(e)r=om, 'bat=si, 'wilde=ghi*) and therefore unstressed. This causes the unstressed function word to procliticise to the following prosodic word. That is, when an unstressed function word is itself preceded by an element which is not a prosodic word, it cannot encliticise and inevitably procliticises to a following strong element.

(29) Preceding element is weak: $\omega\ \ \sigma_{FN}\ \sigma_{FN}\ '\sigma\ >\ \ ('\sigma = \sigma_{FN})_{\omega}\ \ (\sigma_{FN} = '\sigma)_{\omega}$

L11494	Aldus geschide oc **teenen** tide Al 'dus ge'schide=oc 't=eenen 'tide	*oc te eenen > oc teenen* 'also at one'
L11099	Din gi mi hir nu **teeren** daedt Din 'gi mi 'hir=nu 't=eeren 'daedt	*nu te eeren > nu teeren* 'now to honour'
L812	Aldus so bat si **tonsen** Here Al'dus so 'bat=si 't=onsen 'Here	*tot onsen > tonsen* 'to our'
S 15696	Gode es **terde** poent bequ*a*me 'Gode=es 't=erde 'poent be'qu*a*me	*es dat derde > es terde* 'is the third'
M767	Dat hi waert al **tenen** gader 'Dat hi 'waert=al 't=enen 'gader	*al te enen > al tenen* 'to one'
M3192	Dander om **trecht** der heyligher kerken 'De=and(e)r=om 't=recht der 'heyligher 'kerken	*om dat recht > om trecht* 'the right'
M3658	Wil<u>di</u> **tuwen** scanden keren 'Wilde=ghi 't=uwen 'scanden 'keren	*tot uwen > tuwen* 'to your'

Finally, in a few cases the preceding polysyllabic word ends in an unstressed syllable, which is not an enclitic (*'maget, ho'uerdech*). Again, the function word cannot encliticise to a preceding unstressed element.

(30) Polysyllabic head: $\omega_{('\sigma\,\sigma)}\ \sigma_{FN}\ \omega > \omega_{('\sigma\,\sigma)}\ (\sigma_{FN}= '\omega)_{\omega}$

L10881	Der maget **teeren** lit geschin	*te eeren > teeren*	'to honour'
	Der 'maget 'te=eeren 'lit ge'schin		
S15659	In gheenre wijs hou*er*dech **tsine**	*te sine > tsine*	'to be'
	In 'gheenre 'wijs ho'u*er*dech 'te=sine		

Again like encliticisation, procliticisation due to prosodic grouping need not be reflected in orthography. For instance, in order to fit into the metre, *e* as in *te (makene)* is dropped in metre and *te* becomes a proclitic.

(31) Procliticisation in metre, not in orthography:

M3234	**Te settene** in haer stede	*te settene*	'to put'
	Te='settene 'in haer 'stede		
M3062	**Te meerderen** cost dats sijn recht	*te meerderen*	'to more'
	Te='meerderen 'cost 'dats sijn 'recht		
M3198	**Te scuwene in** alle tide	*te scuwene*	'to avoid'
	Te='scuwen(e)=in 'alle 'tide		
M3825	**Te half** aprille min no mee	*te half*	'at half'
	Te='half a'prille 'min no 'mee		
S1724	V bedde **te makene** in gods t*r*one	*te makene*	'to make'
	V 'bedde te='mak(e)ne 'in gods 't*r*one		

Are there any constraints on which specific function words could be proclitics? A closer examination of function words shows that only the determiners *dat* and *de* and the prepositions *te* and *tot* occur as proclitics in our texts. In contrast, the number of different function words that may encliticise is far greater than the number found as proclitics. Also, enclitics include more word categories, i.e. all personal pronouns, determiners (*dat, der, des, den, dier, desen*), the negation particle *'en'*, the adverb *daer*, the verb *es* 'is' and the preposition *inne.* The great variety of possible enclitics versus the handful of possible proclitics suggests that encliticisation is in much wider use than procliticisation. We took 2000 lines each from Lutgart and Mellibeus and all of Saladijn and considered the function words which cliticise.

(32) *Statistics of function words that may cliticise*

	Enclitics	Proclitics
Lutgart 2000 lines	48	10
	personal pronouns, adverb (*daer),* determiners (*dat, der, des, den, dier, desen*)	determiners *(dat, de)* prepositions (*te, tot)*
Saladijn 300 lines	54	16
	personal pronouns, determiners (*der, den, dat, des),* negation particle (*en)*	determiners (*dat, de*) preposition (*te*)
Mellibeus 2000 lines	105	37
	personal pronouns, determiners (*der, den, dat, des*) verb (*es),* adverb (*daer),* negation particle '*en'* preposition (*inne*)	determiners (*dat, de*) preposition (*te*)

Clearly, all authors show a stronger preference for encliticisation rather than procliticisation across the board, regardless of trochaic or iambic rhythm.

6. CONCLUDING REMARKS

We examined 14th century Dutch trochaic and iambic verse to investigate the interaction of prosodic grouping and a propensity to cliticisation. As always in written manuscripts, orthographic contractions are fairly frequent, particularly orthographic sequences of function words although lexical-plus-function words are also possible. We asked whether orthographic sequences went hand in hand with metrical grouping and found that it was not the case. Just as word boundaries are not sacrosanct and do not follow metrical grouping (e.g. 21, 22), orthographic sequences of two function words or lexical and function word can also be divided across feet. But, even if orthographic contractions could be split across feet, such contractions could be a case of cliticisation since the encliticised function word

is weak and thus unstressed: *Warumme **laetti** dan, Lutgart:* (Wa ˈrumm) (e ˈ**laet) (ti** ˈdan) (Lutˈgart); *laet ghi > laetti*. Nevertheless, the orthographic contraction need not always reflect cliticisation. We asked, to what extent do the poets prefer to maintain the patternˈFN=FN with prominence on the first function word as would be normal for encliticisation? The answer is that despite contraction, poets do allow the second function word to be stressed and be the head of a foot which shows that it cannot be a clitic (16b); *Want dadic nu uwen raet:* (ˈWant da)(ˈdic nv) (ˈuwen) (ˈraet). Thus, metrical grouping shows that contractions are not always confined to one foot, either in iambic or in trochaic metre. However, only in trochaic metre, when host-plus-clitic is within a single foot, do orthographic contractions and expected cliticisation pattern coincide. Furthermore, prosodic encliticisation of function words (usually with elision) is entirely feasible without orthographic contraction such as in *worme dat* grouped in one foot after the elision of word final <e> (cf. 25, M240). We concluded that orthographic contractions are not always a reliable predictor of cliticisation.

Finally, that encliticisation is clearly the norm is evident from the wide variety of word categories that can be hosts as well as the variety of word types that can be enclitics (31). If there is a likely prosodic word (preferably stressed monosyllabic word), enclitics are the norm. Equally so, if a function word is accented (or takes a full beat) and is treated as a prosodic word, a following weak element will encliticise. Furthermore, a disyllabic prosodic word that ends in a deletable light syllable, can also host a clitic and a polysyllabic word with stress on the last syllable can have an enclitic attached to it. Stress is the main factor: encliticisation of a weak function word occurs only when the preceding element is stressed and is thus a prosodic word. This is true in both iambic (*Lutgart* and *Saladijn*) and trochaic (*Mellibeus*) systems.

Procliticisation is largely evident when there are no preceding suitable prosodic words to attach to — sentence initially, and if the preceding syllable is light. The relatively small number of function words found in our texts that do procliticise, confirm that procliticisation is not the preferred option. Procliticisation occurs when the normal option is unavailable. Thus, procliticised sequences such as *twaren, tleven* from *te waren, te leven* are possible only if *te* cannot be attached to a preceding element. The rule is, thus, encliticise if possible, otherwise procliticise. Thus, even in verse, the encliticisation preference we see in Germanic, historically and synchronically, holds true in Middle Dutch verse. Our findings regarding the preference for encliticisation are the same in iambic and trochaic texts which leads to the conclusion that not the metre of the text but the trochaic nature of Dutch word formation is decisive.

Thus, Middle Dutch verse shows a strong preference for encliticisation as reflected in the manuscripts we investigated. The metrical and syntactic grouping in our Middle Dutch texts are not isomorphic, as reported in normal speech by earlier linguists like Steele and Sweet in the 18th and 19th centuries. Encliticisation is preferred, while procliticisation only occurs if encliticisation is blocked, sentence initially and in the case when the preceding element is unstressed, irrespective of whether the element is an unstressed function word or an unstressed syllable in a polysyllabic word. What is most interesting is that a careful examination of the texts indicates that orthographic contractions need not always reflect phonological cliticisations and that the absence of orthographic contraction does not necessarily reflect absence of cliticisation.

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