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Adverbs of degree in Early Middle Dutch¹

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Abstract

Adverbs of degree are prone to undergo change, and new adverbs frequently emerge through grammaticalisation. These adverbs tend to adhere to various syntactic and semantic restrictions that govern their usage depending on their degree of grammaticalisation (Klein 1998). During the grammaticalisation process, they first tend to expand in function and then become more specialised (Bolinger 1972, Klein 1998). This article provides documentation for the usage of the different adverbs of degree in Early Middle Dutch, and draws comparisons with Modern Dutch in order to shed light on the changes that led to the present situation. Using data from the *Corpus Gysseling* (2013), the present study focuses on eight adverbs. These include adverbs of high degree (*harde, vele, sere, grotelike, utermaten*), low degree (*een deel, iewet*), a negative polarity item (*buere*) and a modifier of comparatives. Some of these are still around in Modern Dutch, but with differences in distribution (*veel*) or in register (*zeer*), while others have disappeared (*een deel*). We present evidence that distributional patterns may be preserved even when the adverbs themselves are replaced by other expressions. We also found that the high degree adverbs show greater distinctions than those of low degree.

Keywords: intensification, historical linguistics, corpus linguistics, semantics, grammaticalisation

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1. Introduction²

Adverbs of degree³ are important elements in the lexicon of most (perhaps all) languages. Over the years, various monographs have documented the usage of the different adverbs of degree in modern Germanic languages. Klein (1998) described them for Dutch, Van Os (1988) for German, and Bolinger (1972) for English. These works present numerous, sometimes fairly intricate, restrictions on the combinatorial possibilities of these adverbs. By contrast, there is far less information on the distribution of adverbs of degree in earlier stages of these languages, with English being the main exception (e.g. Ito & Tagliamonte 2003, Lorenz 2002, Méndez-Naya 2003, Peters 1994). What we do know already is that adverbs of degree are highly prone to change. Their distribution may change, and new adverbs of degree emerge through grammaticalisation (Bolinger 1972, Klein 1998, Peters 1994). What we would like to know is how the present situation, with its rich variety of adverbs and their complex patterns of combination, has arisen historically. Currently, no study exists that investigates the usage of these adverbs for the Middle Dutch period, which is what the present study will seek to rectify. The results could therefore help contextualise the situation in Modern Dutch. This study is part of a larger project on adverbs of degree in the oldest and medieval stages of the West Germanic languages, and considers variation from the twin perspectives of external factors (mainly dialect differences) and internal factors, such as the categories the adverbs combine with.

This study is structured as follows: section 2 establishes the aim of the study and discusses background literature that is relevant to answer its research questions. Section 3 gives a description of the corpora and the research method used. Section 4 describes the Middle Dutch adverbs of degree in detail, and compares adverbs of the same degree. Section 5 discusses the results based on the background literature and provides an overview of the various developmental trajectories for the different adverbs. Finally, section 6 summarises the major findings and provides future prospects.

² This paper is in part based on Visser (2019).

³ This paper uses the term *adverb of degree*. Other studies may use *intensifier* as the general term (Bolinger 1972), although this term is also sometimes used only to refer to those that reinforce the modified phrase, such as *very* (i.e. Méndez-Naya 2003).

2. Aim and background

The present study seeks to provide a systematic documentation for eight different Early Middle Dutch adverbs of degree. The aim is to find out which syntactic and semantic restrictions applied, whether there is dialectal variation in their usage, and whether there is variation between writers if this information is available. This documentation will subsequently be compared to the situation in later periods of Dutch to investigate to what extent the expected developmental patterns applied and how potential discrepancies can be accounted for.

Middle Dutch had far fewer adverbs of degree than Modern Dutch. We expect to find greater distinctions among Middle Dutch adverbs of degree, partly because of this relative paucity, and partly for other reasons. Middle Dutch had a short writing tradition, and few were able to read and write, so it is likely that there was not yet a clear division between written and spoken language.

What we do expect is dialect variation, as there was no standard Dutch in medieval times (Van der Horst 2008b). It will therefore be interesting to investigate if the adverbs of degree display patterns of regional variation in Middle Dutch.

Finally, we expect areas of stability. Variation studies do not only pinpoint areas of variation and change, but often also long-term stability. For instance, English *g*-dropping involves variation between *-in* and *-ing*, as in *workin'* versus *working*, and reflects an ancient difference between present participles in *-inde*, which are reduced to *-in*, and nominalizations in *-ing*. This distinction is still maintained in varieties of English around the globe, albeit in a statistical, not a categorical sense: verbal forms related to participles have more *-in* forms than gerunds, or nouns such as *ceiling* or *morning* (Houston 1985, Labov 1989). Hidden in the sociolinguistic variation is a distinction that has remained fairly stable across many centuries. In the distribution of degree adverbs, we hope to find more than random variation, perhaps some structural invariants.

2.1 The adverb of degree

Adverbs of degree come in many different variants and with various different functions, although they all indicate the degree to which a particular quality is present in the modified phrase (Méndez-Naya 2003). For example, a person can be very tall, extremely tall, somewhat tall, or not tall at all. To discuss these variants, we need a classification system. Various systems have been proposed over the years, but the most elaborate one is proposed by Klein

Table 1 The classification system for adverbs of degree adapted from Klein (1998: 20)

Class	Degree	Examples
I	Absolute	completely, absolutely
II	Approximate	almost, nearly
III	Extremely high	extremely, awfully
IV	High	very
V	Moderate	rather, pretty
VI	Minimal	somewhat, a bit
VII	Quasi-negative	little, hardly
VIII	Negative	not, not a bit

(1998), which itself is an adaptation of the system proposed by Van Os (1988) for German, and is shown in Table 1.

Adverbs of absolute degree are usually associated with endpoints of a scale. Not all scales have endpoints. In the literature (Paradis 2001, Kennedy & McNally 2005), a distinction is made between open scales (such as the scale associated with the adjective *beautiful* and its antonym *ugly*) which have no clear endpoints, closed scales that do have endpoints (such as the scale associated with the antonym pair *open-closed*) and half-open scales (such as the scale for speed). A vehicle standing still has the absolute minimum speed. There is no maximum speed (if we ignore legal speed limits, and Einstein's relativity theory, both of which are irrelevant for our everyday understanding of *fast*). So we have an endpoint on the lower end of the scale, but none on the other side. Now compare example (1a) and (1b).

- (1) a. The car stood completely still.
 b. *The car drove completely fast.

Adjectives not associated with scalar endpoints tend to combine with high degree modifiers, but not with absolute modifiers.⁴ Paradis (2001) classifies adverbs of absolute degree along with those of approximate degree as totality modifiers, based on their ability to modify closed-scale adjectives, and the remaining classes as scalar modifiers, because they require open-scale adjectives.

Adverbs of high degree push the threshold associated with an adjective higher (i.e. if *tall* requires a person to be over 180 cm, then *very tall* requires a

4 But see Tribushinina & Janssen (2011) and Hoeksema (2011b) for some complications with this perspective. Endpoints and scales are not always a simple matter.

threshold well above 180 cm). Adverbs of extremely high degree are similar, but they do this to a greater extent and tend to have a stronger emotive value (Klein 1998). Adverbs of moderate degree take a middle ground: *rather tall* excludes *small* as well as *very tall*. On the other hand, adverbs of minimal degree are used to indicate that a particular quality is present, but they lower the threshold, while those of quasi-negative degree also downscale, but the quality is present to a lesser degree than expected (Klein 1998). Absolute and negative modifiers will be ignored here for the most part.

2.2 Grammaticalisation patterns

In order to study how the situation regarding adverbs of degree in Modern Dutch developed from Middle Dutch onwards, it is necessary to discuss how adverbs of degree tend to change over time, as they typically develop according to a specific grammaticalisation pattern. As is common in grammaticalisation, lexical words tend to lose their original morphological and syntactic properties and adopt those of a more functional category (Hopper & Traugott 2003: 107), and the morphosyntactic contexts in which they can be used are gradually expanded (Hopper & Traugott 2003: 104). The original lexical meaning will still be present initially, although this meaning will gradually be eroded over time leaving only a purely functional usage, although not every adverb will have reached this stage (Klein 1998). This process is known as *semantic bleaching*. For example, *very* has completely lost its original meaning of ‘truly’ or ‘truthfully’, which indicates a complete delexicalization (Lorenz 2002), while an adverb like *absolutely* still has a lexical meaning. Bolinger (1972: 22) refers to these two different types as *grammaticalized* and *ungrammaticalized* respectively. However, this should not be viewed as a hard distinction, as different adverbs can show different degrees of grammaticalisation (Bolinger 1972: 22). A process seemingly opposite to the one described above also applies: after the initial expansion of context, the usage of adverbs of degree tends to become increasingly more restricted, and they tend to acquire a specialised usage (Klein 1998), or, as Bolinger poetically describes it, ‘[t]he old favorites do not vanish but retreat to islands bounded by restrictions’ (Bolinger 1972: 18).

It is commonly argued that adverbs of high degree tend to lose their emotive power and expressivity as they become more frequent in discourse (Klein 1998, Lorenz 2002, Méndez-Naya 2003). Over time, adverbs of degree as a class tend to undergo a process known as *renewal* (Hopper & Traugott 2003: 122), which means that, as a particular adverb becomes more frequent, it will lose its expressivity, and another word will take its place as a more expressive adverb (Klein 1998, Lorenz 2002, Méndez-Naya 2003, Hopper &

Traugott 2003: 122). Hopper and Traugott (2003) argue that this is precisely because of their strong emotive value, and that adverbs of high degree are therefore particularly prone to undergo renewal. However, Ten Buuren et al. (2018) found that perceived novelty plays a greater role than frequency, as adverbs of extremely high degree that were seen as both highly frequent and modern were rated the highest in intensity by their participants. It is therefore likely that it is not high frequency that causes an adverb of degree to lose its intensity but perceived old-fashionedness (Ten Buuren et al. 2018). The connection between expressivity and novelty is also noted by Lorenz (2002).

While it is certainly true at the moment that adverbs of high degree are constantly entering the language and disappearing from it, this has not always been the case. For example, Hoeksema (2011a) notes that the number of adverbs of degree in the Middle Dutch period was fairly stable and that it only began increasing in the Early Modern period. It is also noteworthy that this increase was greater for adverbs of high degree than for those of minimal degree (Hoeksema 2005). Similar observations have been made for English (Stoffel 1901) and German (Van Os 1988)⁵. This increase is remarkable, as it apparently violates the principle that languages have a tendency towards one-to-one relationships between form and meaning (Hoeksema 2005), which is known as *Humboldt's principle* (Koefoed 1978), as many different adverbs of degree overlap in meaning and usage. However, there were fewer adverbs of high degree present in the medieval period, which could indicate that they were differentiated more clearly in their usage. In this context, the tendency for existing adverbs of degree to specialise in function could also be seen as a product of Humboldt's principle. To study the grammaticalisation of adverbs of degree, different kinds of restrictions and specialisations will be outlined below.

2.3 Syntactic and semantic restrictions on usage

The distribution of adverbs of degree tends to be governed by syntactic rules, often depending on the degree to which they are grammaticalised. As would be expected based on the grammaticalisation patterns outlined in section 2.2, the most grammaticalised adverbs of degree have their own set of specific restrictions (Klein 1998). For example, the Dutch functional

5 The observation by Hoeksema (2005) is primarily based on raw counts. A breakdown per genre and register is still missing. As for the reason for this increase, Hoeksema (2011a) notes that this is difficult to establish, although he links it to an increase in literacy during the Early Modern period.

adverb of high degree *heel* almost exclusively modifies adjectives and adverbs, whereas other adverbs of high degree like *erg*, *heel erg*, and *zeer* can modify verbs as well (Hoeksema 2005, Klein 1998). The one exception for *heel* is that it is also capable of modifying a small and well-circumscribed set of prepositional phrases (PPs) containing a de-adjectival derived noun (Hoeksema & Kortering 2011). Examples (2a) and (2b) from Klein (1998: 13) illustrate the difference between *erg* and *heel* when it comes to modifying verbs, while (2c) and (2d) from Hoeksema & Kortering (2011: 30) highlight the difference for PPs.

- (2) a. Ik waardeer het erg
 I appreciate it badly
 'I appreciate it very much'
- b. *Ik waardeer het heel
 *I appreciate it very
- c. Heel in de verte zie ik een bekende
 very in the distance see I a familiar
 'I see a familiar person very far in the distance'
- d. Jan is erg/*heel in de war
 John is badly/*very confused

The above differences between *heel* and *erg* are similar, although not identical, to those of English *very* and *much*, respectively (Klein 1998). In general, PPs can be modified by adverbs of degree when they are used as a predicate and when they can be scaled (Klein 1998). Non-scalar PPs are never modified by adverbs of degree, just as in English, which is illustrated in example (3).

- (3) Jones was very much at risk / *in Spain

The difference between positive and comparative degree is likewise a relevant factor, as the Dutch adverb of high degree *veel* 'much, many' can modify comparatives, while *erg* and *heel* cannot be used in this context (Hoeksema 2011a), as is shown in example (4a). However, *veel* has another usage, as it can also be used with *te* 'too' (Hoeksema 2011a), and *erg* and *heel* cannot be used in this construction, as can be seen in example (4b).

- (4) a. Het is veel/*heel/*erg beter
 it is much/*very/*badly better
- b. Het is veel/*heel/*erg te groot
 it is much/*very/*badly too large

Veel cannot be used in other contexts, which suggest that it is highly grammaticalised. By contrast, adverbs of minimal degree like *een beetje*, *ietwat*, *een tikje*, *enigszins* ‘a little bit, somewhat’ can modify both the positive and the comparative without any issues in Dutch (Hoeksema 2011a).

It has long been established that syntactic conditions alone cannot fully capture the distribution of adverbs of degree in English (Bolinger 1972), and therefore a description of the various semantic conditions will be necessary. One such condition is sensitivity to polarity, which includes both *inherent polarity* and the *polarity of the environment* (Klein 1998). Sensitivity to the former means that certain adverbs of degree can only modify words that are either positive or negative (Klein 1998). This distinction between positive and negative adjectives includes not only morphological antonym pairs like *happy* – *unhappy* (Klein 1998: 71), but also scalable lexical adjective pairs like *short* – *long* (Klein 1998: 71), for which the one closest to zero is considered the negative variant (Klein 1998). In both cases, the positive variant is semantically unmarked, while the negative one is marked (Klein 1998). For other types of adjectives, the negative variant indicates the absence of a property, while the positive one indicates its presence (Klein 1998). An example of such a pair is *living* – *dead* (i.e. the presence or absence of life), and this is known as *natural polarity* (Klein 1998: 72). Another type is *evaluative polarity* (Klein 1998: 72), which often takes precedence, and it considers words of praise to be positive and words of criticism to be negative. Therefore, a word like *clean* would be considered positive, despite indicating an absence of dirt (Klein 1998). An example of an adverb that is sensitive to inherent polarity is the Dutch adverb of moderate degree *knap* ‘pretty’, which is used overwhelmingly with negative words, with *knap lastig* ‘pretty troublesome’ being the most common phrase (Klein 1998). Klein (1998) hypothesises that the sensitivity of adverbs of degree to inherent polarity is caused by the original lexical meaning of the adverb, although in what way this affects its distribution remains unclear.

A number of adverbs of degree show sensitivity to the polarity of the environment. This means that certain ones can only be used in negative-polarity contexts⁶, while others are restricted to positive-polarity contexts

6 Much can be said about the exact definition of negative polarity items (see Klein 1998), but it most commonly describes a phrase within the scope of negation. Other environments that permit negative polarity items are questions, comparative clauses, conditional clauses, and clauses introduced by *before*, although this list is by no means exhaustive (Klein 1998) and may vary from item to item (Van der Wouden 1997, Zwarts 1998).

(Klein 1998). English *somewhat* is a positive polarity item, whereas *the least bit* is a negative polarity item.

- (5) a. John is somewhat happy
 b. *John is not somewhat happy
 c. *Bill is the least bit happy
 d. Bill is not the least bit happy

The above examples are indicative of a categorical rejection of negation, or its opposite, a categorical requirement that the item is in a negative context.

2.4 Middle Dutch

The syntactic and semantic restrictions that apply to the different adverbs of degree in Early Middle Dutch have not yet been studied. Before discussing what is known about the different adverbs of degree, it is useful to first provide an overview of the language situation in this period. In this context, Early Middle Dutch refers to the thirteenth century, which marks the beginning of Dutch vernacular literature (De Vaan 2017: 12). Texts from before this period are considered Old Dutch, although these are restricted to smaller texts and fragments and are small in number (De Vaan 2017: 9-12). The Dutch language area in this period was both politically and linguistically fragmented, and thus Middle Dutch refers to a collection of dialects rather than a unified language (Marynissen & Janssens 2012). These dialects are distinguished from High German based on the absence of the High German consonant shift and from Low German by preserving distinct verbal endings in the plural, while Low German has merged them into a single ending (Marynissen & Janssens 2012: 85)⁷.

In Middle Dutch, as well as in other older Germanic languages, two types of adverbs can be distinguished: monomorphemic ones and those derived from other categories (Fulk 2018). The most common way in which adverbs could be derived from adjectives in the older Germanic languages is by using the adverbial suffix derived from Proto-Germanic **-ē ~ *-ō*⁸ (Fulk 2018: 238). This suffix was still reflected as *-o* in the Old Dutch period, but by Middle Dutch it had been reduced to a schwa or

7 Both distinctions are somewhat imperfect, as some Limburgian dialects display a partial High German consonant shift (Van Bree 1996: 235, Marynissen & Janssens 2012), and north-eastern dialects of Middle Dutch are difficult to distinguish from Middle Low German (Marynissen & Janssens 2012).

8 For a discussion on the form and origin of this suffix, see Fulk (2018: 238-239).

Table 2 The different adverbs of degree in Middle Dutch that are included in the analysis grouped by their respective degree

Degree	Adverbs
High	harde, sere, vele
Extremely high	grotelike, utermaten
Minimal and quasi-negative	een deel, buere, iewet

dropped completely in other cases (Van Loey 1970: 240). This is illustrated by the Middle Dutch adverb of high degree *harde*, which was still written as *hardo* in the Old Dutch *Wachtendonk Psalter* (10th century) and the *Leiden Willeram* (around 1100). A consequence of this reduction is that the distinction between adverbs and adjectives has become less clear (Stoett 1977: 76).

The Early Middle Dutch adverbs of degree that were included in this study are listed in Table 2. *Harde* and *vele* were chosen because they display strong specialisation in Modern Dutch (see section 5.1 for details), which could help illustrate the grammaticalisation patterns mentioned above. These can be contrasted with *sere*, which is still commonly used. Of the adverbs of extremely high degree, *grotelike* ‘greatly’ is obsolete, but still occasionally used in the modern form *grotelijks*, and *utermaten* ‘out of bounds, extraordinary’ is now *uitermate*, an expression typical of the higher (more formal) registers of written Dutch. The adverbs of minimal and quasi-negative degree show a similar variety, as *een deel* ‘a part, partially’ is no longer used, *iewet* ‘somewhat’ is still used albeit in a different formation (see section 2.5), which will also allow for a comparison. *Buere* ‘not very’⁹ is also no longer in use in Modern Dutch, but it was already restricted in Middle Dutch, being a negative polarity item (Hoeksema 2011a). However, the *Vroeg-Middelnedderlands Woordenboek – VMNW* (2015 s.v. *buere*) notes that *buere* was also sometimes used in a context without negation, and, in these cases, it effectively functioned as an adverb of quasi-negative degree¹⁰. When *harde* modified *naer* ‘near’, it functioned more like an adverb of approximate degree (VMNW 2015 s.v. *naer*).

9 Cf. Old High German *bora-* ‘not very’, Old Saxon *bar-* ‘id.’. Both are negative polarity items.

10 *Buere* therefore exhibits part of the Jespersen Cycle which commonly involves negative expressions developing out of negative polarity items, e.g. French *pas* ‘not’ from older ‘(not) a step’ (Jespersen 1917, Van der Auwera 2009, Hoeksema 2009).

2.5 The modern situation

For comparison, the usage of the adverbs of degree listed above in Modern Dutch will be discussed. As stated above in section 2.4, *iewet* is no longer used in this form, although it still serves as an adverb of minimal degree in the form *iets*, which derived from *iewet* + *-s*, the partitive genitive ending (Philippa et al. 2009 s.v. *iets*), and it is restricted to modifying comparatives and *te* (WNT 2015 s.v. *iets*). Another formation that is still used is *ietwat*, from *iewet* + *wat*, which can also be used with the positive (WNT 2015 s.v. *ietwat*). Examples for both adverbs are given in (6).

- | | | | | | | |
|-----|----|-----|----|--------------|--------|------|
| (6) | a. | het | is | *iets/ietwat | lang | |
| | | it | is | somewhat | long | |
| | b. | het | is | iets/ietwat | langer | |
| | | it | is | somewhat | longer | |
| | c. | het | is | iets/ietwat | te | lang |
| | | it | is | somewhat | too | long |

Sere is also still used as an adverb of high degree in the form *zeer*, as discussed earlier in section 2.3, but it is generally less frequent than *erg* and *heel* in spoken Dutch, as both alternatives are more than ten times as common in the CGN, the corpus of spoken Dutch (Oostdijk 2000), and it is considered to be a part of a more formal register (Hoeksema & Korterink 2011). For instance, in spontaneous face-to-face conversations and spontaneous telephone conversations, the PaQu website (Odijk et al. 2017) lists a frequency of between 1 and 2 per 1,000 words (compare: 20 per 1000 words for *heel*, and 26 for *erg* in spontaneous face-to-face talk), while political debates score much higher for *zeer*: about 14 per 1,000 words.

As mentioned in section 2.3, *vele* (now *veel*) is also still in use, although its usage is restricted, and its usage as an adverb of degree is sometimes difficult to distinguish from its usage as an adverb of frequency (Klein 1998). Finally, *uitermaten* is still used as a general-purpose adverb of extremely high degree in the form *uitermate*, and it can be used to modify adjectives, adverbs, and verbs (WNT 2015 s.v. *uitermate*), as is shown in example (7).

- | | | | | | | |
|-----|----|-------|--------|-------------|-------------|--------------|
| (7) | a. | het | was | uitermate | goed | |
| | | it | was | exceedingly | good | |
| | b. | Marie | werkte | uitermate | hard | |
| | | Mary | worked | exceedingly | hard | |
| | c. | het | zal | mij | uitermate | benieuwen |
| | | it | will | me | exceedingly | make curious |
- ‘It will make me exceedingly curious.’

As is shown in the various examples above (2, 4, 6, 7), all adverbs of degree tend to directly precede the modified phrase in Modern Dutch, but in Middle Dutch they are often found directly following it (Van der Horst 2008a: 562). However, whether there are differences in position between the different adverbs has not yet been studied.

Table 3 The number of texts and tokens per dialect in the *Corpus Gysseling* (2013) ordered by the number of tokens

Dialect	Literary texts	Other texts	Tokens
Flemish	7	1520	950,425
Brabantian	9	218	308,729
Hollandic	1	385	131,121
Limburgian	2	11	96,256
Rhinelandic	7	6	43,668
Zealandic	0	39	12,983
Utrechtish	0	31	9,131
North-eastern dialects	0	4	673

3. Method

3.1 Materials

The corpus that was used for the analysis was the *Corpus Gysseling* (2013), which contains Middle Dutch texts from before 1300, and it forms the basis for the VMNW (2015). The corpus includes both literary texts as well as charters, and it contains approximately 1.5 million tokens in total. A list of dialects (i.e. text regions) in Middle Dutch along with the number of texts and tokens found in the corpus is shown in Table 3¹¹. Statistics were carried out in R (R Core Team 2017) using the *polytomous* (Arppe 2013) and *rms* (Harrell 2018) packages.

3.2 Procedure

The *Corpus Gysseling* (2013) was searched for the various adverbs of degree as laid out in section 2.4. For each instance of an adverb, both the word itself and the phrase it modified were recorded in their original attested forms, as well as a normalised form based on the lemma found in VMNW (2015) to account for orthographical variation. Whenever there was any doubt about the lexical

¹¹ VMNW (2015) further divides Flemish into west and east, Brabantian into west, east, and north, and Hollandic into west and east. Due to the relatively small number of attestations, we ignored these additional distinctions.

category of the potential adverb or the modified phrase, the corpus annotations were relied on. For context, the full phrase in which the adverb was found was also included in the database. The degree of the adverb was also recorded following the conventions shown in Table 1 based on VMNW (2015), as well as the lexical category of the modified word or phrase. It was also annotated whether or not the sentence is negated and whether the modified phrase is inherently positive or negative based on the criteria outlined in section 2.3 (i.e. lexical antonym pairs, natural polarity, and evaluative polarity). The text in which the sentence or clause is attested, its dialect, and the year in which it was written were also included in the database, as well as the writer of the text, if this information was available. In total, 1,694 entries were recorded in the database. There were no attestations from Zealandic or the north-eastern dialects, so these dialects were not taken into consideration. There was one attestation from Utrechtish, and this was treated as Hollandic, as these two areas were linguistically connected (Van Loey 1970: XLI).

3.3 Analysis

The database was then loaded into R in order to perform various statistical analyses. In this analysis, the choice of adverb was the dependent variable, and the independent variables are listed in Table 4. Additionally, the writer of the text in which the adverb is attested was taken into consideration, as well as register (literary vs non-literary). For each adverb of degree, a list of modified phrases was obtained along with the frequency of each pair (i.e. the frequency of the adverb and the modified phrase occurring together), along with its *pointwise mutual information* (PMI) in order to evaluate the strength of the association. The PMI $I(x, y)$ is calculated using the formula below from Church and Hanks (1990: 23).

$$I(x, y) = \log_2 \frac{P(x, y)}{P(x)P(y)}$$

Here, $P(x, y)$ represents the joint probability of words x and y , while $P(x)$ and $P(y)$ represent their individual independent probabilities (Church & Hanks 1990). A PMI value greater than zero means that their co-occurrence is greater than chance, while a value below zero means that the probability of them occurring as a pair is below chance (Church & Hanks 1990). The individual probabilities are the observed frequencies of each of the two words normalised by the corpus size (Church & Hanks 1990). For this study, the joint probability was calculated based on the frequency of the adverb x modifying phrase y normalised by corpus size, rather than y simply following x as used by Church and Hanks, because the two did not always occur in

Table 4 The independent variables and their potential values

Variable	Values
Lexical category	positive adjective ¹² , comparative adjective, superlative adjective, <i>te</i> + adjective, adverb (general), comparative adverb, adverb of degree, verb, participle, prepositional phrase
Separation value	(numeric)
Polarity of the environment	positive, negative
Inherent polarity	positive, negative
Dialect	See Table 3

adjacent position. For individual words, the frequencies were taken from VMNW (2015). For PPs, the phrase was treated as one chunk, and therefore the frequency of the whole phrase was used. The mean separation along with the standard deviation (SD) was also provided, as suggested by Church and Hanks (if the mean separation is negative, *y* most often preceded *x*). This analysis was based on the *association ratio* (Church & Hanks 1990: 23).

Due to the fact that the corpus contains a large number of words with only a small number of attestations, only pairs with at least five attestations were included in the PMI tables. Otherwise, pairs with only a few attestations would have the highest PMI value, which is less meaningful. When counting the separation value, enclitic elements were treated as separate words. All of this was followed by a qualitative analysis of the modified phrases to see if patterns can be detected in the kind of words that were modified. Similarly, a list of the most commonly modified categories was obtained along with their frequencies. Furthermore, they were then analysed to see if certain adverbs have a preference for negative or positive contexts, both inherent and based on environment, based on frequencies. Finally, the usage of the adverb in question was then analysed for the different dialects, texts, and writers to see if certain constructions were restricted to or more frequent in particular dialects.

After having analysed the different adverbs of degree separately, the ones of the same degree were then compared and contrasted to find differences in their usage. When there were more than two adverbs to compare, a multinomial logistic regression model was fit using the 'one vs. rest' (Levs-hina 2015: 283) approach to investigate which of the language internal and external factors mentioned above significantly predict the choice of adverb of degree in Middle Dutch. When there were only two adverbs to compare and contrast, a binomial logistic regression model was employed instead.

12 Numerals were counted as adjectives.

Table 5 The distribution of categories for the adverbs of high degree

Adverb	Total	ADJ Pos	ADJ/ADV COMP/SUP	ADJ Too	ADV	ADV DEG	ADV Too	VERB	PTC	PP
Harde	423	202	0	0	136	65	0	11	7	2
Sere	783	208	0	1	57	38	1	360	101	18
Vele	144	40	34	4	36	12	11	6	1	0

4. Results

4.1 Adverbs of high degree

Table 5 shows the general usage of the adverbs of high degree, and these will be discussed individually below.

4.1.1 *Harde*

As shown above, *harde* most often modifies adjectives and other adverbs in Middle Dutch, although it can also modify verbs and participles. Broken down by text, it is revealed that all attestations of *harde* modifying participles are from a single text: *Sente Lutgart*, manuscript K, a Brabantian text dated to 1265 and written by Willem van Affligem. This text also contains ten out of thirteen attestations of *harde* modifying a verb. Examples in which *harde* appears to function as an adverb of manner (e.g. *harde groeyen* ‘to grow quickly’) are not included in this figure. Using Fisher’s exact test, it was found that the distribution of categories for this text differs significantly from the others ($p < .001$). Notably, *harde* also often modifies other adverbs of degree, such as *sere* (44 times), *sware* (9 times), *naer* (6 times)¹³, which functions as an adverb of approximate degree in this context (VMNW 2015 s.v. *naer*¹), *utermaten* (3 times), and *groot* (1 time). *Harde* has a preference for modifying positive words, which it did 322 times (75.89%). A list of words with the strongest association with *harde* ordered by PMI is shown in Table 6. While it is not strictly a positive polarity item, *harde* had a strong preference for positive sentences, as it occurred there 417 times (98.35%).

4.1.2 *Sere*

As is shown in Table 3, *sere* is the most frequently used adverb of high degree in the corpus. Instances in which it appears to have the meanings *quickly* (*sere lopen* ‘to walk quickly’), *hard* (*sere slaen* ‘to hit hard’), or *loudly* (*sere*

¹³ See Table 6 for translations.

Table 6 The ten words most commonly modified by *harde* with a pair frequency of at least five ordered by PMI, along with the frequency of the pair, the frequency of the word in the corpus, and mean separation value and SD

Word	Translation ¹⁴	Inherent polarity	Pair frequency	Word frequency	PMI	Separation
sware	heavily	Negative	9	47	9.45	0 (0)
naer	closely	Positive	6	32	9.42	0 (0)
blide	happy	Positive	13	208	7.83	0 (0)
schiere	quickly	Positive	8	148	7.62	0 (0)
leet	sorry	Negative	5	98	7.54	0 (0)
vro	happy	Positive	5	103	7.47	0 (0)
gherne	happily	Positive	16	336	7.44	0 (0)
sere	strongly	Positive	45	961	7.42	.02 (.15)
swaer	heavy	Negative	11	363	6.79	0 (0)
scone	pretty	Positive	9	413	6.31	0 (0)

spreken ‘to speak loudly’) were not included in the analysis. Notably, there are 18 instances in which *sere* modifies a PP, even though this usage is not listed by VMNW (2015 s.v. *sere*). Example (8) from the *Enaamse Codex*, a Flemish text by an unknown writer dated to 1290, illustrates this usage.

- (8) Dies was hi seere in bedwanghe
of that was he very much in anxiety
‘He was very much in anxiety because of that’.

In this context, the PP is used as a scalar predicate, and thus *sere* should be treated as modifying it (Klein 1998). Similarly, there was one instance in which *sere* modified a predicate noun phrase (specifically *ondanc* ‘dissatisfaction’), and this was treated as an adjective because it is an isolated example. When it comes to modifying other adverbs of degree, *sere* is exclusively attested modifying *utermaten*¹⁵. *Sere* is mainly used in Flemish, Brabantian, and Rhinelandic, it is attested six times in Hollandic, and it is attested only once in Limburgian in *Reinaert E*, which was not originally written in this dialect (VMNW 2015 *Reinaert E*). This could indicate that it may have been adopted from the exemplar rather than being a part of

14 All Early Middle Dutch translations are based on VMNW (2015). Adjectives and adverbs are listed separately (e.g. *swaer* is an adjective, and *sware* is an adverb).

15 These were treated as *sere* modifying *utermaten*, although it is ambiguous which one is the modifier in these instances. Both *sere utermaten* and *utermaten sere* are attested.

Table 7 The ten words most commonly modified by *sere* with a pair frequency of at least five ordered by PMI, along with the frequency of the pair, the frequency of the word in the corpus, and mean separation value and SD

Word	Translation	Inherent polarity	Pair frequency	Word frequency	PMI	Separation
verbelghen	to anger	Negative	6	11	10.07	.17 (2.64)
moeyen	to hinder	Negative	6	22	9.07	-.83 (.98)
versaghet	fearful	Negative	6	23	9.01	0 (1.26)
utermaten	exceedingly	Positive	38	172	8.77	-.32 (.81)
wonderen	to wonder	Positive	22	108	8.65	-1.50 (1.44)
bedroevet	sad	Negative	6	31	8.58	-.50 (.84)
gheselen	to punish	Negative	6	32	8.53	-1.50 (2.35)
wonderlike	remarkably	Positive	5	34	8.18	-.80 (.45)
danken	to thank	Positive	23	166	8.10	-1.43 (2.84)
verladen	to burden	Negative	12	103	7.85	.67 (2.27)

the scribe’s native dialect. A list of words most strongly associated with *sere* ordered by PMI is given in Table 7. The mean separation may be less meaningful in this case, as *sere* frequently appears in the rhyme position (often to rhyme with *here* ‘lord’). Notably, the three words with the strongest association are all negative words, although *sere* has no clear preference for the inherent positivity or negativity of the modified phrase overall, as it modifies positive ones 412 times (52.62%). However, it has a clear preference for positive environments, as it appears there 755 times (96.42%). The material provides no evidence that *sere* was restricted to a specific register, as it appears both in literary texts and in charters. In 17th and 18th century farces, *seer* shows up in dialogues, which suggests that at that time it was not yet restricted to formal written registers.

4.1.3 *Vele*

Some issues came up when analysing the adverb of high degree *vele*. Firstly when modifying verbs, it was not always possible to properly distinguish its usage as an adverb of degree from its usage as an adverb of frequency. Secondly when modifying *mere* with the meaning ‘more’, the adverbial usage of *vele* is not always distinguishable from its usage as an adjective indicating quantity. Only cases in which *vele* clearly functioned as an adverb of degree are included in the analysis and ambiguous cases are not. To settle ambiguities, the corpus annotation was generally relied upon. Therefore, these numbers may be overly conservative.

Table 8 The words modified by *vele* with a pair frequency of at least five ordered by PMI, along with the frequency of the pair, the frequency of the word in the corpus, and mean separation value and SD

Word	Translation	Inherent polarity	Pair frequency	Word frequency	PMI	Separation
mere	greater	Positive	6	91	9.47	-1.00 (1.10)
bat	better	Positive	16	337	9.00	.31 (.48)
beter	better	Positive	6	128	8.98	-.50 (.55)
sere	very	Positive	10	961	6.81	0 (0)
goet	good	Positive	6	2951	4.45	0 (0)
groot	large	Positive	6	3134	4.36	0 (0)

Vele is attested modifying adjectives and adverbs in the comparative, as well as a construction with *te*, just like in Modern Dutch. However, adjectives and adverbs in the positive still constitute the largest groups, which is different from Modern Dutch. Proportionally, *vele* most often modified comparative adjectives in Flemish, and this construction is relatively uncommon in the other dialects. A list of the words that are most strongly associated with *vele* is shown in Table 8, which highlights that it is most strongly associated with positive adjectives and adverbs and that it is strongly associated with variants of the word *goet* ‘good’. Most often, *vele* directly precedes the word that it modifies, but the one exception is in the Flemish text *Der Naturen Bloeme* manuscript D by Jacob van Maerlant, in which it most often follows it. This applies to adjectives (comparatives, superlatives, and a *te* construction) and verbs. In the fragmentary manuscript M of the same text, such a construction is attested once, and there it modifies the comparative adjective *mere* ‘greater’, which is in a line also found in D. The only other two attestations of *vele* in M are in lines that differ from D. In Van Maerlant’s *Rijmbijbel*, *vele* is attested after the modified phrase six times out of twenty, while this is rare in texts not attributed to him¹⁶, which means that it may have been part of his dialect. Like *harde* and *sere*, *vele* overwhelmingly has a preference for positive environments, as it appears there 139 times (96.53%). It also most often modifies positive words, as it does so 108 times (75.00%).

16 Outside of Jacob van Maerlant’s works, *vele* only follows the modified phrase five times: 1x in *Sente Servas* (Verb), 1x in *Nederrijns Moraalboek* (Positive adjective), 1x in *Sinte Kerstine* (Comparative adjective), 1x in *Sente Lutgart* (Comparative adjective), manuscript A (Comparative adjective), and 1x in *Aiol* (Participle).

Table 9 The log-odds and *p*-values for each adverb of high degree in Middle Dutch. Significant values are given in italics

	Harde		Vele		Sere	
	Log-odds	P-value	Log-odds	P-value	Log-odds	P-value
(Intercept)	-17.54	.981	19.47	0.987	-18.7	.977
Dialect: Flemish	-.17	.320	-.76	.008	.43	.013
Dialect: Hollandic	1.10	.098	1.03	0.132	-2.32	.004
Dialect: Limburgian	-.24	.652	2.19	< .001	-3.97	.004
Dialect: Rhinelandic	.28	.251	1.31	< .001	-1.37	< .001
Environment: Positive	-.10	.857	-.58	.385	.22	.678
Inherent: Positive	.40	.016	-.08	.761	-.39	.021
Phrase: Positive adjective	17.34	.981	-21.29	.986	18.41	.978
Phrase: Superlative adjective	.19	1.00	.49	1.00	.48	1.00
Phrase: Too + adjective	-.81	1.00	-17.08	.989	16.96	.979
Phrase: Adverb (general)	17.92	.98	-20.49	.986	17.40	.979
Phrase: Comparative adverb	-.50	1.00	-.89	1.00	1.98	.999
Phrase: Adverb of degree	17.57	.981	-20.87	.986	18.02	.978
Phrase: Too + adverb	-1.04	.999	.09	1.00	1.90	.999
Phrase: PP	15.07	.983	-37.61	.984	21.11	.974
Phrase: Participle	13.85	.985	-23.51	.984	21.9	.973
Phrase: Verb	14.05	.985	-23.17	.985	21.84	.973
Separation	.82	< .001	-.07	.629	-.71	< .001

4.1.4 Comparison

To assess which of the variables listed in Table 4 significantly predict the choice of the adverb of high degree in Early Middle Dutch, a multinomial logistic regression model was fit¹⁷. This model had a McFadden's R^2 value of .40, which indicates a very good fit (Levshina 2015: 280), and an overall prediction accuracy of 74.93%. The log-odds and *p*-values for this model are shown in Table 7. *Sere* is significantly more likely to occur in Flemish (.43, $p < .05$), while *vele* is significantly less likely to occur there (-.76, $p < .01$) when

17 The regression models used in this study did not account for selection biases that may have been present for individual writers and scribes. Therefore, the samples were not independent, which means that the *p*-values may be somewhat off. The issue is that medieval texts are typically anonymous and copied by various scribes, who could potentially alter the text. Therefore, it will be impossible to truly account for this when building a statistical model based on medieval data.

contrasted with Brabantian. *Sere* is also less likely to occur in Hollandic (-2.32, $p < .005$), Limburgian (-3.97, $p < .005$), and Rhinelandic (-1.37, $p < .001$). *Vele* also occurs significantly more often in Limburgian (2.19, $p < .001$) and Rhinelandic (1.31, $p < .001$). *Harde* is significantly more likely to modify positive words (.40, $p < .05$), while *sere* is significantly less likely to do this (-.39, $p < .05$). Negative or positive environments do not significantly make a difference for the three adverbs, as can be seen in Table 9, nor does the category of the modified phrase. However, the separation between the adverb and the modified phrase can be used to predict the adverb. For example, *harde* is significantly more likely to occur with high separation values (.82, $p < .001$). Similarly, *sere* occurs significantly more often with low separation values (-.71, $p < .001$).

4.2 Adverbs of extremely high degree

Table 10 show the general usage of the adverbs of extremely high degree, and these will be discussed individually below.

Table 10 The distribution of categories for the adverbs of extremely high degree

Adverb	Total	ADJ Pos	Adv	VERB	PTC	PP
Grotelike	4	0	0	0	3	1
Utermaten	159	88	26	38	7	0

4.2.1 *Grotelike*

Since *grotelike* is attested only four times, no table will be provided here. Three attestations are from Flemish texts, and the other is found in a Brabantian one. Aside from this, it is also found in the Limburgian *Glossarium Bernense*, written by an unknown writer dated to 1240, as a gloss for Latin *magnifice* ‘superbly’, although no modified word is given, so it was not included in the count above. There are two combinations with the verbal idiom *onrecht doen* ‘do injustice’ which are worth noting here because of their syntactic structure. The adverb appears in the relative clause together with *doen*, whereas the noun *onrecht* is the head of the relative construction, as shown in example (9).

- (9) met onrecht dat sie mie grootleke ghedaen hebben¹⁸
 with injustice that they me greatly done have
 ‘With injustice that they had greatly done to me’.

18 Corp.I, 1474A, Brugge and Corp.I, 1474AA, Brugge.

Table 11 The distribution of categories for the adverbs of minimal and quasi-negative degree

Dialect	Total	ADJ	ADJ	ADJ	ADV	ADV	ADV	ADV	VERB	PTC	PP
		Pos	COMP	Too		COMP	DEG	Too			
Buere	12	11	0	0	0	0	0	0	1	0	0
Een deel	48	18	4	0	8	0	0	2	10	5	1
lewet	121	9	4	1	40	6	1	2	43	10	5

4.2.2 *Utermaten*

Similar to *sere*, the meaning of *utermaten* sometimes tends towards *hard*, *quickly*, or *loudly* (examples from 4.1.2 also apply here). These instances are, once again, not included in the analysis.

Utermaten is attested 159 times, making it the most prominent adverb of extremely high degree in Early Middle Dutch. It is predominantly used to modify adjectives, although it can also modify adverbs, verbs, and participles, and it most often appears after the modified word. *Utermaten* is predominantly used in Flemish and Brabantian, it appears twice in Rhinelandic, and it is not attested in Hollandic or Limburgian. The fact that it is not found in the latter two could be due to the scarcity of texts in these dialects. Another influencing factor is register, as *utermaten* is notably not attested in any of the charters, and it is only found in literary texts. This is unlike the other adverbs of degree, which implies that *utermaten* could be considered part of the literary language in Early Middle Dutch. *Utermaten* has a relatively small preference for positive words, as it modifies those 96 times (60.38%), and it overwhelmingly prefers positive environments, as it occurs in a negative one only once. *Utermaten* has a mean separation value of -1.17, meaning that it most often follows the modified phrase.

Due to the fact that *utermaten* is the only adverb of extremely high degree with a substantial number of attestations, a formal statistical analysis to compare them is impossible.

4.3 Adverbs of minimal and quasi-negative degree

Table 11 shows the general usage of the adverbs of minimal and quasi-negative degree, and these will be discussed individually below.

4.3.1 *Buere*

In total, *buere* appears twelve times in the corpus. In ten cases, it occurs in a negative environment, while it occurs twice in a context without explicit negation. According to VMNW (2015 s.v. *buere*), *buere* still functions as an

adverb of quasi-negative degree in these contexts, which implies that the adverb itself functioned as a marker of negation. Example (10) from *Der Naturen Bloeme* manuscript D illustrates its usage in a context without explicit negation.

- (10) Lacta ... es i dier bore groet
 lacta (lizard) is an animal not very large

Notably, *buere* appears eleven times in texts written by Jacob van Maerlant, and once in *Floyris ende Blantseflur*, a Rhinelandic text by an unknown writer dated to 1201. *Buere* is not found elsewhere in the corpus. When *buere* modifies regular adjectives, it always directly precedes them, and different positions are found for the verb and for *min*. When modifying the latter, it occurs in the expression *ne buere war min* ‘almost’, which functions as an adverb of approximate degree, as also reported by VMNW (2015 s.v. *buere*).

4.3.2 *Een deel*

Similar to *vele*, *een deel* can have various different functions in Middle Dutch. When used as an adverb, it can also have the meaning *partially* (VMNW 2015 s.v. *deel*). This meaning is not always easy to separate from its usage as an adverb of degree, and therefore ambiguous instances are not included. This means that the numbers may once again be too conservative. Example (11) from Van Maerlant’s *Rijmbijbel* illustrates this usage (VMNW 2015 s.v. *deel*).

- (11) Die bodscap hem een deel bequam
 the message him partially pleased
 ‘The message partially pleased him’.

As can be seen in Table 15, *een deel* can modify a variety of categories. When examining dialectal variation, an interesting pattern emerges. Notably, there are no attestations in the Brabantian or Limburgian dialects. The latter could be explained by the fact that texts in that dialect are scarce, but Brabantian texts are generally quite numerous, as can be seen in Table 3. One attestation comes from Hollandic and another four from Rhinelandic, while the remaining 43 are all from Flemish. *Een deel* exclusively appeared in positive environments, and it also has a preference for modifying positive words, as it does so 35 times (72.92%).

4.3.3 *Iewet*

Iewet is the most commonly used adverb of minimal degree in Early Middle Dutch. When it comes to dialectal variation, it is most often used in the Brabantian dialect, which is notable because material in Flemish is more numerous (see Table 3). The vast majority of instances in which *iewet* modifies adverbs are also from the Brabantian material. Furthermore, no attestations of *iewet* are found in Hollandic texts. It is also noteworthy that *iewet* appears in two main variants: a shortened form *iet* (in various spelling variants) and a form with a nasal infix *iwent*. The latter is attested only in two texts: the Limburgian *Glossarium Bernense* and *Sente Lutgart* manuscript K. The variant with the nasal infix is the only one that occurs in the first text, while in the second the short form also occurs and is dominant. In *Sente Lutgart* manuscript K, *iwent* occurs three times, while *iet* occurs 57 times. This adverb is also attested twice in *Reinaert E*, the only other Limburgian text in which it occurs, although only the short form is used. *Iewet* has a strong preference for positive environments, as it occurs there 118 times (97.52%), and it shows a weaker preference for modifying positive words, as it does so 87 times (71.90%).

4.3.4 *Comparison*

A binomial logistic regression model was fit to compare the two adverbs of minimal degree, *een deel* and *iewet*, taking the former as the reference level, again based on the variables listed in Table 4. However, the variable dialect was not included due to it being affected by multicollinearity. The Model Ratio Likelihood test showed that this model was overall significant ($\chi^2(12) = 33.60, p < .001$) and had an index of concordance *C* of .77, which is an acceptable discrimination (Levshina 2015: 259). There were no variables that significantly distinguished among the adverbs.

5. Discussion

5.1 The development of the individual adverbs of degree

The distribution of Middle Dutch *harde* is similar to that of Modern Dutch *heel*: (1) it combines with adjectives and adverbs, not with verbs and verbal idioms; (2) compared to its main rival, *sere*, it is less likely to occur with negative phrases, and the same is true for *heel vis à vis erg* based on a sample of eight lexical and morphological antonym pair adjectives from the

Corpus Hedendaags Nederlands (2013)¹⁹ (*erg* occurs with inherently positive adjectives 7,022 times (75.45%), and *heel* does so 25,828 times (85.05%)); (3) *heel* does not combine with comparatives or superlatives. *Harde* appears to be replaced by *heel* in the Early Modern period. In 16th century texts such as the diary of the monk Wouter Jacobsz (from Gouda, hence Hollandic-speaking) we see *heel* next to *seer*, and no *hard*. Southern texts, such as Jan van den Bergh's *Esbatement van Hanneken Leckertant* (Brabantian, 1541), still have *harde/herde* but no *heel*. So it seems that *heel* replaced *harde* and took over its distributional characteristics. A complication in this scenario is the occurrence of another use of *heel* in Early Modern Dutch, as an absolute degree modifier. However, this ambiguity gets resolved eventually when *geheel* and *helemaal* take over the absolute use, and *heel* is reserved for high degree modification (WNT s.v. *heel*^{III}, sub 2). The modern usage of *hard*, as a modifier in combinations as *hard nodig* 'badly needed' appear to be a novel development in the 19th century. The newspaper site Delpher provides 2 occurrences in the period 1800-1849, 601 in the period 1850-1899, and 1679 occurrences in the 10-year period 1900-1909. This rapid increase cannot be explained by the increase in size of the newspapers during this period alone. Note that no cases were found before 1820. Another combination, *hard ziek* 'severely ill', is attested in 18th century newspapers, such as the *Oprechte Haerlemsche courant* of 22-02-1755.

The distribution of *sere* is like that of modern *erg* 'badly'. This item emerges in the 19th century as an important high degree modifier. Similarities to be noted are: (1) *erg* may combine with adjectives and adverbs, but also verbs and verbal predicates; (2) *erg* is more likely to modify negative phrases than *heel*, just like *sere* when contrasted with *harde*, although the difference is larger for the Middle Dutch pair than for the Modern Dutch one, as shown above; (3) just like *sere*, *erg* does not combine with comparatives. We might explain these similarities by assuming that in informal Dutch, *zeer* was replaced by *erg*, and took over its distributional profile.

The fact that *sere* was more likely to modify negative words than *harde* and *vele* may imply that its lexical meaning *sorely* was still present to some degree. This is compatible with Klein's (1998) description of semantic bleaching as a gradual process, as she argues that the lexical meaning may still be present

19 The adjective pairs were *goed-slecht* 'good-bad', *mooi-lelijk* 'pretty-ugly', *groot-klein* 'big-small', *sterk-zwak* 'weak-strong', *hoog-laag* 'high-low', *aardig-onaardig* 'kind-unkind', *aangenaam-onaangenaam* 'pleasant-unpleasant', and *duidelijk-onduidelijk* 'clear-unclear'. Instances in which the adverb was directly preceded by *niet* 'not' were excluded to restrict them to positive environments.

in the earlier stages of grammaticalisation. This would suggest that *sere* was not yet fully grammaticalised in Middle Dutch, which implies that it is a younger adverb. This is further supported by the fact that the expected Gothic cognate **sáirō* is not attested, and its equivalent in Old High German and Old Saxon, *sēro*, is only rarely used and with a limited distribution²⁰. Its novelty as a bleached adverb may have led to a higher perceived intensity (Ten Buuren et al. 2018, Lorenz 2002), which may have contributed to its higher frequency. Unlike *harde* and *vele*, *sere* has not undergone further syntactic specialisation since the Early Middle Dutch period. However, it has undergone specialisation in terms of register as we argued above, and it has become less frequent in the process compared to younger adverbs of high degree like *heel* and *erg*.

Vele was not replaced by another adverb, and remains common. However, the distribution of this item has narrowed to comparatives and the comparative-like word *te* ‘too’. The fact that it is the only Early Middle Dutch adverb of high degree capable of modifying comparatives may have been the reason for its specialisation, as that may have been perceived as its main distinguishing factor in line with Humboldt’s principle (Koefoed 1978). When looking at later periods, professional writers in both the seventeenth and eighteenth centuries use *veel* exclusively with comparatives and the construction with *te*, while personal letters by non-professional writers from the seventeenth century show more variation in their usage of *veel*, although it is primarily found with comparatives there as well (Bloemhoff 2014). This implies that the specialisation of *vele/veel* was still ongoing in the seventeenth century. Newer adverbs have joined *vele/veel* as modifiers of comparatives, including *een stuk* ‘a piece, a good deal’ and *heel wat* ‘a lot’.

The adverb of extremely high degree *utermaten* is (relatively) well attested in the Early Middle Dutch corpus, although it is still less frequent than the adverbs of high degree. It appears to have retained its combinatory possibilities, but its position relative to the modified word has changed. In Middle Dutch *utermaten* tends to follow the modified word, while in Modern Dutch it directly precedes it. This could be seen as a sign of further grammaticalisation, as it changed from a PP-modifier into an adverb through the process of univerbation. The other extreme modifier, *grotelike*, is too infrequent to warrant any far-reaching conclusions.

20 Based on the *Old German Reference Corpus* (Donhauser, Gippert & Lühr 2018), *sēro* appears 2x in the Old Saxon *Heliand* and 1x in *Genesis* (both 9th century), and the comparative *sērur* also appears 1x in the *Heliand*. In Old High German, *sēro* is only found 4x with a degree meaning in Otfrid’s *Evangelienbuch* (9th century South Rhine Franconian) and 2x in late Alemannic fragments (11th to 13th century) as *sēr*.

Table 13 The distribution of *een beetje* and *wat* between the positive-comparative adjectives pairs *moelijk(er)* '(more) difficult', *makkelijk(er)* 'easi(er)', and *lastig(er)* 'tricki(er)'

	moelijk	moelijker	makkelijk	makkelijker	lastig	lastiger
een beetje	20	1	23	6	6	0
wat	21	25	9	9	11	14

The only adverb of quasi-negative degree analysed here was *buere*. It shows a great deal of specialisation, being used mainly in negative environments. This implies that it is already strongly grammaticalised, as it appears to have undergone a great deal of specialisation. The fact that it has few attestations and is limited primarily to texts attributed to Jacob van Maerlant, with the only exception being that of an early text, suggest that its usage was limited and perhaps already declining in the Early Middle Dutch period. In Early Modern Dutch, it is no longer attested.

Een deel does not show a great deal of syntactic specialisation. It has a limited dialectal distribution, being used primarily in Flemish and unattested in the Brabantian and Limburgian texts. In Brabant, the other main adverb of minimal degree, *iewet*, is used instead. Neither expression is specialized for either comparative or positive forms of adjectives and adverbs. Mostly, this is still the case in Modern Dutch for adverbs of minimal degree, in particular *een beetje* 'a little bit', *een tikje* 'a touch', *wat* 'somewhat', although we noted earlier on that *iets* 'something, somewhat' is restricted to comparatives and *te* among adjectival categories. Among verbs, we may note that *iets* selects expressions with a comparative component: *de temperatuur daalde iets* 'the temperature decreased somewhat' = *de temperatuur werd iets lager* 'the temperature got somewhat lower'.

However, when we look at statistical patterns, we see incipient specialisation among the adverbs of minimal degree as well. Thus *wat* 'somewhat' is more commonly combined with comparative forms and *een beetje* 'a bit' with positive forms. To illustrate this point, we extracted sentences containing *zijn* 'to be' followed by the two different adverbs followed by three different positive-comparative adjective pairs from the *Corpus Hedendaags Nederlands* (2013)²¹. The results are shown in Table 13.

One of the most striking differences between Middle Dutch and Modern Dutch is the lack of adverbs of intermediate degree, such as *nogal*, *vrij* and

21 We added *zijn* 'to be' to the context to exclude common exclamative forms of *wat* like *wat moeilijk!* 'how difficult!'

tamelijk. WNT (2015) provides data from the Early Modern period, none from Middle Dutch. These are also adverbs that show up relatively late in child language (Hoeksema 2011a). We may hypothesize the following (one-way) implicational generalization: If a language has adverbs of moderate degree, it also has adverbs of high and low degree. We believe it would be worthwhile to study degree marking systems from a typological perspective, to see if this is a true universal and under which circumstances languages develop moderate degree modifiers.

5.2 Distinguishing factors

As was expected, the results from the multinomial logistic regression model indicate that the three main adverbs of high degree in Middle Dutch, *harde*, *sere*, and *vele*, were distinguishable based on linguistic factors and based on dialect. These results were in line with Humboldt's principle (Koefoed 1978), as the differences in form may have created different tendencies in their function, in addition to dialect differences. This may also suggest that Humboldt's principle interacts with Bolinger's (1972) and Klein's (1998) observation that adverbs of degree tend to specialise over time after their context is first extended. Whether or not this idea holds true in a general sense would have to be confirmed using data from other languages as well. It should be noted that the adverbs of high degree were not completely distinct in Middle Dutch, as they were all attested modifying the base categories of positive adjectives and adverbs, verbs, and participles, and it appears that all three options were available there.

Unlike the adverbs of high degree, those of minimal degree were not distinguishable based on linguistic factors. This was different from what was hypothesised, even though the overall model was still significant. All of this implies that Humboldt's principle is not universally applicable when it comes to adverbs of degree in Middle Dutch, which goes against the first hypothesis. It is currently unclear why the two groups of adverbs behaved differently in this regard, but a lesser degree of diversification among adverbs of minimal degree is still a characteristic property in Modern Dutch and English (Hoeksema 2005). While Humboldt's principle does not explain this fact, it can be viewed as an important observation of diachronic continuity.

6. Conclusion

The present study documents the distribution of eight adverbs of degree in Early Middle Dutch. The goal of this work was twofold: (1) we hope

to have gained insight into developmental trajectories by establishing a clear picture of the oldest period about which we have sufficient evidence, and (2) to have set up a basis for comparison with the other West-Germanic languages. For some adverbs we have presented some initial results bearing on the issue of later developments. We found that some adverbs have undergone syntactic specialisation over time (e.g. *vele*), in line with the tenets of grammaticalisation theory (Bolinger 1972: 18, Klein 1998).

We saw an incipient specialization among the adverbs of high degree, such that *harde/herde* is preferred in combinations with adjectives, *sere* in combinations with verbs and *vele* in combinations with comparatives. While these preferences are not absolute, we see them turn into stricter requirements in Modern Dutch.

We noted that newly emerged adverbs can potentially take over the distribution of older ones, as is evidenced by the fact that Modern Dutch *heel* has a distribution that resembles Middle Dutch *harde*. *Sere* shows specialisation in register after the medieval period, while its syntactic specialisation mostly shows stability. The latter finding is not predicted by grammaticalisation theory, but it should be noted that this theory is mostly concerned with sketching possible pathways of development, not with predicting if an item will in fact proceed along such a path.

Another notable finding is that Early Middle Dutch adverbs of high degree are more differentiated than adverbs of minimal degree. Whether this is something intrinsic to adverbs of high degree, or whether this is by chance would have to be confirmed by examining data from other languages, but it does seem to be striking that Modern Dutch and Modern English minimal degree adverbs do not show the same sensitivity to the positive/comparative opposition that we find among adverbs of high degree, nor to the distinction between verbs and adjectives.

We plan to do more work along the twin lines of language comparison within the older West Germanic languages and the study of diachronic developments that start in the Middle Ages. We hope that this work will not only shed light on the development and diversification of adverbs of degree in Germanic, but ultimately contribute to a wider typology of degree marking in natural language and a better understanding of factors such as internal change and language contact in the development of the particularly rich systems of degree marking so characteristic of contemporary European languages.

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