

Levelling Of I-Umlaut in Classical and Post-Classical Old Frisian Nouns

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ABSTRACT

The paper discusses and evaluates the extent of i-umlaut levelling in classical (ca. 1300–1400) and post-classical (ca.1400–1550) Old Frisian nouns. In terms of the methodology, the main goal of the analysis is to identify the quantitative relation between the incidence of i-umlauted and umlautless root vowels in the nominal declension paradigms. In order to understand and assess the process of levelling of i-umlaut in Old Frisian, three aspects that may have had an impact on the presence or absence of i-mutated vowels are taken into account, namely: the presence of the i-mutation trigger *-ī and *-j and *-i, the establishment of whether i-mutation is noticeable in the entire paradigm or it is just an intraparadigmatic alternation, and finally, the differentiation between intraparadigmatic levelling of i-umlaut and borrowing from another language. A quantitative analysis is performed on the texts culled from two corpora of Old Frisian: The Corpus Oudfries and The Integrated Scientific Frisian Language Database. The analysis reveals the tendency of the language to regularize its nominal declension patterns, which results in a later levelling of i-umlauted vowels. This reveals the differentiation between the classical and post-classical period of the language's development. Statistical tests evaluate proportion differences on the operation of i-umlaut and indicate that the discrepancies with reference to the presence of i-umlauted vowels in nouns from the classical and post-classical forms are significant. The analysis and its results can supplement the study of the process and its influence on declension patterns not only in Old Frisian, but in all West Germanic languages.

Keywords: i-umlaut; classical Old Frisian; post-classical Old Frisian; nouns; levelling

INTRODUCTION

I-mutation belongs to the group of vowel harmony processes and is regarded as one of the most important vowel changes in West and North Germanic languages. Nevertheless, its occurrence is not visible at the same level in different dialects (Nielsen, 1981, p. 89). There are many word categories which, despite favourable i-umlaut conditions, did not follow the pattern and which adopted, due to analogy, more regular, dominant paradigms. Thus, the tendency of languages to regularize their morphological patterns leads to an elimination of i-umlaut in later stages of the languages' development. Old Frisian material indicates an early implementation of i-umlaut; nevertheless, what is predominantly observable is the paradigmatic levelling of vowel alternations that occurred due to i-mutation (Adamczyk, 2018, p. 86).

The paper aims to discuss the use and the degree of regularity of i-umlaut as an inflectional marker in Old Frisian nouns. The main goal is to determine the extent to which i-umlaut is preserved as an inflectional marker, and find out when we can talk about the levelling of i-umlaut in classical and post-classical Old Frisian. The research material used here comes from two sources: *The Integrated Scientific Frisian Language Database* and *The Corpus Oudfries*. The texts

coming from the corpora that are used in the study are, however, divided into two groups: texts from the classical (ca. 1300-1400) and post-classical (ca.1400-1550) period. The author adopts the periodisation established by Sjölin (1969) and developed in Versloot (2008, p. 8).

I-UMLAUT

I-umlaut belongs to the most distinctive sound changes to have appeared in Northwest Germanic languages. Minkova and Stockwell (2008, p. 30) describe the process as a regressive assimilation triggered by [-i, -j] occurring in the inflectional or a derivational suffix e.g.

*/a/ > /æ/ > /e/ <e> **salja-* > OF *sella* ‘to sell’
*/u(:)/ > /e(:)/ <e>, <ē> **upin-* > *epen* ‘open’
*/au/ > /a:/ > /e:/ <a >, <ē> **naudi-* > *ned* ‘need’

The attempts at defining and describing the process began with Jacob Grimm’s study (1819) and have continued till nowadays. The Structuralist and the Twadellian school insisted on explaining i-umlaut as a purely phonetic process (Twaddell, 1938). Current studies of the process conducted by Buccini (1992), Iverson and Salmons (2004, 2008), and Fulk (2018), look at the process from a broader, morphophonological perspective. Buccini (1992, p. 85) considers i-umlaut to be a gradual sound change and suggest that the process:

gradually expands its range of application with regard to the vocalic conditioning where possible and also with regard to the intervening consonantism: where the consonantism is acoustically and/or articulatorily ‘cooperative’, umlaut is more likely to develop and to do so relatively early on, while, by the same logic, where the consonantism works acoustically and/or articulatorily against the V-V [vowel - vowel] assimilation, umlaut is less likely to develop or else to develop later or more weakly.
(Buccini, 1992, p. 85)

According to Iverson and Salmons (2008, p. 1), i-umlaut “was deeply rooted in the physiology of speech and eventually became deeply ingrained in the morphology of the west Germanic languages”, which is noticeable not only in nominal, but also adjectival and verbal flexion of these languages. As the main focus of the present study is put on nominal flexion, it has to be pinpointed that i-umlaut occurs in **ja-*, **jo-* stems, but also in **i-*stems, **nd-*stems and root nouns of West Germanic languages, where it is morphologized and can serve as a plurality marker.

BLOCKING OF THE I-UMLAUT PROCESS

It is now suggested by a variety of studies (Ringe, 2006) that blocking of the i-umlaut process was predominantly limited to Proto Germanic **a* (henceforth PGmc.). This can be seen in the case of Old Saxon, in which i-umlaut is blocked when PGmc. **a* is followed by the consonant clusters: *h/x/* (later vocalized to [h]) + *l, n, t, s* as in *ambahti* ‘office’ (Gallée, 1993).

When we consider Old Frisian, we can observe that i-umlaut is blocked in situations in which PGmc. *a* is followed by a cluster of consonants composed most often of any nasal + consonant or *l* + consonant, as in OF *falla* ‘to fell’, *kanna* ‘to know’, and therefore PGmc. *a* > OF *a* [æ] (Bremmer, 2009, p. 42). Nevertheless, basing on corpus and research evidence (see the analysis), we cannot assume that i-umlaut blocking in Old Frisian occurred regularly. On the contrary, we can often draw a conclusion that i-umlaut took place here largely irrespective of the

quality of the intervening consonant. What is more, presence of *a* before the above mentioned consonant clusters does not always indicate lack of i-umlaut. The presence of contrasting forms with *e* and *a*, e.g. *kenna / kanna* ‘to know’ can appear, due to dialectal differences. Siebs (1901, p. 1183-5) was one of the first scholars who shed some light on the matter of i-umlaut blocking in Old Frisian. His theory on the matter is reformulated and further developed by Hoekstra and Tigchelaar who state that “*i*-mutation of Gmc *a* before nasal consonant or before *l* + consonant resulted in an [æ]-sound that had no phonemic status in Proto-Frisian, but was initially analyzed as an allophonic variant of either /e/ or /a/” (Hoekstra & Tigchelaar, 2014, p. 187). The researchers claim that in time the allophone developed as /e/ or /a/, giving two possible forms of the word which could be found in both classical and post-classical Old Frisian. Similar conclusions are drawn by Versloot and de Vaan (in preparation) who claim that i-mutation of **a* in the *-cht-* and *-ld-* context resulted in [æ] in Proto-Frisian, and later was realized as < e > or < a >. The blocking effect additionally depends on the type of the i-mutation trigger: **i*, **i*, **j*. As the mutation potential of **i* was smaller than of the latter two, not only **a*, but also **u* could not be i-umlauted when they occurred before *-ld-* or *-cht-*. It needs to be taken into account, however, that there are just a few instances of the words with the latter context (Hoekstra and Tigchelaar, 2014, p. 186), e.g. *nachtis*, *nachtes* ‘night’, and that the context itself “has not been systematically described in the literature yet” (A. Versloot, personal communication, September 16, 2020).

Despite the observable dominance of *a-* forms in classical texts and *e-*forms in post-classical ones, it is difficult to talk about unambiguous and distinct divisions. We can find, for instance, as Hoekstra and Tigchelaar (2014, p. 189) enumerate, two different forms in one manuscript, hence B1 (*lamethe / lemethe* ‘paralysis’, *kampa / kempa* ‘to fight’), E1 (*hant / hent* ‘catches’3sg.pres.), E2 (*hangst- / hengst-* ‘horse’, *lamethe / lemethe* ‘paralysis’) or H (*kampa / kempa* ‘champion’). Such a situation can be explained by scribal preferences, borrowings from Middle Dutch or Middle Low German, or analogy. Still, as claimed by Hoekstra and Tigchelaar (2014, p. 190), *e/a*-variation is, to a certain extent, orthographic in Old Frisian.

LEVELLING OF I-UMLAUT

Similarly to other West Germanic languages such as, for instance, Old English or Old Saxon, i-umlaut in Old Frisian cannot be treated as a completely regular and systematic process. A discussion on the subject was provided by Trask, who points out that

the action of umlaut is often obscured by analogical levelling of the alternations introduced by it, by loss or modification of the conditioning environment and by the failure of scribes always to distinguish umlauted vowels from their non-umlauted counterparts. (Trask, 2000, p. 352)

The scribes’ manifold interpretations of spelling resulting from lack of a common, uniform spelling system often led to a situation in which the i-umlaut process was not marked in writing, and, therefore, simply not visible in the manuscript. Additionally, as indicated by Ringe, i-umlaut is often “undone by paradigmatic levelling” (Ringe, 2006, p. 123). In such a case, a particular grammatical or morphological class of words shifts from one to another declension or conjugation pattern. This can be particularly noticeable in both the Old English and Old Frisian nominal declension where *i*-stem nouns tend to turn to the umlautless declension patterns of *a*-stem and *ō*-stem nouns. Iverson and Salmons (2004, p. 91) draw the same conclusions with reference to yet another Germanic language, namely Old Norse, and state that “the feminine *i*-stems lose i-umlaut as they move over to the *ō*-declension [and the masculine *i*-stems – as they move to the *a*-stem

declension]”. I-umlaut paradigmatic levelling can also be observed in Old Frisian *nd-* and *root* stems which frequently “adopt endings from the strong *a*-declension” (Bremmer, 2009, p. 64). A possible explanation for this might be that the general tendencies of languages to regularize and systematize their morphological patterns through analogy lead to the elimination of i-umlaut in a later stage of the languages’ development. We can observe the intraparadigmatic analogical processes that take place within the paradigms. Intraparadigmatic analogy, as stated by Adamczyk (2018, p. 26), “involves an extension of a new inflectional form at the expense of other forms within one paradigm”. What is more, it also can lead to the elimination of the stem-vowel alternation, and thus we talk here about i-umlauted vowel levelling. The discussion on i-umlaut levelling, however, needs to take into account the differentiation between the loss of i-umlaut through borrowing (e.g. from Middle Dutch or Middle Low German), analogical levelling and the loss through intraparadigmatic levelling.

When we compare, for instance, the regularity of the operation of i-umlaut in **jō-* stem nouns and *root* stems, we notice that i-umlaut in the root nouns is only found in plural forms. There are no attestations of earlier i-mutation in the dat.sg, even though it would seem very likely. Intraparadigmatic levelling is, therefore, most probable here. Adamczyk (2018, p. 280) talks about “the generalisation of the nom./acc. sg. form across the entire paradigm of the singular”. I-umlaut in **jō-* stem nouns, on the other hand, due to the presence of a strong i-umlaut trigger **-j-* throughout the whole paradigm, does not experience the process of i-umlaut levelling at all (see the outcome of the analysis).

PERIODISATION AND CHARACTERISTICS OF OLD FRISIAN

Whenever we analyse older forms of Germanic languages, we can generally assume that their representative forms often go back to the period of time between the 5th and 11th centuries. By way of illustration, Old High German is dated (for) c. 750 - 1050 (Salmons, 2012, p. 175), Old English goes back to c. 450 - 1100, and Old Saxon is placed between the 9th and 12th centuries (Gallée, [1910] 1993, p. 3). When we consider the available Old Frisian sources, we note that they all come from the 13th to 15th century and, theoretically, are much younger than their Germanic counterparts. Such difference in dating may be surprising; however, a careful analysis reveals that all the languages share certain phonological and morphological features. Due to this, scholars agree that despite the difference in periodisation, Old Frisian can, without hesitation, be considered old (Bremmer, 2009; Versloot, 2008, 2004). Adamczyk (2018, p. 252) notes that most commonly the term *Old Frisian* is used to refer to mediaeval manuscripts and charters that are dated before 1550. The periodization of Frisian formed the central focus of a study by Haan (2001) in which the author concludes that “Old Frisian should be considered a Middle West Germanic language variety. This implies that the term ‘Old Frisian’ is indeed linguistically spoken of as ‘a misnomer’ for the Frisian language of 1275-1550” (De Haan, 2001, p. 201). What is more, De Haan abandons the term ‘Old Frisian’ and refers to the oldest written forms of the language (dated before 1275) as to Ante-Middle Frisian. Versloot (2004, p. 289), in response to De Haan (2001), pinpoints that “[w]hatever periodisation scheme one prefers, the central conclusion is that the oldest Frisian attestations in the manuscripts represent a language that is fairly compatible with other Old Germanic languages”. Versloot (2004, p. 260) bases his argument on linguistic features and divides the Old Frisian sources into three groups: the first he dates for 1300-1450 and describes as archaic Old Frisian identifiable in legal manuscripts such as *The First Brokmer Manuscript* (B1), *The First Rüsting Manuscript* (R1), *The Second Rüsting Manuscript* (R2) and *The Second Hunsingo Manuscript*

(H2); the second he dates from the period 1450–1525, coming from the present Dutch province of *Fryslân*, and the third consists of charters from 1329/1379 to the early 16th century. Here, however, the author recommends caution and states that the charters still need further and careful investigation (Versloot, 2004, p. 288).

In general, the periodization of Old Frisian texts can be problematic and often challenging (Adamczyk, 2018, p. 249). The same author refers to a similar opinion of yet another scholar, namely Nielsen (1990, p. 349), in whose opinion Old Frisian has been extensively marginalized and received the name of “the Cinderella of Germanic philology”.

CLASSICAL OLD FRISIAN

The language used in the first group of the above mentioned texts originated from Old East Frisian and is classified as classical Old Frisian (Boutkan, 1996; Versloot, 2008; Bremmer, 2009; Versloot & Adamczyk, 2014). Adamczyk (2018, p. 253) adds that already in the nineteenth century it “was viewed as the most archaic variety of Frisian (...) which display[ed] a number of conservative features”. Classical Old Frisian texts, despite their late dating, include language that shares many phonological, morphological, lexical and syntactic features with ‘older’ Germanic languages. From the phonological perspective, the Riustring variety of Old Frisian is considered to be most archaic; still, such a claim is challenged by scholars such as Bremmer (2009, p. 62), who goes further by stating that “we must abandon the notion that the language of R1 (and R2 and R4) is ‘archaic’ with respect to its phonological system. Nor is its Frisian older than that contained in contemporary non-Riustring manuscripts – it only is different, that is all”. What is, however, important for the research is that just as observed in or expected from ‘old’ languages, the Riustring variety of Old Frisian keeps full vowels in final position in unstressed syllables Boutkan (1996, p. 32). Versloot (2004, p. 271) adds that the “three positional system in absolute finality changed according to synchronic rules of vowel balance and vowel harmony”. The vowel balance visible in the Riustring variety makes it possible for (the) researchers to identify whether the root vowels of the words in the manuscript are short or long. As pointed out by Bremmer (2009, p. 112) “*i, u* appear after short stem vowels in open syllables (...) [and] *e, o* appear after long or heavy stems or in syllables separated from the stem by another syllable”. Apart from this, classical Old Frisian regularly shows the differentiation between <th>, <t> and <d>, and Old Frisian <th> represents the sounds [p] and [ð] (Versloot, 2004, p. 278; Boutkan, 1996, p. 46).

Yet another characteristic feature of classical Old Frisian is the retention of consonantal clusters of *h- /x/* and *l- /l/*, *r- /r/*, *w- /w/* approximants before vowels in stressed syllables, e.g. *hlērde* ‘ladder’, *hrene* ‘smell’, *hwelik* ‘each, every’. As highlighted by Boutkan (2001, p. 614), the retention of the velar element of the cluster is unique, as it is lost much earlier in other Germanic languages. Classical Old Frisian, similarly to Old English, shows traces of fronting of WGmc **a* – the so called Anglo-Frisian brightening. In Old English, however, the process is reversed, and the original *a* vowel restored when followed by a back vowel, e.g. OFris. *drega* and OE *dragan* ‘to carry’. What is also characteristic here is the presence of i-mutated vowels. We need to remember, nevertheless, that in the case of mutated back vowels, the texts provide us with the already unrounded products of mutation (*e*). With reference to i-umlaut, Bremmer (2009, p. 32) additionally points at a susceptibility of **aN* in closed syllables followed by **i*, **i*, **j* to develop as *a* and not as *e*.

Taking into account the fact that classical Old Frisian texts are still much younger than, for instance, Old English or Old High German texts, and that “[t]he oldest entire Frisian manuscripts to have come down to us are (...) written on internal textual evidence after 1276 but not later than

1300” (Bremmer, 2009, p. 6) (the time of Middle English), it is important to state what does not appear in classical Old Frisian. Versloot (2004, p. 280) observes that there are no signs of Great Vowel Shift (the process which takes place at the time in English) in the classical Old Frisian texts. This supports the claim that despite the late dating of the texts, the language in the text belongs to the ‘older’ languages.

When analyzing the language from the perspective of phonology, researchers need to remember, though, that the length of the vowels is not indicated in classical Old Frisian (Bremmer, 2009, p. 21), which makes it more difficult to correctly interpret the linguistic material.

POST-CLASSICAL OLD FRISIAN

The remaining, linguistically more innovative texts, belonging to the Old West Frisian variety, have been referred to as post-classical Old Frisian texts since Sjölin (1966). The texts that have survived till the modern day and can be analyzed include: *Jus Municipale Frisonum* (J), *Druk or Freeska Landriucht* (D), *Codex Aysma* (A), *Codex Roorda* (Ro). A separate group of texts constitute charters that originate in West Frisia and include the material from the so called transition period from archaic Old Frisian to the early Modern (Versloot, 2008, p. 6). There are around 1200 texts that can be regarded as a great source of information about the changes occurring in the language, but which also help researchers differentiate between the characteristic ‘old – classical’ and ‘new – post-classical’ patterns within Frisian.

One of the first features that grasps the researchers’ attention is the visible contrast between classical and post-classical orthography. Classical texts are regarded as archaic (Versloot, 2004, p. 260), and their spelling is based on Latin orthography and reflects phonetic features of the language. Old West Frisian (or post-classical) writings are different in this matter, as they more often use Low German and Dutch spelling conventions (Bremmer, 2009, p. 114).

Yet another characteristic feature of the post-classical language stage is the presence of vowel length indicators. In order to mark that the vowel in a word was long, scribes used various techniques: they doubled the vowel, e.g. *wiif* ‘woman’ (*wīf*), *deel* ‘part’ (*dēl*), and added additional vowels, most commonly < e >, e.g. *boek* ‘book’ (*bōk*), < ij > *sijn* ‘his’ (*sīn*) or < y > *lyf* ‘wergeld’ (*līf*) (Bremmer, 2009, p. 114). The modified spelling can also be used as an indicator of certain phonological processes. As already mentioned, classical texts showed no traces of the Great Vowel Shift. In post-classical texts, on the other hand, as suggested by Versloot (2004, p. 280), the spelling of, for instance, the word *god* ‘good’ with *oe goed* or *ue gued* may be interpreted as an indicator of the emergence of the development.

Among the most characteristic phonological features of post-classical Old Frisian being represented by Old West Frisian, Bremmer (2001, p. 604) mentions the retention of Gmc. *a before nasals, e.g. *man* ‘man’, *land* ‘land’. Sjölin (1969, p. 17–18), on the other hand, observes that, in contrast to classical sources, final vowels in words become reduced to /ə/ < e >. As far as the behaviour of /e/ < e > is concerned, Bremmer (2009, p. 115) points out that

e (of various origin) before *r* + C and *l* + C often becomes *i*, e.g., *birch* ‘mountain’, *wirda* (< *wertha*) ‘to become’, (...) before *l* + C (*d*, *k*, *n*, *r*), *e* was lengthened, and afterwards diphthongized with stress first on the initial element (falling) and later on the second element (‘late Old West Frisian Breaking’), e.g., *feld* > *fēld* > *fīeld* [fie:ld] (rising); so too: *eldera* > *ēldera* (spelled (e)ldera) > *ieldera* ‘elder; parent’, (...) before *nd*, *e* tends to be diphthongized with stress on the first element, e.g., *einda* ‘to end’, *seinda* ‘to send’.

Phonological processes of pan-Germanic character such as i-mutation leave, both in classical and post-classical Old Frisian, just a trace in the form of /e/ as all the mutated vowels are reduced to /e/ at the time.

As far as the behaviour of consonants is concerned, we can observe here that the Old Frisian fricative /þ/ merges with /d/ (Boutkan, 1996, p. 46). If we consider spelling, Versloot (2008, p. 7) adds that the phonemes /þ/ and /ð/ that in classical Old Frisian are spelled with < th >, in post-classical texts are commonly represented by < t > and < d > respectively. Yet another feature of post-classical Old Frisian (especially Old West Frisian and late Old East Frisian), as mentioned by Bremmer (2001, p. 651; 2009, p. 114), is the change of intervocalic *v* > *w*, e.g. *hove* > *howe* ‘court’. Dyk (2007, p. 95), referring to the change, claims that “[a]s long as *v* was a fricative, it belonged to the onset of a following syllable, e.g. OFris *skri-va*. However, as a glide *w*, it became an ambisyllabic transition sound between two syllables. Hence, *w* became the last element of the preceding syllable and merged with the preceding vowel”. This led to the so called ‘Jorwert Breaking’ due to which long front vowels when followed by /w/ became rising diphthongs: /i:w/ > /ju:w/ *skriouwa* (*skrīva* > *skrīwa*) ‘to write’, /e:w/ > /jo:w/ *iouwe* (*ieve* > *iēwe*) ‘gift’, /ε:w/ > /jɔ:w/ *iouwe* ‘law’ (< *ēwa*) (Bremmer, 2009, p. 114–115).

If we compare and contrast the two stages of the language, we notice that the clusters /hr/, /hl/, /hw/ are present in classical Old Frisian. Versloot (2004, p. 279) observes that, for instance, /hr/, spelled <rh>, is no longer present in Old West Frisian texts from the fifteenth century. In contrast, /hl/, frequently spelled <lh> continues to appear as late as in the sixteenth century. Another characteristic element is the tendency of /e/ to undergo the process of diphthongization. Thus, as listed by Bremmer (2009, p. 115), /e/ is often diphthongized before /nd/, e.g. *seinda* ‘to send’, /l+C (d, k, n, r), e.g. *feld* > *fēld* > *field* – here, before the aforementioned diphthongization, the vowel is lengthened.

I-UMLAUT IN OLD FRISIAN NOUNS – CONTEXTS IN WHICH I-UMLAUT OCCURS IN OLD FRISIAN NOUNS

Old Frisian nouns could be divided into three categories following either weak or strong declension patterns: weak nouns with consonant stems; strong nouns with vowel stem, and athematic nouns (Bremmer, 2009). To a certain extent, all the nouns were influenced by the operation of i-umlaut, as the process itself was rooted in the morphology (Iverson and Salmons 2008). Knowing the patterns and rules governing the process of i-umlaut, we should expect i-umlaut in the nominal declension of Old Frisian weak masculine nouns, and strong declension masculine or neuter nouns which in their earlier West Germanic form had a **-jan-* / **-ja-* ending, like for example *federia* ‘father’s brother’. Here, the PGmc. ending, before its final disappearance, triggers the occurrence of the umlauted forms. The **-ja-* stem nouns can be differentiated from a-stem nouns on the basis of two processes which are characteristic for them, namely, gemination and i-umlaut (Bremmer, 2009, p. 61). Still, the intraparadigmatic variation between umlauted and umlautless forms is potentially possible in masculine and neuter nouns, especially in a consonantal i-umlaut blocking context. Since the reconstructed nom./acc. sg. of the **-ja-* stem class ended in **-i* (without gemination) and the rest of the paradigm in **-ja* (with gemination), the presence of the weaker i-umlaut trigger **-i* and the blocking context could lead to the absence of i-umlaut in the nom./acc. sg forms. As noted in Hofmann (1970), there are only scarce and indirect traces of such a contrast, e.g. in the words *fane* ‘marshland’ < **fani* (Nas) – *fenne* ‘field, meadow’ < **fanjai* (Ds). Hofmann (1970, p. 106) points out that “[d]er älteste westfriesische Beleg für *fenne* stammt aus dem Jahre

1390 (SIPMA, I, 5: *in Tyaedbaedda fenne*), der älteste ostfriesische aus dem Jahre 1364 (FRIEDLAENDER 101: *in Framfenne*). Diese und spätere Belege zeigen jedoch Dativformen [the oldest West Frisian document that has the form *fenne* is from 1390, the oldest East Frisian from 1364. However, this and later documents show only dative forms]”. With regard to OF *fane*, Hofman (1970, p. 104) mentions the parallel forms *fene* and *feen*; nonetheless, he associates them with Dutch influence.

Old Frisian nouns from the group of strong feminine **jō-* stem nouns share certain features with the strong masculine nouns mentioned above. The **jō-* suffix, as stated by Bremmer (2009, p. 62), leads to the lengthening of the final consonant (gemination) and, afterwards, i-mutation, e.g. PGmc. **satjan* > OFris *setta* ‘to set’; PGmc. **brugjō-* > OFris. *bregge* ‘bridge’. What is also worth mentioning here is the fact that **jō-* stem nouns merge with **ō-* stem nouns, and the only element that differentiates the two classes is the presence of the i-mutated vowel in the former one.

The operation of the i-umlaut process is also visible in the masculine, neuter and feminine declension **i* stem nouns. Versloot and Adamczyk (2014, p. 541) consider the activity of i-mutation in **i*-stems (e.g. nom.sg./pl. OE *gīest/gīestas* ‘guest(s)’, [OF *iest* ‘guest’] cf. Old High German *gast/gesti*) as a significant feature shared with Old English. Adamczyk (2018, p.: 266) notes that “[t]he substantial conservatism of the [Old Frisian] masculine **i*-stems can be compared to the pattern found in Old English, where this subclass of **i*-stems is the only type still displaying the inflectional features of the original **i*-stems”. Nevertheless, it needs to be mentioned that Old Frisian **i*-stem nouns often adopted inflectional endings of **a-* and **o-* declension to their mutated stems. What is more, one text may use forms that both do and do not show the operation of i-umlaut, e.g. dat. sg. *welde/wald* ‘power, violence’ in the B1 manuscript. Versloot (2017, p. 212) considers the alternation to be rare and states that the form with no i-umlaut “looks like the levelled form from the instr., supported as well by the identical nom. acc. sg”. Versloot adds that the levelling of i-umlaut progressed with time, and in later texts, only the dat. *wald* without umlaut occurs. The example additionally brings our attention to the matter of the impact of i-mutation factors: **i* vs. **ī* or **j*. According to Versloot (2017, p. 212), the dat. sg. form derives from PWGmc **waldī* with /i:/, whereas the nom. acc. from PWGmc **waldi* with /i/. Since i-mutation was impeded before *-ld* as well as after *w-*, the process was more productive when triggered by a long vowel.

The consonantal stem nouns such as **(i)n-*stem, **jon-*stem, nouns are also, similarly to other West Germanic languages, influenced by i-umlaut. As far as **(i)n-* and **jon-*stem nouns are concerned, i-umlaut was the result of the presence of the **-in-* suffix in the West Germanic forms or **-j-* preceding the **on-*suffix (Hogg & Fulk, 2011, p. 51). In both classes of nouns i-umlaut was visible on a regular basis. As far as **nd-*stem and **r-*stem nouns are concerned, i-mutation is not visible and can only be reconstructed on the basis of the Old English evidence.

Having in mind the reconstructed PGmc. forms of nouns, Old Frisian **nd-*stem nouns should manifest the presence of the i-umlauted root vowel both in the singular genitive and dative forms as well as in the plural nominative and accusative forms which relatively early fell together with the nom. pl. (Hogg and Fulk, 2011, p. 64). This matter is, however, more complicated. Old Frisian **nd-* nouns do not have i-umlauted root vowels and tend to follow the strong *a*-declension (Bremmer, 2009, p. 64).

With regard to the plural forms, it is pointed out by Versloot (2004, p. 277) that plural ending *-a (-e)* appears in **nd-* and root-stems where it replaced the earlier inflection with no ending and i-mutation. Additionally, as pointed by Versloot and Adamczyk (2013, p. 431f) *e*-plurals are

not attested in nominative and accusative plurals of disyllabic *nd*-nouns. They appear, however, in the monosyllabic *fīand* and *friund*.

Another group of nouns influenced by the process of i-mutation consists of the athematic nouns, the so called mutation plurals which historically had their root vowels mutated in the dat. sg. and nom. / acc. pl.. Their PGmc. predecessors had the **-iz* ending in the nominative and in the syncretic accusative plural forms which triggered the i-mutation process. The genitive singular of root stems (with PGmc. **-iz*) could also be expected to show i-umlaut alongside the dative. As Old Frisian provides us with i-umlauted forms such as *men* ‘men’, *teth* ‘teeth’, *fet* ‘feet’, *ki* ‘cows’, but also with umlautless ones, for instance, *burg(a)* ‘bailsmen’ or *bok* ‘books’, Versloot and Adamczyk (2018, p. 35) call the class a “hybrid one”. The presence of both umlauted and unumlauted plurals suggests that i-umlaut may not have been an obligatory marker of plurality in the paradigm. On the other hand, Adamczyk (2018, p. 280) makes an observation that i-umlaut appears to be extended here to the categories which originally were umlautless, e.g. the nominal and accusative singular forms of *mon / man* ‘man’ as in B1 nom/acc. sg. *men*. Still, however, this is visible only in classical Old Frisian. The contrast between umlautless singular and umlauted plural forms is not attested in post-classical texts. (Adamczyk 2018, p. 280). The absence of i-mutated vowels in singular forms, and their occurrence in plural ones may indicate that i-umlaut served as a plurality marker (Adamczyk, 2018, p. 282). Still, the umlauted forms that occur in the corpus are in the minority, and therefore i-umlauted root vowels cannot serve as typical markers of plurality (see the analysis and data discussion). Additionally, as both singular and plural accusative forms merge with their nominative counterparts (Hogg & Fulk, 2011, p. 67), it can be assumed that Old Frisian umlautless plural forms originate from the PGmc. accusative with the ending **-unz*. Due to that, we deal here with no standard, and plural forms such as, for instance, *fet* and *foten* ‘feet’ may co-exist in the texts. The umlautless forms with ‘-en’ are often regarded as borrowings from Middle Low German or Middle Dutch. What also needs to be taken into account is the difference in spelling in the classical and post-classical Old Frisian texts. Forms spelled with <oe> *foeten* or <ee> *feet* have *e* added to indicate the length of the vowel – a convention that appears in Old West Frisian texts (Bremmer, 2009, p. 114). There are also discrepancies between masculine and feminine forms here. While i-umlauted forms occur in the masculine paradigm, there are no records of feminine forms with i-umlauted root vowels. Adamczyk (2018, p. 284) claims, however, that archaic patterns can be found in originally feminine root nouns in modern Frisian dialects, e.g. West Frisian *ko* ‘cow’ – *kij*, a dialect of Föhr/Amrum *kü* – *ki*, Sylt/Föhr/Amrum. *fut* ‘foot’ – *fet* which, in consequence, should be treated as an indication that “the pattern with i-mutation must have been continuously present in the language” (Adamczyk, 2018, p. 284).

What is certain, nonetheless, is that the morphophonemic alternation undergoes a gradual levelling and elimination, as the class of nouns analogically transfers towards and follows the declension patterns of **a*- and **ō*- stem nouns (Adamczyk, 2018, p. 278–282).

Finally, there is the last group of Old Frisian nouns, namely nouns of kinship that belong to **r*-stems that should also be influenced by i-umlaut. Old Frisian **r*-stem nouns, however, seem to differ from Old English or Old Norse as, despite the presence of **-i* ending in the Proto-Germanic dative singular, e.g. **brōþri*, Old Frisian **r*-stem datives with their i-umlauted root vowel are not present in the available texts (Bremmer, 2009, p. 64). As claimed by Versloot (2004, p. 277), the situation described above is most probably caused by “the reduction of historically motivated root vowel change in paradigms”. PGmc. **-i* (**fadri* (dat.sg.)) was dropped and, thus, led to no i-umlaut in the Old Frisian dative forms, e.g. *brōther* ‘brother’, *mōder* ‘mother’, *dochter* ‘daughter’. Within the West Germanic group of languages, this appears only in Old Frisian. For

Old English, the closest to Old Frisian language, Hogg and Fulk (2011, p. 56) note that “the final [PGmc.] *-i would remain long enough to cause i-umlaut before being apocopated”. Siebs (1901, p. 1254, 1346) belongs to the few who claim that i-umlaut can be observed in the dative form *sister* ‘sister’, which he ascribes to the earlier **sustri-* with *-i- causing i-umlaut.

It needs to be remembered that the declension patterns of nouns often experience analogical pressures of one class on another (Adamczyk, 2018, p. 26). Particular classes of nouns begin to share one declension pattern, eliminating, at the same time, their unique characteristic features. This, in turn may lead to levelling of the i-umlauted vowels from the paradigms. The extension of analogical inflection patterns may often take the form of the so called ‘structural analogy’ that is visible in, for instance, the declension of Old Frisian **i*-stem nouns (Adamczyk, 2018, p. 34). Igartua (2005, p. 298) describes the process as “the analogical extension of a valid structural model (...) replacing an earlier model whose internal configuration violates the principles and rules of the declensional system”. Still, in Old Frisian, if we witness analogy in inflection, it occurs in individual morphosyntactic categories, and not entire paradigms.

ANALYSIS OF THE LEVELLING OF I-UMLAUT IN OLD FRISIAN NOUNS

RESEARCH METHODOLOGY

The research has been carried out on the texts included in two electronic corpora *The Corpus Oudfries/Old Frisian* and *Integrated Scientific Frisian Language Database*. Both corpora include an extensive sample of Old Frisian from 1200–1550. It needs to be stated, however, that the study does not investigate dialectal discrepancies that can occur in both classical and post classical material so as to avoid the fragmentation within the description of the analyzed phenomena, which could obscure the broader picture of the i-umlaut levelling in classical and post-classical Old Frisian. The analysis is diachronic in nature, and the list of investigated nouns was compiled on the basis of their root vowels and Proto-Germanic stems provided in the *Old Frisian Etymological Dictionary* (Boutkan & Siebinga 2005), and *Altfriesisches Handwörterbuch* (Hofmann & Popkema, 2008). The analytical part of the study involves a quantitative investigation of the relation between the incidence of i-umlauted and umlautless root vowels in the nominal declension paradigms. Fisher Exact tests (for sample sizes that are small) were pursued to evaluate the proportion differences on each class of nouns with regard to the presence or absence of i-mutated vowels. The analysis of classical and post-classical Old Frisian materials aims at achieving a better understanding of the levelling of i-umlaut in Old Frisian nouns as well as assessing its scale. Latin borrowings are not included in the analysis. The analysis takes into account three aspects that may have an influence on the presence or absence of i-mutated vowels:

First, the presence of the i-mutation trigger is taken into account. It appears that, in general, *-ī and *-j have a much bigger impact on the regularity of the process than *-i.

Second, the analysis considers whether i-mutation is present in the entire paradigm (e.g. **ja*-stem nouns) or whether it is an intraparadigmatic alternation (e.g. *root* stems).

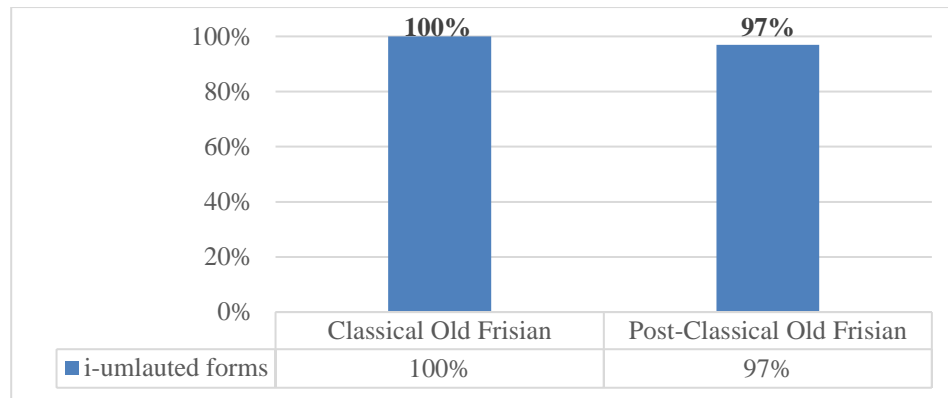
Finally, looking at the levelling of i-umlaut, it is worth to differentiate the loss of the i-mutated vowel through intraparadigmatic levelling or borrowing, for instance due to the influence of Middle Dutch or Middle Low German on Old Frisian.

THE ANALYSIS AND RESULTS OF THE QUANTITATIVE INVESTIGATION

Diachronic change is a crucial indicator of how a language has evolved (Abdul Rahim et al., 2021). The examination of the research material leads to the conclusion that i-umlaut in Old Frisian, although not as regular as in other West Germanic languages, e.g. Old English, was still visible in the nominal paradigms. There are, however, indications of the levelling of paradigmatic vowel alternations. Presence or absence of i-umlauted vowels signalizes the language's change and the differentiation between the classical and post-classical period of the language's development. With time, i-umlauted vowels begin to be levelled, and the interpretation of the features of the root vowels that seem to be the result of the i-umlaut process often is ambiguous.

THE ANALYSIS AND RESULTS FOR *JA-STEM NOUNS

As regards the group of **ja*-stem nouns, i-umlaut appears to be a regular process here (Graph 1.), with no signs of i-umlaut levelling in the classical part of the corpus.

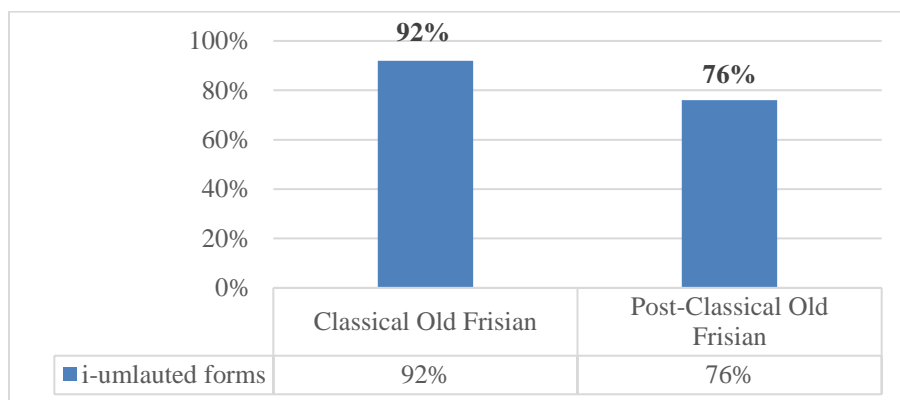


GRAPH 1. I-umlaut in Old Frisian **ja*-stem nouns

Still, post-classical material shows certain changes which indicate retraction of i-umlauted vowels, e.g. *anda* ‘end’ in [OOR10103 – 1449], *ainden* in [OOR10208 – 1470], *aeynd* in [OOR10212 -1471], [OOR10265 – 1476] and [OOR10292 – 1478]. All these instances show that OF *e* (Proto-Frisian **æ*), is retracted to *a* or lengthened and diphthongized to *ei* / *ai*. Such forms, however, appear no sooner than 1439. The presence of the *nd* cluster most probably causes the change of OF *e* > *ei*, and, as suggested by Bremmer (2009, p. 47), “< ei > tends to fluctuate with < ai, ay >, esp. in later texts”.

THE ANALYSIS AND RESULTS FOR *JŌ-STEM NOUNS

The analysis of the Old Frisian **jō*-stem nouns (Graph 2.) proves that the noun class retains i-umlauted vowels in classical Old Frisian, and undergoes the process of i-umlaut levelling much later than any other class of nouns. The collected data indicate that i-umlaut in Old Frisian **jō*-stem nouns is, in the majority of cases, a regular process, and only a few records need to be interpreted with caution.



GRAPH 2. Old Frisian *jō-stem nouns

The post-classical material includes a single example of PGmc. **a* (**bandijo*) > *a* in *banden* ‘feters, shackles’ found in [OOR20091 – 1481] text. The word, most certainly, is a loanword from Dutch. The younger texts also indicate a certain, growing influence of Middle Dutch. The i-umlaut of PGmc. **u* should, in general, lead to OF *e*, thus, PGmc. **hurijo* (‘hire’) > OF *here*. The <ue> spelling, as in OF *huer* in [OOR10266 – 1476]), indicates Middle Dutch <u>, and <e> serves as a marker of the length of the root vowel. In the charter itself the Frisian word *heer* ‘hire’(with i-umlaut) occurs once as well. Interestingly, the corpus provides us also with 6 out of 51 instances in which i-umlaut appears as a variant, namely OF *fomme* ‘girl’ spelled with <e> (*femna*) found only in classical Old Frisian text [H2]. I-mutation should be blocked here due to the presence of a nasal consonants cluster. Interestingly, the forms appear only in one manuscript. The spelling of the word is highly variable, as, at the same time there appear forms spelled with <a> *famna*, <o> *fomna*, *fonne* or <ou> *founa*. Bremmer (2009, p. 28) points out that such variants may occur due to the possible development of PGmc **-ai* in short OF *a* (Proto-Frisian **æ*), as in PGmc. *faimnijo-* > OF *famne*, *femne* ‘girl’, in weakly stressed positions and before consonant clusters. The corpus results for OF *sende* ‘sin’ are also worth a separate analysis. While in classical texts all instances of the word indicate the operation of i-umlaut, post-classical texts include only umlautless forms with <u> or <o> *sonde*, *sunde*. The forms, however, appear to be borrowings from Middle Dutch or Middle Low German. Due to the unrounding of mutated back vowels, /e/- and /e:/ may have been lexically overloaded with the risk of homonymy (e.g. OF weak verb *senda* ‘send’). Borrowing an unmutated cognate from Middle Dutch or Middle Low German could fix the problem (A. Versloot, personal communication, September 16, 2020). Such borrowings that show de-mutation through borrowing are not included in the analysis and the presented results in Graph 2.

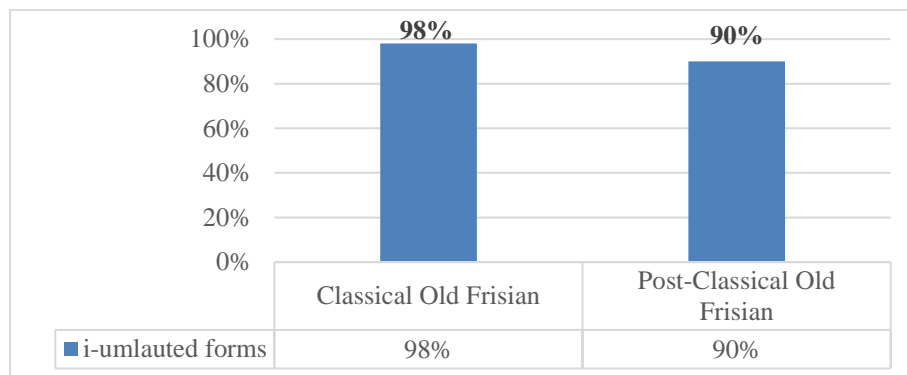
Quantitative, statistical analysis proves that i-umlauted vowels undergo levelling in younger – post-classical Old Frisian material.

Fisher Exact Test was performed to examine the relation between the form of language (classical or post-classical) and the presence of i-umlauted vowels. Total number of tokens was 306 (256 from classical and 74 from post-classical period). There were 232 tokens with i-umlauted vowels from classical and 56 from post-classical period. The relation between these variables appears to be statistically significant for this class of nouns. The Fisher exact test statistic value is 0.0008. The result is significant at $p < .05$.

THE ANALYSIS AND RESULTS FOR *I-STEM NOUNS

As regards the **i*-stem nouns (Graph 3.), Bremmer (2009, p. 63) claims that **i*-stem nouns often shift to **ō*- declension, which, as a consequence, affects the regularity and levelling of the *i*-umlaut. What emerges from the analysis is that *i*-umlaut was phonologized and lexicalized throughout the paradigm. Assuming that the vowel quality did no longer rely on the quality of the ending then, a change of inflexional endings did not affect the vowel quality.

The study proves that Old Frisian **i*-stem nouns retain the *i*-umlauted vowels much more regularly than its close relative – Old English. The mutation trigger, namely **-i*, appears to work here with a significant power, and thus we can see, though *i*-mutation as a phonological process is not active anymore, the effects of the process as late as in 15th century West Old Frisian. The results of the analysis presented in Graph 3 below do not include the nouns that undergo *i*-umlaut blocking due to the blocking context of *-cht-*. What we observe is that **-a-* in such a context is not *i*-umlauted at all. Interestingly, the same consonant cluster *-cht-* does not block the earlier process of **e* rising: Pgm. **plehtiz* > OF *plicht* ‘danger, damage’. There is just one Old West Frisian instance of an umlautless form *plaecht* [OOR20033 – 1453] which most probably is a Middle Dutch borrowing.



GRAPH 3. I-umlaut in Old Frisian **i*-stem nouns

The corpus provides us with post-classical forms which are spelled using Dutch and Low German orthographic conventions (Bremmer, 2009, p. 114), namely, the vowel-length is indicated here by adding < e > or doubling the vowel, e.g. *deel* ‘part’ [OOR20164 – 1489] vs. *del* [R1]. It is also worth pointing out that, in contrast to **jō*-stem nouns, *i*-umlaut blocking occurs here in both classical Old Frisian and post-classical Old West Frisian nouns when the root vowel is followed by *-hC*, e.g. PGM. **mahtiz* > *macht* ‘power’ [H2], [OOR40091 – 1491] or PGM. **slahtiz* > *slachta* [H2], [OOR10268 – 1476]. On the other hand, the cluster *-nC-* may have its blocking effect only in post-classical material, e.g. PGM. **fangiz* > OF *feng* ‘span’ [H2] vs. *fang* [OOR10217 – 1471]. Still, this may also be a dialectal contrast, Hoekstra-Tigchelaar (2014) mention that the Ems Old East Frisian manuscripts have a preference for <e>, the others rather <a> for Proto-Frisian **æ*. The corpus provides us also with instances such as *brake* [OOR20007 – 1402] in which *a* is a later development from *e* under the influence of neighbouring *r* (cf. ModWF *rak* ‘rack’, *farve* ‘paint’ (next to *rek*, *ferve* in other ModWF dialects). The analysis of the available material suggests that the operation of *i*-umlaut and palatalization of *k* are only visible in older texts: *breszie* [H2]. It can be said that forms with *i*-umlauted root vowels appear regularly in classical texts; the same conclusion cannot be drawn with regard to post-classical material. By way of illustration, the

corpus shows the classical OF form *nēd* < PGmc. **naudiz* ('need'; 'necessity'), and the post-classical: *nath* [OOR20004 – 1400], *noed* [OOR20215 – 1440] and *noden* [OOR20170 – 1489] indicating the tendency towards levelling of i-umlaut from the paradigm. Boutkan and Siebinga (2005, p. 278) suggest that *noed* may be a Middle Dutch borrowing with *noden* (*nōd*) being its further development.

Statistical tests revealed that the differences regarding the presence of i-umlauted vowels in the classical and the post-classical form of Old Frisian were statistically significant. Total number of tokens was 1031 (852 from classical and 179 from post-classical period). There were 836 tokens with i-umlauted vowels from classical and 161 from post-classical period. The Fisher exact test statistic value is < 0.00001. The result is significant at $p < .05$.

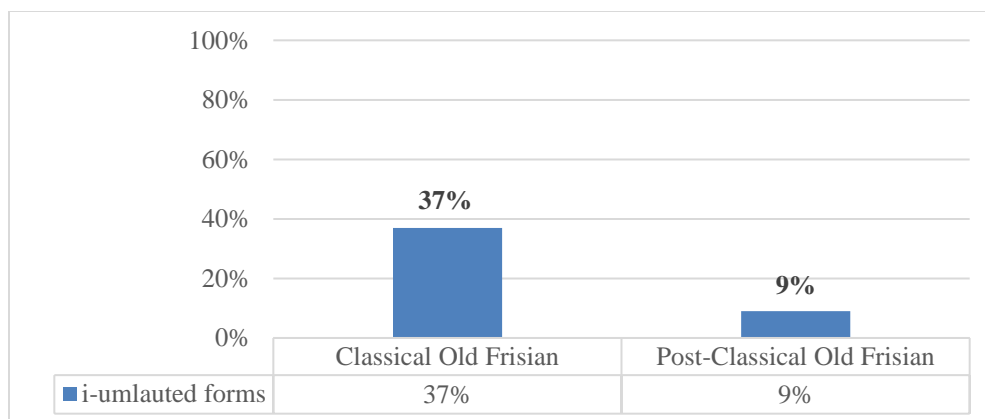
THE ANALYSIS AND RESULTS FOR *N-STEM NOUNS

Old Frisian **n*-stem (**-īn*-stem and **-on*-stem) nouns that should undergo i-umlaut consist of the feminine abstract nouns (with **-īn*- suffix in the West Germanic) that are formed on the basis of Proto Germanic adjectives (Bremmer, 2009, p. 63), e.g. PGmc. **braidin-* > OFris. *brede* 'breadth', and **-on*-stem nouns provided "the **on*- suffix is preceded by **/j/*" (Hogg and Fulck, 2011, p. 51). The corpus includes only 4 lemmas and 69 tokens (it needs to be stated here that part of the analysis (due to the scarcity of material) additionally includes the root vowels that are the result of PGmc. **e* raising – which, is an earlier, but comparable to i-umlaut process); still, the results of the analysis appear to be conclusive, as all the corpus material shows the consequent and systematic operation of i-umlaut with no traces of levelling. The presence of a strong mutation trigger - **-j-* and **-ī-* ensures the regularity of the process.

The analysis of the results does not take into account the noun *willa* 'wish, desire'. It belongs to the *n*-stem paradigm (Bremmer, 2009, p. 60), yet originates from PGmc. **weljan*. Interestingly, in this case we can observe a lack of uniform spelling in post-classical texts. Thus, we find phonological variants such as: *willa*, *wil*, *wella*, *walla*, *wolla* < PGmc. **weljan* 'will'. What is worth mentioning, however, is that the instances found in classical Old Frisian texts: [B1], [H2] and [R1] consistently use the form of the noun with *i* and the geminated consonant *l*: *willa*, which suggests both the operation of i-umlaut and gemination.

THE ANALYSIS AND RESULTS FOR *ROOT STEMS

The results of the corpus analysis with regard to Old Frisian *root* stems (mutation plurals) indicate that, in general, i-mutated forms are found next to the unmutated ones. Still, the most extensive regularity of the process can be observed in the classical form of the language.



GRAPH 4. Old Frisian mutation plurals

It can be postulated that, in this class of nouns, i-umlaut is restricted to classical Old Frisian, and the post-classical Old Frisian material indicates levelling of i-umlaut. The results of the analysis stand in agreement with Versloot’s and Adamczyk’s (2018, p. 34–36) observations that i-mutation was not a consistent marker of plurality here, and the class, itself, can be referred to as a hybrid class that “comprises both nouns which never showed a mutated vowel in the paradigm and others which displayed *i*-mutation more systematically” (Versloot and Adamczyk, 2018, p. 35). The authors indicate that the seemingly i-umlauted plural forms in North Frisian, such as *mīs* [mYs] ‘mice’ do not indicate the presence of historical i-mutation, but are due to a later general fronting of any Old Frisian *ī*. A non-mutated plural for this lemma is confirmed by the 15th century West Frisian *mus* ‘mouse’, supporting the idea that there were originally *i*-umlautless variants of plural root nouns in Old Frisian.

PGmc. nominative and accusative plural marker **-iz* should trigger i-mutation; nevertheless, the development of plural forms in this particular class of nouns is more complex. Following Hogg and Fulk (2011, p. 67), who remind that already in Pre-Old Frisian “in both sg. and pl. there is a merger [of accusative] with [the] nom[inative]”, it may be postulated that the umlautless plural forms arise from the PGmc. accusative with the ending **-unz*. Due to this, forms such as *fet* and *foten* ‘feet’ appear interchangeably. What is more, even if we assume that **-iz* was the PGmc. nominative and accusative plural marker, the impact of **-i* as a mutation factor must have been substantially weaker than i-umlaut triggers such as **ī* or **j* leading to the levelling of i-umlauted forms. The levelling could have also occurred due to analogy, as i-umlaut was an intraparadigmatic alternation here. It is also worth looking at the lexical items that constitute the basic lexicon and appear in a significant number in the corpus, e.g.

mon ‘man’. Here, the number of i-umlauted and umlautless forms can also result from analogy and the pervasiveness of the latter.

The test revealed that the differences regarding the presence of i-umlauted vowels in the classical and the post-classical forms of Old Frisian were statistically significant. Total number of tokens was 278 (193 from classical and 78 from post-classical period). There were 71 tokens with i-umlauted vowels from classical and 7 from post-classical period. The Fisher exact test statistic value is < 0.00001 . The result is significant at $p < .05$.

THE ANALYSIS AND RESULTS FOR *ND- AND *R-STEM NOUNS

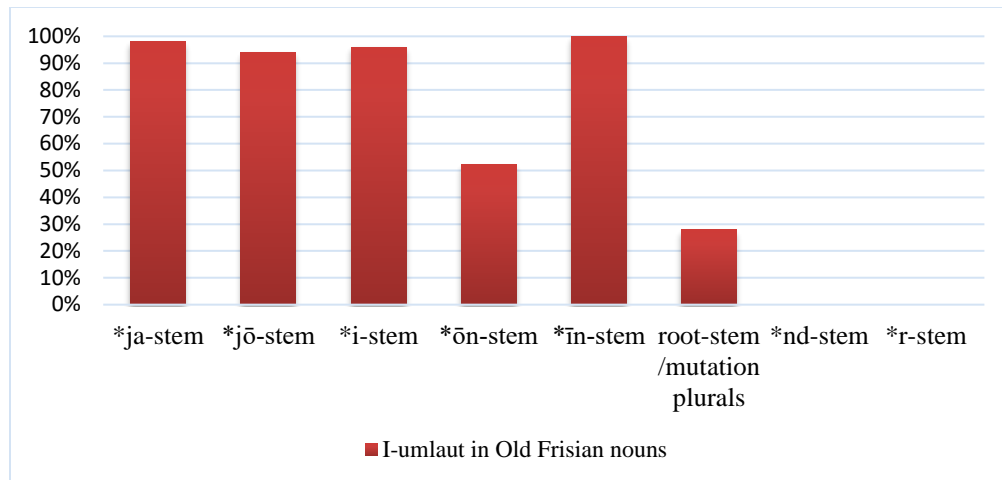
Old Frisian **nd*-stem nouns, as already mentioned, should have the root vowels i-umlauted in the singular genitive and dative as well as in the plural nominative and accusative. The declension patterns the nouns adopt are, however, analogical to other declensions, mostly *a*-stem nouns' declension leading to a complete levelling of i-umlaut from the class in both the classical and post-classical forms of the language. The analysis reveals two instances of **nd*-stem nouns: OF *fiand* 'fiend' (dat. sg. – 2 tokens / 2 types; nom./acc. pl – 5 tokens / 5 types), and *friund* 'friend' (dat. sg. – 7 tokens / 2 types; nom./acc. pl – 143 tokens / 16 types). All of them have umlautless root vowels. It may, most probably, be due to the combination of the 'weak' i-mutation factor of *-i* and the blocking context of *-nC* that the words *friund* and *fiand* do not show traces of *i*-mutation in Frisian (A. Versloot, personal communication, September 16, 2020).

As regards the group of **r*-stem nouns, i-mutated vowels have been levelled already in early Old Frisian, and the nouns analogically adopt the endings of *a*-stem nouns for masculine, or *ō*-stem nouns for feminine forms. As already mentioned, Siebs (1901, p. 1254, 1346) claims that the dative form *sister* 'sister' originating from the earlier **sustri-* with **-i-* indicates the operation of i-umlaut. The corpus used in the paper presents us with 4 instances of the word: *sister* once in [OOR10052 –1431] and twice in [OOR10216 – 1471], *suestre* [OOR10052 –1449], all of which come from the post-classical texts. Still, as the recorded number of the instances of Old Frisian **r*-stem nouns is limited, the category cannot be taken into account in the analysis of the process of the levelling of i-umlaut.

DISCUSSION OF FINDINGS

The analysis shows that the noun classes that earlier had **-ī* or **-j* as the i-umlaut trigger, retained the mutated vowel much more regularly than the classes in which the i-umlaut trigger was weak (**-i*) (Graph 5.). This was observable in both the classical and post-classical material. The preservation of i-umlauted vowels also depended on the scale of the process, whether it affected the whole paradigm or just certain grammatical cases. The root nouns serve as a good example, as the i-umlauted vowel can only be found here in the plural forms. Due to this, the intraparadigmatic levelling occurs to be more common than in other noun classes. The declension patterns are analogically changed, and the i-umlauted vowels are replaced. Yet another matter needs to be mentioned here, namely the blocking context. I-umlaut is often blocked by a cluster of consonants: a nasal + consonant (*nC*), a liquid + consonant (*lC*) or *h* +consonant (*cht*). Still, what is worth stressing is that the blocking power of the clusters is overruled by a strong i-umlaut trigger (**-i* or **-j*).

Statistical tests revealed that the differences regarding the presence of i-umlauted vowels in nouns from the classical and post-classical forms of Old Frisian were statistically significant. Total number of tokens was 2056 (1509 from classical and 547 from post-classical period). There were 1317 tokens with i-umlauted vowels from classical and 304 from post-classical period. The Fisher exact test statistic value is < 0.00001. The result is significant at $p < .05$.



GRAPH 5. I-umlaut in OF nouns

It is also noticeable that with time and the shift from the classical to the post-classical period, *i*-stem nouns, for instance, tend to turn to the umlautless declension patterns of *a*-stem and *ō*-stem nouns, without a wide-spread reversal of the stem vowel quality. I-umlaut paradigmatic levelling can in particular be observed in Old Frisian *roots* stems which frequently follow the strong *a*-declension. The diachronic character of Old Frisian material reveals the tendency of the languages to regularize its morphological patterns, which, in turn, leads to a later elimination of the i-umlaut, as in the case of **nd*-stem and **r*-stem nouns.

CONCLUSION

Having taken into account all the analysed data as well as various strings of developments of Old Frisian, it needs to be said that, despite general assumptions made by some scholars, i-umlauted vowels were present in both classical and post-classical Old Frisian. Still, there is no denying the fact that their occurrence was far less regular in the post-classical period. The extent of this also cannot be compared to the other West Germanic languages, e.g. Old English. I-umlaut has a smaller impact on the morphological patterns of the language in particular. Very often its operation can be observed in the earliest attestations, whereas in younger texts, it undergoes a paradigmatic levelling (Graphs 5.).

Eventually, it can be concluded that the presence or absence of i-mutated vowels very often signalizes the language's tendency to innovation and the regularisation of the morphological declension patterns in the nominal classes, and reveals the differentiation between the classical and post-classical period of the language's development. The statistical analysis made it possible to consider the sample a representative one, and regardless of the limitations, it offered a detailed account of i-umlaut and the dynamics of change between two stages of Old Frisian. There are also theoretical implications to be formulated. This study contributes to research on the diachronic character of i-umlaut in West Germanic and shows that understudied languages such as Old Frisian can shed some new light into the broader understanding of i-umlaut and its function in the declensional systems of the languages.

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