

# Mutual intelligibility between speakers of North and West Frisian

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## Abstract

This is a study of the mutual intelligibility between speakers of North and West Frisian: two minority languages with a shared ancestor language. The study looks at the intelligibility of auditory and written material and concludes that the mean degree of intelligibility between speakers of the two languages is 38%, which might be enough for basic communication, but is rather low compared to intelligibility levels between other closely related language pairs. The study indicates that a close genetic relationship between languages does not necessarily predict mutual intelligibility if the languages in question have been geographically separated and have undergone intense contact with different majority languages. The point in time at which the languages were separated, and developments since the separation, are better predictors for mutual intelligibility.

## 1. Introduction

Languages are generally deemed mutually intelligible if their speakers can communicate each using their own language. The degree of intelligibility, or speech recognition, depends largely on the number of cognate words that the two varieties in question share, but other linguistic factors can also influence intelligibility levels. Gooskens (2006), for example, found a high correlation between phonological distances, i.e. differences on the sound level rather than lexical differences, between Danish, Swedish and Norwegian and native listeners' intelligibility scores ( $r = .82$ ,  $p < 0.01$ ). Also, Gooskens, Van Bezooijen & Van Heuven (accepted) show effects of phonetic realisation, i.e. the realisation of the same sound in different phonological contexts, on differences for intelligibility. They tested the intelligibility of Dutch and German for German and Dutch children respectively and looked closely at the results for 16 Dutch-German cognate pairs. They found that the phonetic realisation of /r/ in cognate pairs such as German *Werk* and Dutch *werk* ('work') or German *Art* and Dutch *aard* ('nature') can be problematic for successful intelligibility. German /r/ is generally deleted in the phonological contexts above whilst the Dutch realisation is often a weak approximant. This causes problems for Germans trying to recognise Dutch words with word-medial /r/ and for Dutch listeners trying to recognise German words with word-final /r/, such as

German *Jahr* ('year'), which is phonetically close to the Dutch word *ja* ('yes').

Extra-linguistic factors such as language contact and attitudes have also been shown to influence the degree of intelligibility between speakers of closely related languages. Bø (1978), for example, found that Norwegian, Danish and Swedish participants living in border regions were more able to understand neighbouring languages than participants living outside border regions. This finding was explained by the high degree of contact that people have with neighbouring languages in border regions. An example of a study that has found a significant relationship between attitudes and intelligibility is Kuhlemeier, Van den Berg & Melse (1996). They found that Dutch secondary school pupils in the first year of a German course understood German better when they held a positive attitude than when they held a negative attitude towards the German language at the beginning and the end of the school year.

Several research projects on the mutual intelligibility of languages in Europe have been carried out (see Gooskens (2011) for a short synthesis). Most of this work has been conducted on intelligibility between speakers of national majority languages, and a considerable amount on mutual intelligibility between Germanic languages, such as the Scandinavian languages, or Dutch and German. There is, however, also general agreement that certain Romance, Finno-Ugric and Slavic languages are mutually intelligible with varieties belonging to the same language families (cf. Haugen 1966a). There is thus an obvious link between the genetic relatedness of languages and their potential for being mutually intelligible to their speakers. Accordingly, whether varieties within the same language family are mutually intelligible (even after geographic separation) is one of the points considered by those wishing to undertake the problematic action of distinguishing dialects from languages (cf. Noonan 2010). One could imagine that the more mutual intelligibility there is between varieties, the more likely they are to be labelled as belonging to the same language.

The current article analyses the role that contact with other varieties has on the intelligibility between two languages that are related but that have been geographically separated. This question was addressed to some extent by Van Bezooijen & Gooskens (2005), who measured Netherlandic Dutch speakers' intelligibility of spoken and written Afrikaans (as well as of West Frisian). Afrikaans is a variety descended from Dutch but spoken in South Africa from the 17th century onwards (Roberge 1995). Van Bezooijen & Gooskens' (2005) data shows that 59-66% of Afrikaans is

deciphered correctly by Dutch informants although between 84-100% of the words used in the texts were cognates. Phonetic effects and phonological neighbouring density, i.e. the number of words that are phonologically similar, are factors that influence the intelligibility in the Dutch-Afrikaans case (Van Bezooijen & Gooskens 2005).

The aim of this current article is to examine the intelligibility between two varieties that, just as Afrikaans and Dutch, have been geographically separated. The two language groups we focus on are, however, minority languages that have been geographically separated many centuries before Dutch and Afrikaans were, and that find themselves in intense language contact situations with two different majority languages. We examine here the mutual intelligibility between North and West Frisian.

## 2. North and West Frisian

As shown in Figure 1, the Frisian language family consists of three languages: (1) North Frisian, spoken by about 8.000-10.000 speakers in the Northern part of Germany, close to the Danish border (Landesregierung Schleswig-Holstein 2013), (2) Saterfrisian, the only surviving East-Frisian dialect, spoken by about 1000-2000 speakers in the area of Saterfriesland, in the western part of Germany (Stellmacher 1998) and (3) West Frisian, spoken by about 400.000 speakers in the province of Friesland in the north-western part of the Netherlands (Gorter 2001).

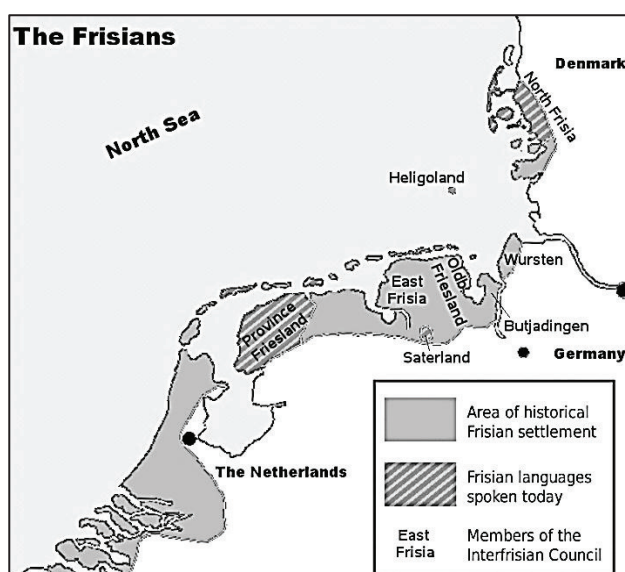


Figure 1: The three Frisian languages. Source: WikiMedia

The Frisians originally lived at the southern coast of the North Sea in what are today The Netherlands. The Frisians later won territory in the western part of Germany, now known as Ostfriesland. Subsequently, two waves of Frisian emigrants went to the eastern coast of the North Sea (Århammar 2000), that today is known as North Friesland (c.f. Figure 1).

It is generally claimed that the Frisian languages are not mutually intelligible. Hemminga (1999: 81) for example says: 'For a common speaker of one of the Frisian variants the three languages are too dissimilar to understand the other variants.' However, there is no empirical evidence that confirms the lack of intelligibility, and with a shared ancestor language there is a possibility that the degree of intelligibility between the varieties is higher than is commonly assumed. We investigate the mutual intelligibility between North and West Frisian here. Saterfrisian is excluded from the investigation.

### *2.1 North Frisian*

There is no real consensus in the literature about the origin of North Frisian. Some researchers claim that the first wave of settlement of Frisians that emigrated from the Dutch North-Western coastal side or the area between the rivers Ems and Weser into North Friesland occurred in the 8th and 9th century (c.f. Århammar 2000). The second wave of settlement, which arrived in North Friesland in the 11<sup>th</sup> century, possibly emigrated from the area between the Ems and Weser. Other sources claim that there is no exact knowledge about the settlement of the North Frisians, but that it can be assumed that they emigrated in two waves from the area between the current Dutch province Noord-Holland and the Weser to North Friesland (Steensen 2010).

The first group of emigrants most likely settled on the North Frisian islands. During that time the area of North Friesland was under the domination of the Danish king (Århammar 2000). In the 11th and 12th century, the second group of Frisian emigrants entered North Friesland and settled on the mainland. They probably came to North Friesland to work for the Danish king and impolder land on the coast of the North Sea (Jonkman & Versloot 2008). Because the two groups emigrated at different points in time and settled in different parts of North Friesland, two groups of North Frisian dialects developed; the island dialects and the mainland dialects (Hofmann 1956).

North Frisians have never had their own state in the modern sense of the word (Walker 1996) and have predominantly been under regulation

of larger empires. This has had rather a strong influence on the Frisian languages (Århammar 2000). The North Frisian-speaking territories have been under domination of other empires for the last centuries. The largest part of North Friesland was part of Denmark until 1864. After that, North Friesland became part of Prussia and later of Germany (Århammar 2000). There has never been much contact among speakers of different North Frisian dialects. As a result of this, the North Frisian dialects have undergone linguistic divergence (Jonkman & Versloot 2008). Some therefore claim that many North Frisian dialects are no longer mutually intelligible (e.g. Jonkman & Versloot 2008). Others claim that speakers of a few dialects are able to understand each other to a certain extent (e. g. Walker 2001). In the current investigation the intelligibility among North Frisian varieties will not be examined, we will rather choose one variety as representative for the whole language area. The extent of linguistic divergence of the North Frisian varieties and its effect on mutual intelligibility is something that future work should look at in more detail, however.

Although the North Frisians were under regulation of Denmark until 1864, Low German (and Middle Low German in the Dark Ages) has been the most important language of communication between the North Frisians (Jonkman & Versloot 2008). The contact between North Frisian and Danish, mostly the Southern Danish dialects spoken in the German-Danish border area, has also been substantial, however (Århammar 2001). There has also been some contact between Dutch and North Frisian. In the 17th century, the Netherlands experienced their golden age, where the Dutch shipping and trade industry grew rapidly. A number of North Frisians started to work on Dutch ships and thus learned Dutch. This contact ended after the 18th century, when the golden age came to an end (Menke 1997). The contact between North Frisian and High German has been consequential. High German has been the traditional language of official registration, education and church-going in North Friesland (Århammar 2010). This means that for centuries North Frisians have used Low German as a *lingua franca* and High German as the language in which official communication takes place (Århammar 2010). North Frisian has primarily been kept to the home domains, used with family and friends (Jonkman & Versloot 2008). During the last century the position of North Frisian has further declined. Because of the growing tourism in North Friesland High German has come to play an even more important role (Århammar 2010).

Today, North Frisian is an official minority language in Germany. The estimates of speakers of North Frisian are low, and lie around 10,000

people. These speakers are distributed across the mainland and insular north-west of Germany (Walker 2001).

North Frisian is not officially codified. The language is taught in most primary schools in North Friesland (an area formed by three former districts of Schleswig Holstein). Although the position of North Frisian in education has improved over the years it remains weaker than that of West Frisian; North Frisian varieties are mostly only taught for one or two hours a week and on a voluntary basis. This, in turn, complicates the acquisition of the varieties for new generations. Furthermore, there is a lack of qualified teachers of North Frisian and a lack of good instruction material for the language (Walker 2001). North Frisian can be studied at two universities in Germany: The University of Kiel and the University of Flensburg. There is the Nordfriisk Instituut, a scientific institution that is concerned with research about North Friesland and the North Frisian dialects. The Nordfriisk Instituut publishes the magazine Nordfriesland with articles about North Frisian culture, politics, economy and books (Nordfriisk Instituut 2012). The NDR (Norddeutscher Rundfunk) broadcasts radio three minutes a week in North Frisian, on Wednesday evenings. There are also a few North Frisian radio channels that can be heard through the internet and on the North Frisian island Föhr there is the radio channel Friisk Funk, which broadcasts in North Frisian (Friisk Funk 2012). There are a few newspapers that dedicate one page a month to articles written in North Frisian and some magazines publish articles in the variety (Walker 2001).

## 2.2 *West Frisian*

West Frisian has been under the influence of Dutch since the end of the 15<sup>th</sup> century. From about that time, Dutch increasingly became the language of administration (Vries 1993) while Frisian developed into more of an oral language (Ytsma, Riemersma & De Jong 2007). The West-Frisian speaking territory, Friesland, is currently part of the Netherlands. West Frisian today is in an intense contact situation with Dutch, resulting in heavy lexical borrowing from the majority language to the minority language (e.g. De Haan 2010: 280). This process of ‘dutchification’, as Gorter and Ytsma (1988) call it, is still largely ongoing. Most speakers of West Frisian have (near-)native proficiency in Dutch, which facilitates the borrowing process from Dutch into West-Frisian (Breuker 2001). A number of phonologically integrated loans from Dutch exist in modern West Frisian and many lexemes have a ‘frisianised’ Dutch counterpart. This is the case

for the word ‘bad’, for instance. The West Frisian word for ‘bad’ is *slim*, but *erch*, the frisianised form of the Dutch word *erg* is widely used in West Frisian (Breuker 2001).

The position of West Frisian in the Netherlands is stronger than the position of North Frisian in Germany. West Frisian has been the official second language of the Netherlands since 1970 (Commissie Friese Taalpolitiek 1970) and according to the most recent language competence survey (Provincie Fryslân 2011) 95% of the people living in Friesland are able to understand spoken Frisian to a certain extent. Only 5% claim to not understand Frisian or to understand very little of Frisian. About 64% of the inhabitants of Friesland speak Frisian well, or very well. This comes down to approximately 410,000 of the almost 650,000 people that live in the province of Friesland (CBS 2012).

Arguably one reason for the stronger status of West Frisian than that of North Frisian is its standardisation and position in the Dutch educational system. Within the province of Friesland it is obligatory to teach West Frisian in primary school. 20% of the primary schools in Friesland are bilingual and use West Frisian next to Dutch as a medium of instruction (Gorter 2005). There are also approximately 48 trilingual primary schools<sup>1</sup> in Friesland in 2012 teaching in Frisian, Dutch and English. It is obligatory to teach Frisian as a subject in the first two years of secondary school. However, there is no minimum number of hours that Frisian should be taught, so it depends on the secondary school how many hours the students are actually taught the language.

The status of West Frisian is further strengthened by its position in the court system. There is also a West Frisian broadcasting network, Omrop Fryslân, broadcasting radio and television in West Frisian, whereas two newspapers publish partly in the language.

Finally, the West Frisian language has a position in academia with a full degree programme at the University of Groningen and its own research institute, the Fryske Akademy, in Leeuwarden, the capital of Friesland (Gorter 2001). At Noordelijke Hogeschool in Leeuwarden people can be educated to become Frisian secondary school teachers, and Stenden Hogeschool educates primary school teachers for the trilingual primary schools in Friesland.

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<sup>1</sup> We thank Jelle Bangma from CEDIN for the information about the current number of trilingual primary schools in Friesland.

### 3. The aim of this paper

The current paper has an aim that is twofold. Firstly we want to empirically determine to which degree North and West Frisian are mutually intelligible. Secondly, we want to investigate to which extent mutual intelligibility can be seen as a reflection of genetic relatedness of languages.

To test the intelligibility among speakers of North and West Frisian, an experiment measuring listening and reading intelligibility between the two language areas West and North Frisian was conducted in the spring of 2012. We tested written as well as auditory intelligibility both at text and at word level.

### 4. Research design

#### 4.1. Intelligibility on the text level (*Spoken and Written Cloze Tests*)

In order to test the intelligibility at text level, two cloze tests were developed. Normally, in a written cloze test, participants are confronted with a text in which a number of words are deleted. The participants' job is to fill in the gaps either by selecting words that are presented above the text or by filling in a word they have to come up with themselves. (O'Toole & King 2011). In our tests the target words were presented above the text, and the participants could fill the gaps in the text by choosing one of those words.

The cloze test is primarily used as a method to measure the comprehension of written language. In our investigation, however, the intelligibility of written language is compared to the intelligibility of spoken language. To keep the methods for measuring intelligibility of both kinds of language the same, an auditory version of the cloze test was developed. This was done by cutting and removing target words from sound recordings. A silent interval of 500 ms preceding and following the resulting gap was added before a 500 ms long beep was inserted into the gap. All gaps in the recording were 1.5 second long.

Four texts originally created for the Cambridge ESOL Preliminary English Test (PET 2012)<sup>2</sup> were translated into Dutch and German for the project *Mutual Intelligibility of Closely Related Languages in Europe: Linguistic and Extra-Linguistic Determinants* (Gooskens 2011) and were employed for

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<sup>2</sup> The Cambridge ESOL Preliminary English Test is used to test the level of English of non-native speakers of English (PET 2012).



our experiment. Two translators subsequently rendered the texts into West Frisian from Dutch and North Frisian from German respectively.

For the written cloze test we encountered the problem that North Frisian has no accepted standard. We decided to use the written form of the Mooringer dialect for our experiment, as this dialect is reported to be the most used as a written form of North Frisian (Jonkman & Versloot 2008). There are also a number of dictionaries available for the Mooringer dialect (cf. Hamann 2000, Kellner 1991, Sjölin, Walker & Wilts 1988).

The four texts were all around 200 words in length. Their topics were ‘catching a cold’ and ‘driving in winter’ (used for the written cloze test); ‘riding a bike’ and ‘child athletes’ (used for the auditory cloze test). Twelve content words were taken out of the text, four adjectives, four nouns and four verbs. These target words were presented in writing for both the written and the auditory cloze test. Furthermore, all target words were presented in the participants’ home language as well as in the test language. This was done as the aim of the task was primarily to test text intelligibility as opposed to word intelligibility. Therefore, it was not important that the participants were able to translate the target words presented above the text from the test language into their own language, but rather that they understood what the text was about and could place the right word into the right context. By providing the target words in the participants’ native language in addition to the test language, the risk that the participants put a wrong word into a gap while they understood what the text was about but just were not able to translate the word from the test language into their own language could be avoided.

#### 4.2 *The word translation task*

In order to measure the intelligibility of isolated words, we developed an auditory and written word-translation task. We used the same word list as employed by the project *Mutual Intelligibility of Closely Related Languages in Europe* (cf. Gooskens 2011). The list contains the 100 most frequent English nouns from the British National Corpus. These words were translated into North and West Frisian by native speakers (cf. Section 4.3). For both word lists we calculated the number of non-cognates, i.e. words that do not share the same etymology. We did that reciprocally, which means that we first took the list with North Frisian stimulus words and looked at all possible West Frisian cognates. For the words which the West Frisian translator translated into a non-cognate, we checked in dictionaries whether there was a cognate. For example ‘man’ was translated by the

translators into North Frisian *kjarl* and West Frisian *man*, which are non-cognates. However, in West Frisian there is a word *kearel* which also means ‘man’. Therefore, *kearel* was added as a West Frisian cognate with the North Frisian word *kjarl*. The same was done the other way around, taking the West-Frisian list as stimulus words and trying to find as many cognates as possible. After this procedure, there were 16 non-cognates in the North Frisian stimulus word list for West Frisians and 19 non-cognates in the West Frisian stimulus word for North Frisians. A z-test showed that this difference is not significant. In our task half of the words are used for the auditory part and the other half for the written part of the task.



Figure 2: Map indicating the Risum-Lindholm area (black). Source: Wikimedia

#### 4.3 Recordings and translations of the tasks

The North Frisian translator of the cloze test and word list was a 68-year-old woman, a former teacher of North Frisian. She lives in Niebüll, a town in the municipality of Niebüll (cf. Figure 2) and speaks one of the mainland North Frisian dialects; Mooringer Frisian. The North Frisian translator translated the words from German into North Frisian. After translating, the same informant recorded the auditory stimuli for the word list and spoken cloze test. The individual words that were given to the translator were put in a context sentence to ensure consistency in translation across the two languages. The word ‘line’ was for example presented in the following context sentence:

German: *Er zeichnet eine dünne **Linie***

Dutch: *Hij tekent een dunne **lijn***<sup>3</sup>

<sup>3</sup> Translation in English: *He draws a thin line.*

The German word *Linie* and the Dutch word *lijn* (line) were translated into the North and West German word for ‘line’ respectively in such a way that the word fitted into the context sentence.

The West Frisian texts and word list were translated from Dutch into West Frisian by a 53-year-old female employee of the Fryske Akademy.<sup>4</sup> Again, the individual words that were given to the translator were put in a context sentence to ensure consistency in translation across the two languages. The auditory stimuli were subsequently recorded by a 62-year-old female from Stiens, a village close to the capital of Friesland, Leeuwarden, in the Klaaifrysk area (cf. Figure 3), one of the three larger Frisian dialect areas. The speaker, however, was asked to record the auditory cloze test in as Standard West Frisian as possible, not in the Klaaifrysk dialect.



Figure 3: Map indicating Stiens situated in the municipality of Leeuwarderadeel (dark gray). Source: Wikimedia

#### 4.4 Testing the level of Frisian

Since both North and West Frisian are under the heavy influence of majority languages (German and Dutch respectively), we had to make sure our participants were actually proficient in their Frisian variety. To test this we created two word translation tasks, one for each minority language. Both tasks contained twenty words that the North or West Frisian participants had to translate from German or Dutch respectively. None of the words in the task were close cognates to the target translations. The mean score of correct answers of all the participants that were taken into account in the analyses is 90% ( $SD = 9.8$ ) for this task.

<sup>4</sup> The Fryske Akademy is a research institute that is concerned with the West Frisian language. It is located in Leeuwarden, the capital of the province of Friesland.

#### 4.5 Subjects

In total, 33 North Frisians and 27 West Frisians participated in the experiment. They were found through contacts of the researchers. No age or education boundaries were set for the selection of the participants. The informants were later matched on age and education criteria to ensure that the two groups of informants were comparable. A further criterion for taking part in the experiment (the auditory part) was that informants did not have any hearing problems.

All but one North Frisian subject spoke the Mooringer dialect, the same dialect as the North Frisian speaker and translator spoke. Because one North Frisian participant was a speaker of the Fering dialect, she was excluded from the analysis. Yet another North Frisian participant was later excluded from the analysis because she had studied West Frisian and hence had had more contact with West Frisian than the rest of the North Frisian informants.

Only 20 of the 33 North Frisian informants and 20 of the 27 West Frisian informants were eventually included for the analysis of this investigation. This selection was done to ensure that our two informant groups did not perform differently due to age or educational background.

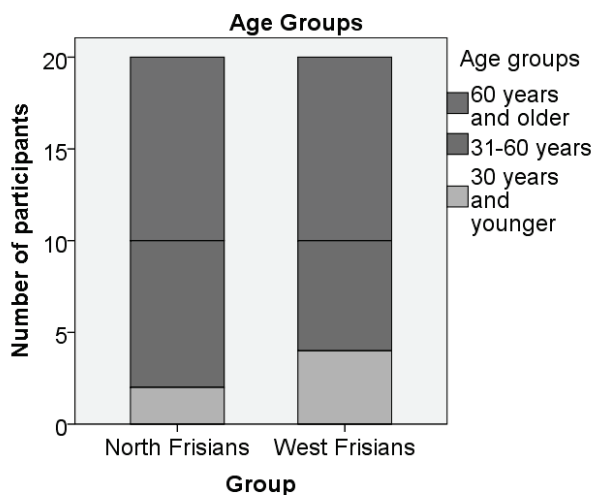


Figure 4: The number of participants per age group

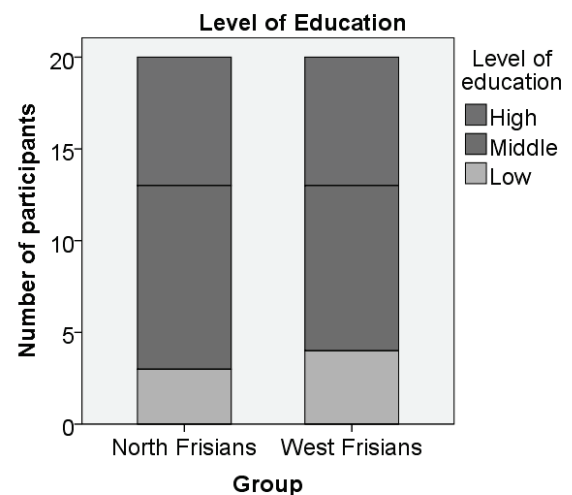


Figure 5: The number of participants by education level

In both the North and West Frisian group 11 women and 9 men participated. As can be seen from Figure 4 and 5, ten participants in both groups were older than 60. 7 North and 6 West Frisian participants were between 31 and 60 years old. Only a few participants were younger than 30: 3 of the

North and 4 of the West Frisian participants. In both groups, 7 participants had a higher level of education (master's or bachelor degrees). 10 North and 9 West Frisians had a medium level of education (vocational school). Finally, 3 North and 4 West Frisians had a lower level of education.

#### *4.6 Experiment: Procedure*

Since many of our subjects were without internet access, the experiment was conducted with pen and paper. The participants were tested individually, or in small groups. The auditory parts were played on a CD-player. In order to rule out a learning effect and the risk that participants would get tired after making several tests, there were two versions of the experiment, version A and B.

In the West Frisian group 10 of the participants completed version A and 10 participants completed version B. Due to the matching of the North Frisian participants to the West Frisian participants after the experiment was completed, version A and B are not equally represented in the North Frisian group; 14 North Frisian participants completed Version A of the experiment while the remaining 6 completed version B.

Both versions of the experiment start with questions about the informants' background, their self-reported proficiency in Frisian and the home language word translation task. After this some questions about attitudes towards the other language and how well the informants think they can understand the other language follow. Version A starts with the auditory word translation task, followed by the auditory cloze test, followed by the written word translation task, and, finally, comes the written cloze test. Version B starts with the auditory cloze test, followed by the auditory word translation task<sup>5</sup>, followed by the written word translation task, followed by the written cloze test. Both version A and B finish with a second identical attitude and opinion test. In Version A, we used the text 'riding a bike' for the auditory cloze test and the text 'driving in winter' for the written cloze test. The A version also used the first half of the word list for the written word translation task and the second half of the word list for the spoken word translation task. In Version B we used the text 'child

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<sup>5</sup> Both versions start with the auditory tests, because of organisational matters. Since part of the participants was tested in small groups and all of those participants had to listen to the auditory part, it was more convenient to let them listen to the auditory parts together and let them finish the written parts thereafter at their own pace.

athletes' for the spoken cloze test and the text 'catching a cold' for the written cloze test, whereas the pattern for the word list was opposite to that of A. The questionnaires were presented in the majority languages of both areas, i.e. in German for the North Frisians and in Dutch for the West Frisians.

Although there were no significant differences between the North Frisian participants completing version A and the North Frisian participants completing version B of the experiment, there was a difference between the West-Frisian informants completing versions A and B. The West Frisian participants who completed version A ( $M = 39.3$ ,  $SD = 11.7$ ) did worse than the participants who completed version B ( $M = 54.8$ ,  $SD = 10.2$ ) ( $p < 0.05$ ). We think the explanation for this difference can be found in the level of education of the participants. Of the group of West Frisians who completed version A of the experiment only 20% had a high level of education. In the group of West Frisians who completed version B, however, the proportion of participants that had a higher level of education was 50%. A high education goes hand in hand with higher literacy skills and longer experience with foreign language learning, both of these could be factors that influence ability to successfully decipher closely related languages. Since the participants are equally distributed in terms of age and level of education across the entire North and West Frisian group (c.f. Section 4.5) we do not consider the different scores between the West Frisian A and B group to be problematic.

#### 4.7 Experiment: Scoring of the data

The results of the cloze test were based on the number of words that the participants placed in the right gap. Words that were put in the wrong gap received zero points. Responses in the cloze test that did not make perfect sense, but that were still semantically possible received 0.5 points. In the text 'driving in winter', for example, the following sentence contained one of the gaps: 'Ice might be hiding beneath the \_\_\_\_\_ snow', the target answer in the task is *melting*. However, some participants would place *icy*, another target word that was presented above the text, in the gap. This was not an entirely incorrect answer, and would thus be awarded 0.5 points.

The results of the word translation task were based on the number of correctly translated words. We gave one point for correct translations and zero points for incorrect translations. There were also instances of almost correctly translated words, which got 0.5 points. This was done for words

that were translated into the plural form instead of the singular form (e.g. Nord Frisian *frååge*, ‘question’, was translated into Dutch *vragen*, ‘questions’) or words that were translated into the equivalent belonging to a different word class (e.g. West Frisian *stúdzje* ‘study’, a noun, was translated into German *studieren*, ‘to study’, a verb).

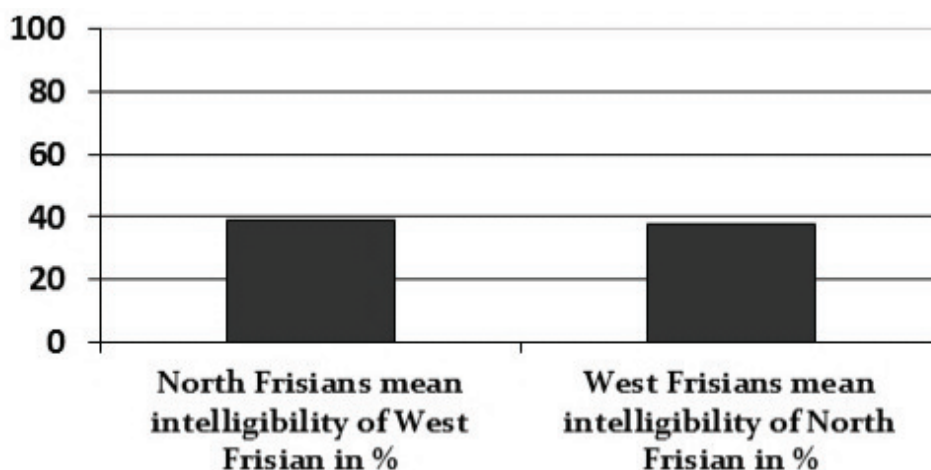


Figure 6: Average intelligibility scores between North and West Frisian – all tests

## 5. Results

### 5.1 Overall scores

To give a comprehensive view of intelligibility we first present the scores from the four different intelligibility tests described above as one. All tests represent relevant aspects of intelligibility of a different linguistic variety and will also be described individually below. Figure 6 illustrates the overall average intelligibility scores between North and West Frisian, taking the auditory cloze test, the written cloze test, the auditory word translation task and the written word translation task together. As the figure shows, the North Frisians completed 38.8% ( $SD = 10.3$ ) of the entire experiment correctly, while the West Frisians completed 37.9% ( $SD = 10.8$ ) correctly. A *t*-test showed that this difference was not significant. As for the written part of the experiment, the North Frisians completed 41.5% ( $SD = 12.1$ ) of the test correctly, and the West Frisians 43.1% of the test correctly ( $SD = 13.8$ ). A *t*-test shows that this difference was not significant either. The overall scores for the auditory part of the experiment were lower. The North Frisians completed 36.2% correctly ( $SD = 11.2$ ) and the West Frisians completed 32.8% correctly ( $SD = 9.1$ ). This difference was not significant. The results show that both groups performed better in the written than in

the auditory part of the experiment. The difference in scores for the written and auditory part of the experiment was significant for both groups (North Frisians:  $F(1) = 4.9$ ,  $p < .05$ , West Frisians:  $F(1) = 25.1$ ,  $p < .001$ ).

### 5.2 Intelligibility results broken down

Table 1 shows the intelligibility results broken down by task. On average, the North Frisians completed 19.3% ( $SD = 18.4$ ) of the cloze tests correctly. The West Frisians had a higher mean at 24.3 ( $SD = 22.6$ ) but the difference between the two groups is not significant. Interestingly, an analysis of variance (ANOVA) shows that the difference between North Frisians' spoken cloze test and written cloze test scores are not significant, while for the West Frisians the difference in scores is ( $F(1) = 10$ ,  $p < 0.05$ ).

Table 1: Mean percentage of correct answers ( $SD$ ) in different parts of the intelligibility experiment

	Spoken Cloze	Written Cloze	Spoken Word	Written Word
North Frisian Subjects	20.0% ( $SD = 19.0$ )	18.5% ( $SD = 21.6$ )	40.1%, ( $SD = 10.2$ )	47% ( $SD = 12.1$ )
West Frisian Subjects	17.3% ( $SD = 16.9$ )	31.3% ( $SD = 30.6$ )	36.5%, ( $SD = 8.4$ )	45.9% ( $SD = 11.4$ )

When it comes to the word translation tasks the North Frisians translated 43.5% ( $SD = 9.6$ ) of the words correctly on average, while 41.2% ( $SD = 8.5$ ) of the words were translated correctly by the West Frisians. None of the differences between the groups as portrayed in Table 1 are significant. Both groups performed worse on the spoken word than on the written word translation task, however (North Frisians:  $F(1) = 7.4$ ,  $p < .05$ , West Frisians:  $F(1) = 15.6$ ,  $p < .05$ ).

Certain words were more recognizable to the listeners than others; among them were non-cognates that did have cognates in German. An example of this includes the North Frisian word *biispiel* ('example') that has a German equivalent *Beispiel*. West Frisian listeners often decoded this word correctly despite the West Frisian equivalent being *foarbyld* and the Dutch word being *voorbeeld*. This correct decoding is likely due to the fact that some West Frisian speakers are proficient in German, the language is,



## 6. Discussion

North and West Frisian are generally claimed to not be mutually intelligible, and the results we have presented in this paper partly support this claim. The extent of intelligibility in our experimental setting never surpasses a mean percentage of 47% of successful recognition. This does probably not mean, however, that communication between speakers of these languages would be completely impossible. North Frisians, on average, understood 38.8% of West Frisian and West Frisians 37.9% of North Frisian. Furthermore, the intelligibility of written language is significantly higher than the intelligibility of spoken language for both groups. This means there could be hope for successful communication, as the percentage of correct answers would have been at chance level for the cloze test and 0% in the word translation task if there was no intelligibility at all. An interesting question for future research might therefore be to ask how much intelligibility is enough for different communicative purposes. Intelligibility is a relative term: if the purpose of communication is to merely ask directions to the pub or to find the nearest bank, intelligibility of 40% of the input might be enough to get you there. We would like to see more work problematizing the relativity of intelligibility in the future to put our results into context.

Furthermore, we found that both the North and West Frisians had a higher mean on our written than on our spoken tests. What is striking is that this difference is only significant for the West Frisians. A possible explanation for this could be the fact that West Frisians are more used to reading their native language than North Frisians are. West Frisian is codified while North Frisian is not, and it is fairly common to see West Frisian in print within the areas that Frisian is also spoken. The ability to read one Frisian variety may thus influence comprehension of another positively.

Another approach to establishing to which extent communication between North and West Frisian speakers would be successful is to compare scores with intelligibility rates from other language pairs where cross-linguistic communication is reported to take place. Some of these pairs can be found in Scandinavia. Although none of the previous investigations looking at mutual intelligibility between Norwegian, Swedish and Danish use an identical methodology to ours, it is clear that Scandinavian subjects generally score slightly better than our Frisian subjects when it comes to understanding closely related languages. Delsing & Lundin Åkesson (2005) show auditory intelligibility scores among adolescents in Scandinavia to be between 20-70%, but with written comprehension scores all above 55%

which is higher than the Frisian scores. The mutual intelligibility between Scandinavian languages is facilitated by a large amount of shared vocabulary (Kürschner, Gooskens & Van Bezooijen 2008), and made problematic predominantly by phonological factors (Hilton, Schüppert & Gooskens 2011). As we know, the Frisian varieties have both undergone centuries of intense language contact, West Frisian with Dutch and North Frisian with Danish and German varieties. The borrowing of lexical items is something that happens even during situations of infrequent contact between varieties. We therefore hypothesise that the causes of lower levels of intelligibility between the Frisian varieties may lie in the amount of linguistic influences from contact with Dutch in the West Frisian case and Danish and Low German in the North Frisian case. A complete comparison between the Scandinavian data and our North and West Frisian data is not yet possible. However, in the scope of the project *Mutual intelligibility of closely related languages in Europe: linguistic and extra-linguistic determinants*, from which the investigation presented in this article is a part of, the same tests used in this article will be employed to test intelligibility also between speakers of the Scandinavian languages. By then more accurate comparisons between the language pairs will be possible.

Finally, we want to compare our outcomes with those of Van Bezooijen & Gooskens (2005) who looked at the intelligibility of Afrikaans by Dutch informants. Afrikaans and Dutch, like North and West Frisian, originate from the same ancestor language but have developed geographically separately for the last centuries. Van Bezooijen & Gooskens (2005) used a written cloze test as their task and report an intelligibility of 81.8% of written Afrikaans for Dutch informants. This intelligibility score is about twice to four times as high as what we found between our two Frisian groups in the results of the written cloze test. One explanation why the Frisian intelligibility scores are so much lower might have to do with the time span of the separation in the current case and the amount of language contact the Frisian varieties have had with other languages. The North Frisian Mooring dialect we used in our experiment arose in the 11<sup>th</sup> century, while Dutch settlers did not reach South Africa until the 17<sup>th</sup> century. Besides, Dutch was the official language of administration in South Africa until the beginning of the 19<sup>th</sup> century. North and West Frisian on the other hand are both minority languages which had intensive contact with other languages from the moment they separated. This might indicate that a close genetic relationship between two languages does not necessarily give information about the degree of mutual intelligibility. Rather, the point in

time when the languages separated might be an indicator for the degree of mutual intelligibility between such languages.

Another, in our eyes important, factor that can contribute to the difference in intelligibility scores between Van Bezooijen & Gooskens (2005) and ours is that Dutch and Afrikaans have enjoyed statuses as national languages, and have a speech community with a clear acceptance of their language standards (cf. Haugen 1966b: 933). According to Haugen, a language only is an official language when the language has been selected, codified, accepted and elaborated by its users. This is the case for Dutch and Afrikaans that undergo all levels of standardisation helped by the fact that the languages are taught extensively in schools. Breuker (1993: 277) claims that the standardisation process for West Frisian is incomplete. According to him, speakers of West Frisian have not entirely accepted their standard because it is still unclear which varieties belong to this entity. Only about 12% of West Frisian speakers claim to write their native language (Provincie Fryslân 2011). Similarly most North Frisian speakers only have a limited relationship to their own written language, as no standard has been codified (and hence no acceptance can occur either). North and West Frisians alike therefore have a limited relationship to their native written varieties, let alone to the written variety of the other group.

This literacy-deficiency in the native language is likely, in our opinion, to at least influence the written comprehension also of related languages. One further suggestion for future studies of intelligibility is therefore to take into consideration informants' literacy skills and test to which extent these are predictive of the ability to successfully recognise speech. By considering more such extra-linguistic factors we may attain a deeper understanding of mutual intelligibility between closely related languages.

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## Notes

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