

# RURAL AND NON-RURAL VARIATION BETWEEN [U] AND [Y] IN THE ACHTERHOEKS DIALECT

## *Abstract*

The Achterhoek region is found in the eastern Netherlands, bordering Germany. The dialect of the region, Achterhoeks, is a Low Saxon dialect spoken amongst many inhabitants of the region. It differs markedly from Standard Dutch in its phonology, grammar and lexicon. Lexical differences observed from town to town are common (cf. Schaars, 1984-; Van Prooije, 2011), however there have been fewer studies on specific pronunciation differences.

This research considers the pronunciation of the monophthongs [y] and [u] in the Achterhoek region, which typically correspond to [œy] in the Standard Dutch phonological system. Previous studies (eg. Kloeke, 1927; Van Reenen, 2005; 2006) have shown a variable use of [y] and [u] in this area of the Netherlands. However, this research follows on from previous studies by considering the links between rural and non-rural pronunciation. Variations in the position of the vowel following rhotics were observed in 34 Achterhoeks speakers. Grouped into age, gender, and location, and measured through normalised formant frequencies, the more retracted vowel [u] was observed in rural speakers, whereas the fronted vowel [y] was seen in non-rural speakers. Where the vowel appeared in any position other than following the rhotic consonant, it was realised as [y], without any observable differences between speakers.

## *1. Introduction*

Achterhoeks is a Low Saxon dialect spoken in the east of the Dutch province Gelderland, located on the border with Germany. To the north lies the province of Overijssel, to the south-west the Liemers dialect region, and to the west the Veluws dialect region. Along with the other Low Saxon dialects of the provinces of Groningen, Drenthe and Overijssel, Achterhoeks contains a number of marked phonological, grammatical and lexical features which distinguish it from the dialects of the western provinces. The generally defined border of the Achterhoek area today in relation to the rest of the Netherlands is shown on the Google map below.



Figure 1: Map of the Netherlands showing the location and boundary of the Achterhoek area (Map data: Google, n.d.).

Although there are a number of studies that describe linguistic and cultural features of the region (eg. Bloemhoff et al., 2013a; 2013b; Scholtmeijer, 2008; Schaars, 2008; Schut, 2012), there are fewer that provide data analyses specifically conducted within the region. Kloeke (1927), Broekhuysen (1950), and Schaars (1984-) are some notable exceptions to this, yet fewer have been conducted in recent years. Studies of dialectology are common in the Netherlands, yet many tend to focus on other areas, especially Brabant (Hagen, 1987; Swanenberg, 2009), and the province of Limburg (Hinskens, 1992), the latter of which has its dialect recognised as a minority language, according to the European Charter of Minority Languages (Public Foundation for European Comparative Minority Research, 2006). Both of these provinces lie to the south west of the Achterhoek, with Brabant bordering Belgium, and Limburg bordering Belgium and Germany. The Meertens Instituut also holds a number of databases online which, among other topics, list morphological (MAND), phonological (FAND) and lexical (eg. PLAND, specifically considering plant names across the Netherlands and Belgium) information across all Dutch dialects with a view to preserving dialect variants in records.

Kloeke (1927), Broekhuysen (1950) and Gerritsen and Jansen (1979) have all studied change over time in this area of the Netherlands, but it has not been the subject of research in more

recent times, with some exceptions being the work by researchers such as Van Reenen (2005, 2006) and Hamans (2008), who have revisited the earlier contributions by Kloeke.

This paper researches Achterhoeks speakers' realisations of the monophthongs [u] and [y], which typically correspond to [œy] in the Standard Dutch phonological system. It uses recordings made in 1979 by Leendert van Prooijje of elderly men from the region, which are then compared to present day recordings of dialect speakers. It describes these vowels as some of the most recognisable vowels of Achterhoeks, leading to an investigation into change and possible convergence. It takes a somewhat different approach to other sociolinguistic studies which focus on spontaneous speech, in that in both the 1979 and 2015 recordings speakers were asked to provide dialectal translations for sentences written in Standard Dutch. This then considers what it means to speak in dialect, and how this differs between participants.

The speakers included in this study all come from the Achterhoek region of Eastern Gelderland, from close to the borders with Overijssel to the north, the Veluwe region of Gelderland to the west, and just south-west of the River Oude IJssel, which is the approximate location of where the Liemers dialect region begins (see Figures 2 and 3). Four towns featured in this study lie along that border; they have been included under the broader term of "Achterhoeks" both for reasons of ease in describing the speech of this area of Gelderland, and also because of their own identification of the dialect they speak.

## *2. The Hollands Expansie Theory*

The work of Kloeke (1927) is important to this study, as little research had been done into the north-eastern dialect area previously. However, there existed a description by Bosworth in 1848 of Achterhoeks as being the closest Dutch dialect to German. Kloeke's work is especially relevant to this current research, as he made observations of how the Low Saxon vowels of [i] and [u] became [ɛi] and [œy] respectively in Standard Dutch.

Kloeke's (1927) theory, known as the Hollandse Expansie theory, suggests two expansions, and that the changes in vowels did not happen due to phonetic reasons, but rather a social factor: prestige or superiority. Under the Hollands Expansie theory, there are two expansions in terms of vowel change that eventually resulted in the diphthongisation of the West Germanic /u/ vowel in the Hollandic area. The first group consisted of sailors that, during

trade, brought a palatalised version of the back vowel in to the centre and east of the country from provinces to the west. This group held some form of prestige, although not as much as those responsible for the second expansion: upper class merchants from the city of Antwerp, who came to Holland around the end of the 16<sup>th</sup> century. They spoke a prestigious upper class dialect of Brabant, in which diphthongisation of /i/ and /u/ was already a common feature (Hamans, 2008). These people settled in and around Amsterdam, and other larger towns in Noord-Holland, and the Hollanders adapted their pronunciations to those of the new arrivals, perhaps perceiving their speech to be more prestigious than their own ways of speaking (Van Haeringen, 1960). Although [y] had previously been the prestige form, it was being succeeded by [œy] throughout the 16<sup>th</sup> and 17<sup>th</sup> centuries. As the eastern dialects began to take up [y] instead of [u] in the 20<sup>th</sup> century, Bloomfield (1933) wrote:

“...the more remote local dialects are taking up a feature, the [y:] pronunciation, which in more central districts, and in the more privileged class of speakers, has long ago been superseded by a still newer fashion.” (p.331).

From the 16<sup>th</sup> and 17<sup>th</sup> centuries, the west, and the immediate areas around Amsterdam had thus become the centre of speech to imitate, according to the Hollands Expansie theory, and this diffused outwards to the eastern dialect regions. There are a number of ideas regarding from where the change could have originally spread (Van Reenen, 2006), yet Flanders and Brabant tend to be common ideas (Kloeke, 1927; Bloomfield, 1933; Van Haeringen, 1960; Hamans, 2008). Bloomfield (1933) suggests that the change from [u] to [y] possibly originated in Flanders, and thus spread across a large area of the map which now uses a diphthong as its standard variant. Yet its spread to the east was hampered by a similar change occurring over the border in Germany at the same time. Bloomfield (1933) explains:

“Whoever was impressed by the Hollandisch official or merchant, learned to speak [y:]; whoever saw his superiors in the Hanseatic upper class, retained the old [u:]. The part of the population which made no pretensions to elegance, must also have long retained the [u:], but in the course of time the [y:] filtered down even to this class.” (p.330).

Some words, such as *muis* (mouse) retained the older [u] vowel in the eastern Netherlands for longer than others, such as *huis* (house). However, where [y] eventually diphthongised to [œy] in Standard Dutch, a version of the monophthong remained in the east.

### 3. Methodology

The part of Van Prooije’s 1979 corpus used for this study was comprised of older male construction workers from 28 different Achterhoek towns (see map below), which lie on or to the east of the River Oude IJssel. One speaker per town was recorded.



Figure 2: The Achterhoek region (Map data: Google, n.d.). The locations of the speakers from the 1979 corpus have been marked.

The original interviews included a general questionnaire and sentences designed to elicit dialectal pronunciations. For the modern comparison, 34 Achterhoeks speakers from 11 different towns (see Figure 3 below) were recruited through personal contacts and a Facebook page set up and shared to other organisations based in the region. Of these 11 towns, nine speakers were from Zelhem, eight were from Ruurlo, six were from Ulft, three were from Silvolde, and two were from Hummelo, with one speaker each from the remaining towns. Speakers from Silvolde, Terborg and Ulft were classified as non-rural speakers, while the other speakers were located in more rural areas; therefore there was a larger number of rural speakers than non-rural speakers (as is expected for this area of the Netherlands).



Figure 3: The Achterhoek region (Map data: Google, n.d.). The locations of the speakers from the 2015 corpus have been marked

Participants were recorded completing a picture task and reading sentences from the list originally used by Van Prooije in 1979. These sentences with which this study is concerned are listed below, with the bolded word containing the vowel of interest.

- *Kun je rauw vlees **ruiken**? (Can you smell raw meat?)*
- *Het jongetje wilde onder de auto **kruipen** (The little boy wanted to crawl under the car)*
- *We gaan het **huis** in de breedte bouwen (We are going to build the house more in the width (than the length))*
- *De **kuikens** zijn in de schuur (The chickens are in the barn)*
- *De prijzen van **huizen** gaan omhoog (The prices of the houses are going up)<sup>1</sup>*
- *Hij is een **huis** aan het zoeken (He is searching for a house)*
- *Het was al licht toen het vuur **uitging** (It was already light when the fire went out)*
- *De dominee loerde naar **buiten** (The vicar peered outside)*

Participants were asked to speak in dialect. That way, their own interpretation of their dialect could be compared to other speakers who all believed they were speaking the same version of the dialect. This was important to note as what is perceived to be dialect by one person may

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<sup>1</sup> The vowel in *huizen* (the plural of *huis*) was analysed separately from that in *huis*, in order to determine if the following voiced consonant had a different effect.

be different to another. These recordings were carried out during the summer of 2015, and speakers were categorised by age, sex, and whether they were from a rural or suburban area. All speakers reported that they spoke Achterhoeks at least sometimes, whether their everyday speech was representative of what they believed to be traditional dialect, or whether they sometimes switched between Achterhoeks and a more standard version of Dutch. What was of interest here was how participants spoke in their own form of the dialect.

In addition to the sentences, a picture task was also used. The picture task was comprised of images which were also designed to elicit dialectal pronunciations. The names of items seen within the images, or likely descriptions of actions, contained the vowels which are the objects of this study. Thus it was assumed that participants would use these words, and their pronunciations could then be studied, and compared against the results of the less spontaneous task of reading sentences within their dialect. Participants were encouraged to speak in dialect during both tasks, but it was reasoned that they may be less conscious of the use of dialectal pronunciations while undertaking a more spontaneous task.

Van Prooije's 1979 corpus of older male Achterhoeks speakers was obtained on cassette tapes from the Erfgoedcentrum van Achterhoeks and Liemers in Doetinchem, Netherlands, and digitised. These speakers were all classified as dialect speakers, but most likely were able to speak a more standard version of Dutch in different circumstances (Van Prooije, personal communication, 2015). The original research took the form of sociolinguistic interviews, with periods of sentence reading interspersed between the other questions. Van Prooije designed the original sentences to elicit dialectal pronunciations as well as variation in the lexicon. A selection of Van Prooije's sentences were replicated for this study (see above), those being the sentences that would result in the pronunciations of the vowel [u] or [y]. The same sentences were used in order to replicate the linguistic conditions as accurately as possible. However, what needs to be taken into account is that there are a number of differences between the modern day corpus and that of the earlier corpus. The age range of the modern day participants spanned the ages of 26-73, and included both male and female participants. The average age was 50; additionally, six speakers were aged over 70, and 11 speakers were aged under 40. There were 14 female speakers to 20 male speakers. Van Prooije's corpus comprised male speakers only, and of an older age – the youngest speaker was aged 56, the oldest was aged 92, and the average age was about 70 (Van Prooije, 2011). Additionally, Van Prooije's corpus included more towns in the area, whereas the current research is focussed

around a smaller area, along and above the river Oude IJssel, and then extending into the centre Achterhoek.

The vowels were extracted and analysed using Audacity, Praat, and Marton Soskuthy's formant editor. Using Audacity (2014), the target words from the sentences and picture task were isolated, and subsequently opened in Praat (Boersma & Weenink, 2014), where the vowels were manually extracted one by one. The F1 and F2 measurements were checked using the formant editor, and adjusted where needed. Formants were measured at both onset and glide, in order to show direction of diphthongisation, or lack of diphthongisation. In addition, results were also normalised using the Nearey 1 method in the normalisation programme NORM (Thomas & Kendall, 2007). There are physiological and anatomical differences between speakers, which a normalisation procedure can assist to normalise for a certain extent.

#### *4. Results: Rural and Non-Rural Variation between [y] and [u] in 2015*

The most notable finding is that of the behaviour of the vowels after rhotic consonants in the modern speakers. Whilst the vowel was realised as more fronted, in all other positions in all speakers, there was a noticeable difference between speakers when it occurred after rhotics. Some speakers used the fronted variant, and others used a more retracted pronunciation.

Where the difference is noted relates to whether speakers resided in a suburban or rural area. The towns of Terborg, Ulft and Silvolde (which can be noted at points 6, 7, and 8 on the Google map in Figure 3 above) are the urban population areas of the Oude-IJsselstreek council (with Terborg having city rights, and Ulft the largest population) (Oude-IJsselstreek, 2016), and so speakers from these towns were classified as residing in non-rural areas, whereas the other represented localities were classed as rural<sup>2</sup>. Speakers from rural areas were found to often use the retracted pronunciation after /r/, while speakers from non-rural areas used the fronted pronunciation in most instances. The following two formant plots (generated through NORM, using the Nearey 1 method) show individual vowel pronunciation for two

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<sup>2</sup> These localities were situated across the municipalities of Oude-IJsselstreek, Doetinchem, Aalten, Berkelland and Bronckhorst, and comprised small villages of mostly farmland as well as some higher-density population areas, with most having an "urban" centre. Some have town privileges. It was more difficult to classify some speakers who lived in a semi-rural location, such as a higher-density population area within a rural location (eg. speakers from Gaanderen and Varsseveld); these speakers have also been classed as "rural" as the urban belt areas are more of an exception to the rule regarding overall rurality.



speakers of similar ages: a 32 year old female from the rural town of Halle, and a 34 year old speaker from the suburban town of Ulft. Note the measurements for the [y] and [u] vowels – the suburban speaker did not show any use of [u], whereas the rural speaker’s [u] vowel was found only after rhotics, in the words *kruipen* and *ruiken*, both used in the picture task and sentence reading task. What is occurring here is that the rural speakers are appearing to be making a distinction that the non-rural speakers are not: that following /r/ the vowel is pronounced as [u], whereas it is [y] in any other condition, at least amongst those conditions included as part of this research.

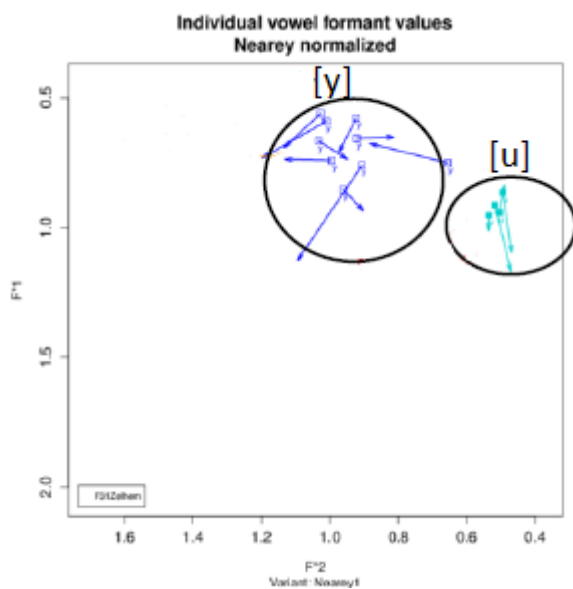


Figure 4: Female, 32, Halle (Normalised values)

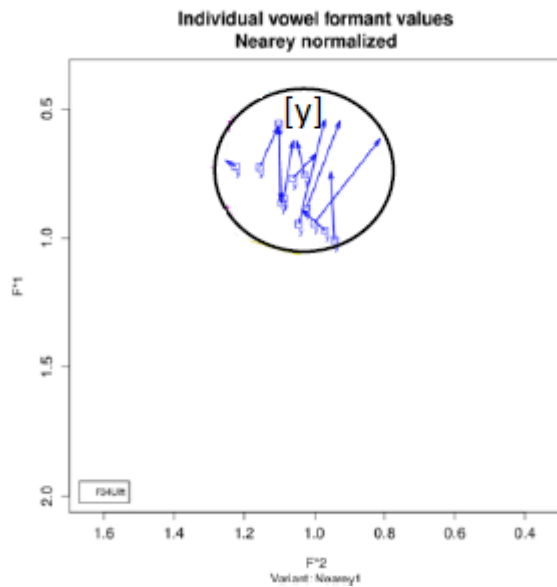


Figure 5: Female, 34, Ulft (Normalised values)

Similar results are also shown below for two male speakers: a 38 year old from a rural town compared to a 43 year old from a suburban area. Again, we see no [u] usage from the suburban speaker, yet frequent realisation of [u] from the rural speaker, which always occurred after /r/.

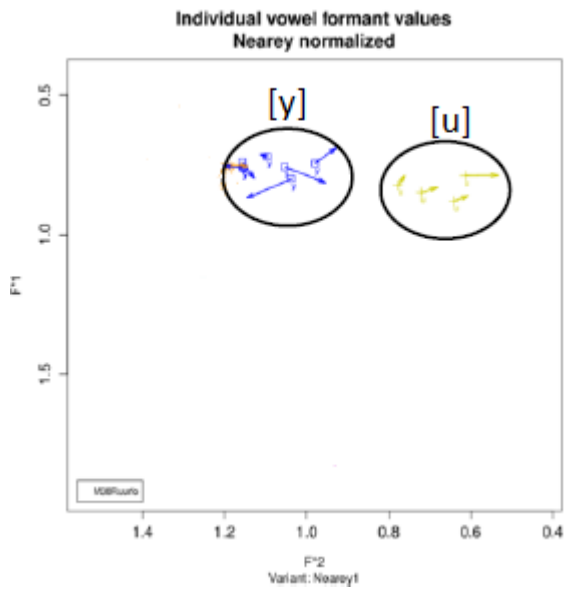


Figure 6: Male, 38, Ruurlo (Normalised values)

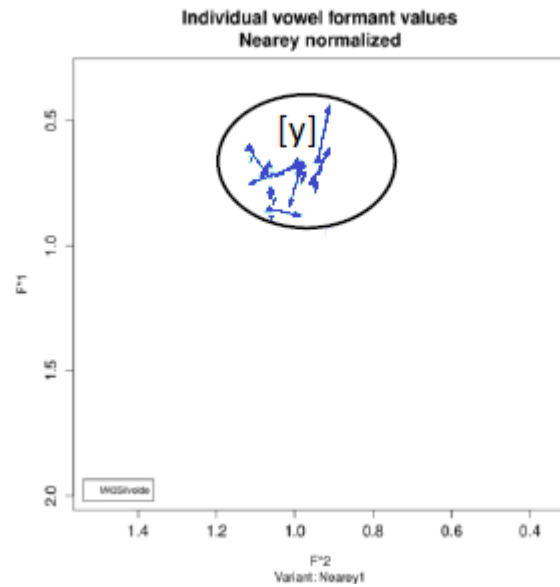


Figure 7: Male, 43, Silvolde (Normalised values)

We can look more closely at the individual words in the scatter plots in Figures 8 to 13, which measure the onset F1 and F2 positions (the measured point 2) of the vowel in each of the most used words. All vowels have been realised as monophthongs (unless otherwise specified and addressed within the accompanying descriptions) which has the vowel onset position as an appropriate place of measurement to display most common trends. Scatter plots have been chosen to represent the information as they allow us to visualise the most common representations, and where these tend to be clustered. The average values of [i], [a] and [ɔ] vowels, obtained from the same sets of speakers, have been included on the plots as reference points.

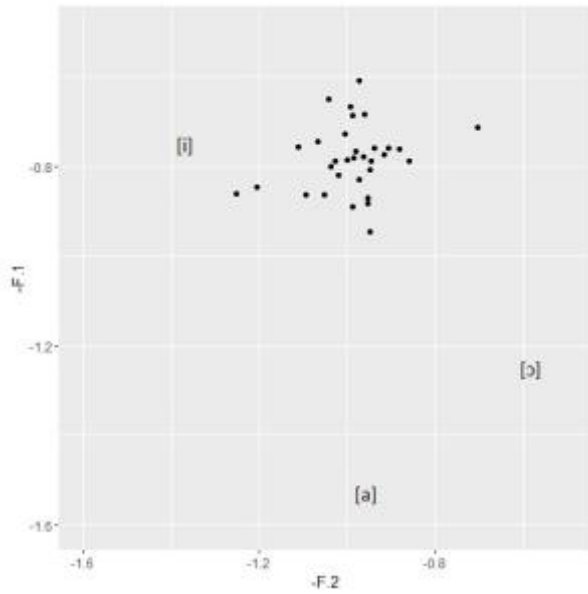


Figure 8: F1/F2: *buiten* (outside) (scatter plot)

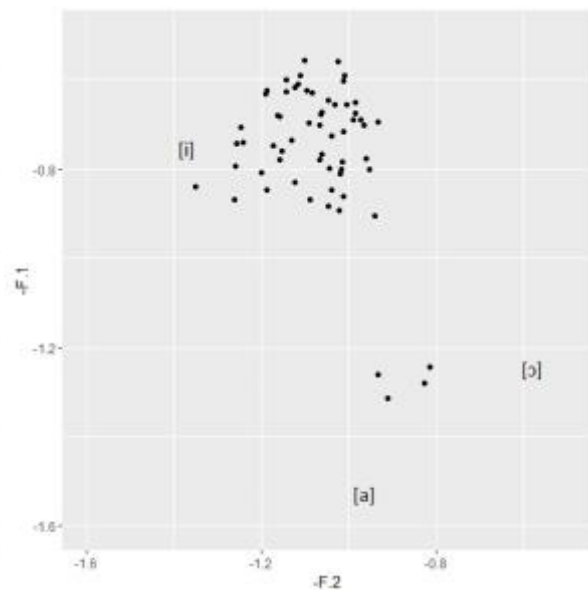


Figure 9: F1/F2: *huis* (house) (scatter plot)

Firstly, the vowel in *buiten* occupies a fairly small space and it is the front vowel which is realised by all speakers in 2015. The high concentration of values within this space, and lack of movement, signifies that the vowel [y] is stable in this word in 2015. The vowel in *huis*, also shown above, displays more variation than in *buiten*. The most concentration is around the perceived phonetic values for [y], yet this is spread over a larger space, indicating slightly more variation. Additionally, the slight concentration visible at the bottom of the plot indicates the onset position of the diphthong, realised by a minority of speakers, those being from the non-rural towns of Terborg (female speaker, aged 39) and Ulft (male speaker, aged 59), and the rural town of Bredevoort (male speaker, aged 33, but who grew up in the non-rural town of Ulft).

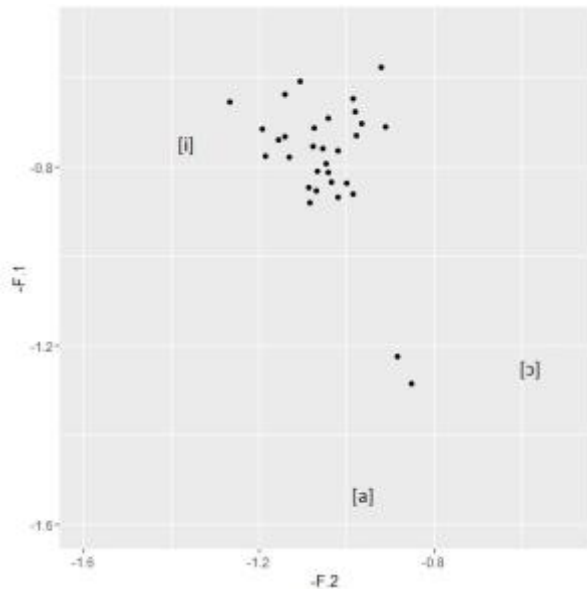


Figure 10: F1/F2: *huizen* (houses) (scatter plot)

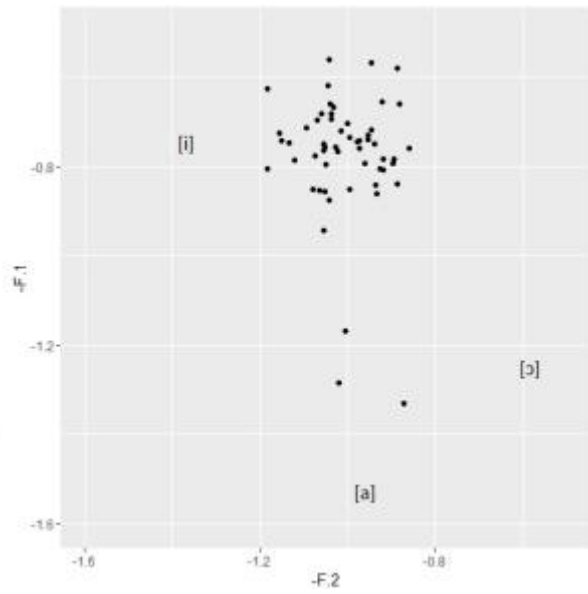


Figure 11: F1/F2: *kuikens* (chickens) (scatter plot)

The vowel in *huizen* (the plural of *huis*) did not appear to be affected by the following voiced consonant, with *huizen* recording similar results to *huis*. Again, the largest concentration was around the front vowel, with no use of a back vowel. The onset of the diphthong is also shown separately, having been recorded in the speech of a small number of speakers as described earlier. For *kuikens* in Figure 11 above, a similar central area to *buiten* and *huizen* is covered.

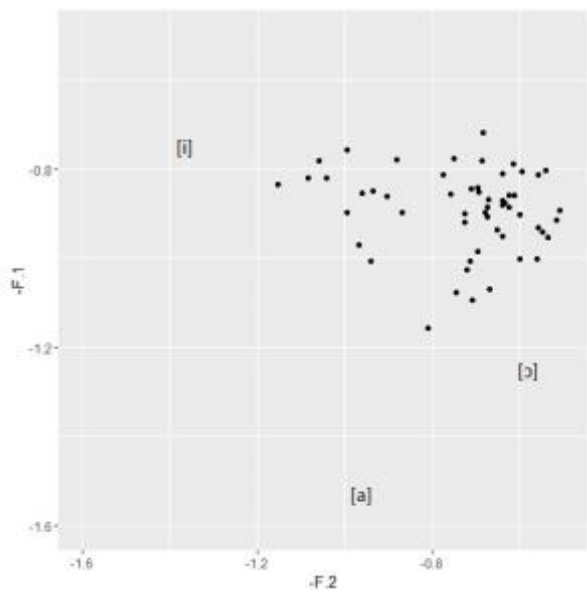


Figure 12: F1/F2: *kruipen* (crawl) (scatter plot)

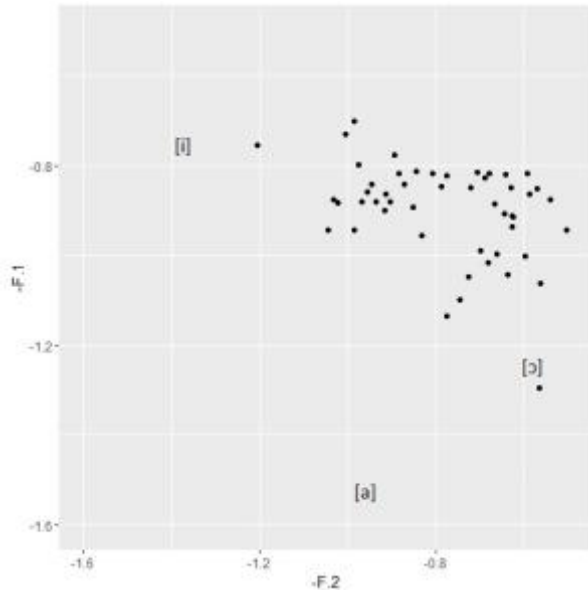


Figure 13: F1/F2: *ruiken* (smell) (scatter plot)

We now consider the vowels that appear following rhotics, which appear to show a bimodal distribution. Where we look at *kruipen* is where we see the first indication of a split between [y] and [u], not simply a distinction between a dialectal monophthongal realisation and the Standard Dutch diphthong, as seen in *huis* and *huizen*, for example. The most common use appears to be further back than what has been observed in the words examined previously, although more fronted, central realisations also exist. Here there is a difference between the rural and non-rural speakers as explained earlier: it is the majority of rural speakers who are using the back pronunciation here, whereas the non-rural speakers are keeping with the vowel [y] as in the other words which are pronounced using the diphthong [œy] in Standard Dutch. Figure 14 shows the difference between the rural and non-rural speakers' vowels. Here, we can see that the rural speakers show usage of the back vowel, and the non-rural speakers make use of both, with more instances of the front vowel observed.

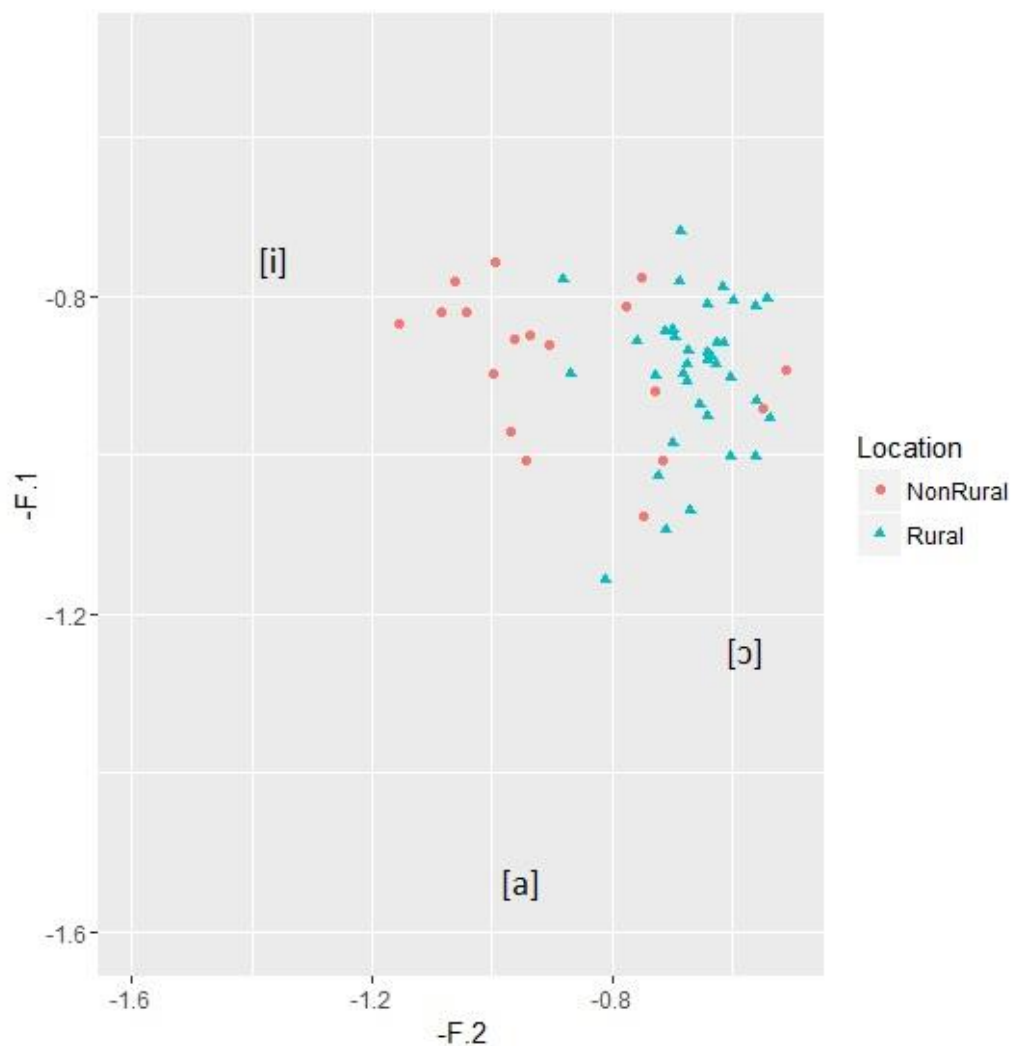


Figure 14: F1/F2 *kruipen* - rural speakers vs non-rural speakers (scatter plot)

We see the same pattern with *ruiken* as we did with *kruipen*; again, there is a split between the realisations of the vowel in the word as either [y] or [u], and it is the rural speakers who favour the latter vowel. Again, the more fronted pronunciations are observed in the non-rural speakers, as evidenced in Figure 15.

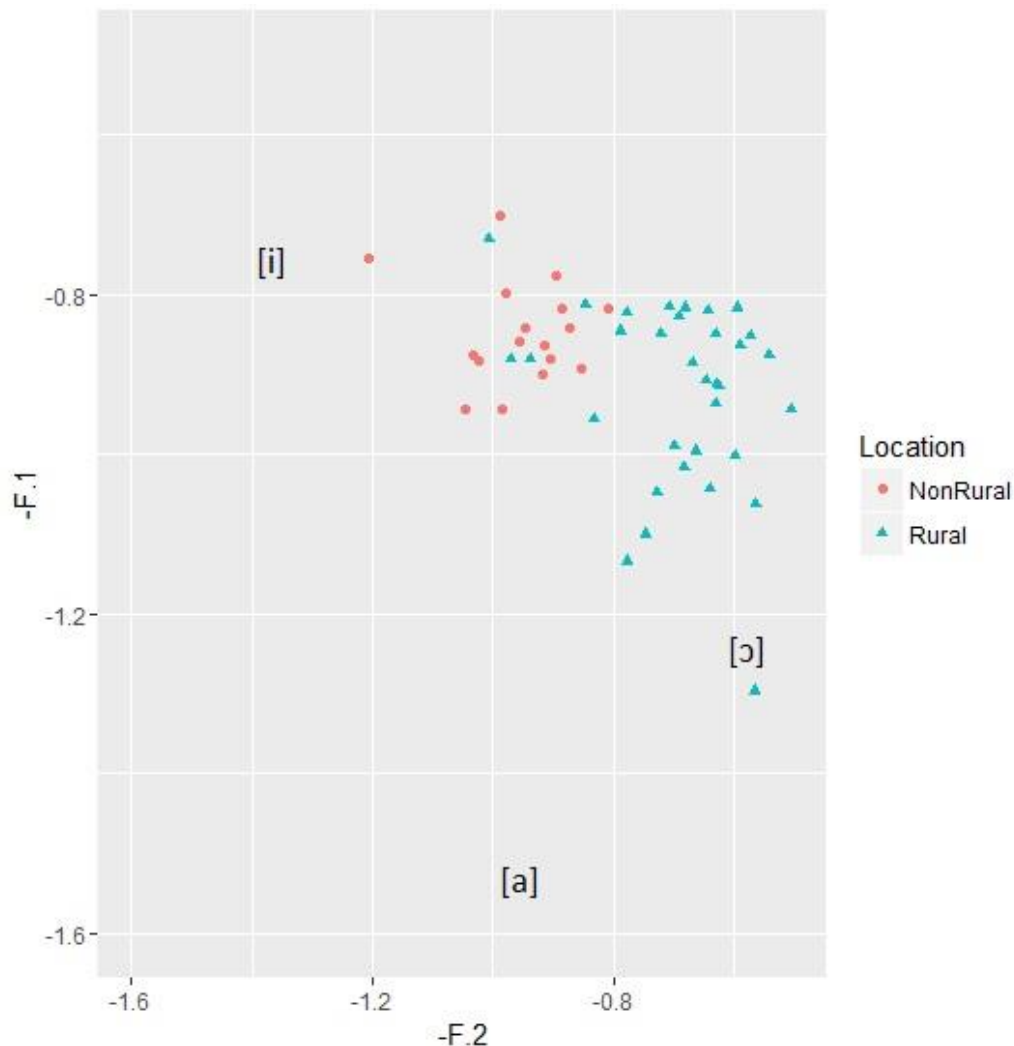


Figure 15: F1/F2 *ruiken* – rural speakers vs non-rural speakers (scatter plot)

Overall, the scatter plots show that words that include a vowel following a rhotic cover a greater area than those that do not. Only the front vowel is used in these words, with the exception of *huis* and its plural *huizen*, where the onset of the diphthong appears separately from the main cluster of points. However, the graphs for *kruipen* and *ruiken* show a split between the two monophthongs, with the back vowel being favoured due to the number of rural speakers being greater than the number of non-rural speakers. Additionally, there is also some movement towards the back vowel seen in *uitging*, which is attributed to a small

number of speakers using linking-r in the sentence *het was al licht toen het vuur uitging*. We see only the use of the fronted monophthong in *buiten, kuikens* and *uit*.

Whilst the above scatter plots show two main differing realisations of [y] and [u] (as well as [œy]), to consider this finding in more detail, the number of occurrences of either vowel pronounced after /r/ was calculated, and the percentage results of [u] pronunciation are shown in the graph below.

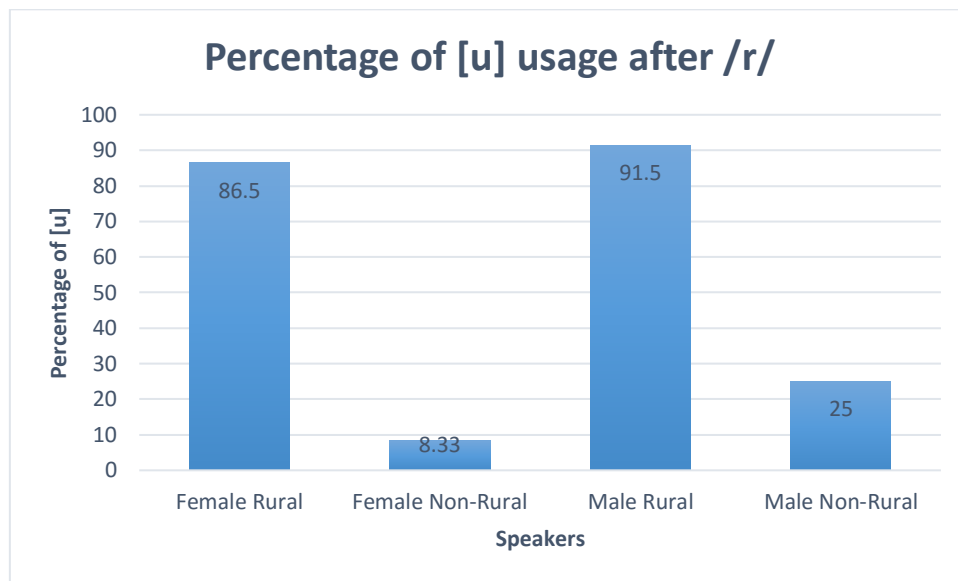


Figure 16: Percentage of [u] usage after /r/

The graph shows the percentage of the number of instances of [u] usage amongst all speakers in each group, and differentiates speakers by the locality and sex, but not by the task completed (which will be discussed further below). The results here indicate that the back variant is highly favoured by rural speakers, with few instances occurring amongst non-rural speakers. The pronunciation of [y] was realised in almost all instances amongst non-rural female speakers, whereas the non-rural male speakers are retaining a 25% usage of the older variant. This is still lower than what is recorded in rural speakers, yet it does perhaps indicate that the male speakers here are more likely to be holding onto the traditional variant for longer than female speakers. A larger sample size is perhaps needed in order to ascertain if this is indeed the case.

However, in the few instances where the Standard Dutch form did occur, it was observed in the speech of non-rural speakers, and not rural speakers. We can therefore hypothesise that the degree of standardisation can be classed, from most standard to least standard, as:

[œy] – [y] – [u]

where we notice that the most traditional dialectal variant is the least standard. It is important to revisit and consider how this conclusion has been drawn. Firstly, it has been established that [u] is the older variant, and began a change to [y] sometime around the 17<sup>th</sup> century (Kloeke, 1927; Van Reenen, 2005, 2006). Secondly, this hypothesis is corroborated by Kloeke (1927) and Bloomfield (1933), who suggested that [y] was perceived as the prestige (Netherlandic) form. The fact that *muis* (mouse) retained [u] for longer than *huis* (house) is also of interest, as the word *huis* would have been observed in official speech more so than *muis*, and spread into areas where the old form was still being used in *muis* (Bloomfield, 1933). The change from [u] to [y] is evident in the majority of cases nowadays except for where [u] appears to sometimes be preserved after /r/. Further research needs to be done in order to ascertain why [u] is retained in this particular position, but as we have seen it appears to occur primarily in the speech of rural speakers. As [y] has been established as more widespread in more positions in the Achterhoeks dialect, it could be considered somewhat more of a regional standard feature, whereas [u] usage has declined to the point where it is found in fewer phonological conditions than [y].

##### 5. Results: Non-Rural and Rural Variation between [y] and [u] in 1979

When compared to the 1979 results, the findings are similar to the overall pattern seen in the 2015 speakers. There were more occurrences of [y] following rhotics when observed in speakers from non-rural areas, however, the 1979 recordings revealed a finding not seen in 2015: the realisation of [u] in some words, in some speakers, when the vowel did not follow a rhotic consonant. This was observed in speakers from Ruurlo, Vragender, Winterswijk, and Zwolle, and can be seen represented in the below plots for *buiten* and, for comparison, *kruipen*.



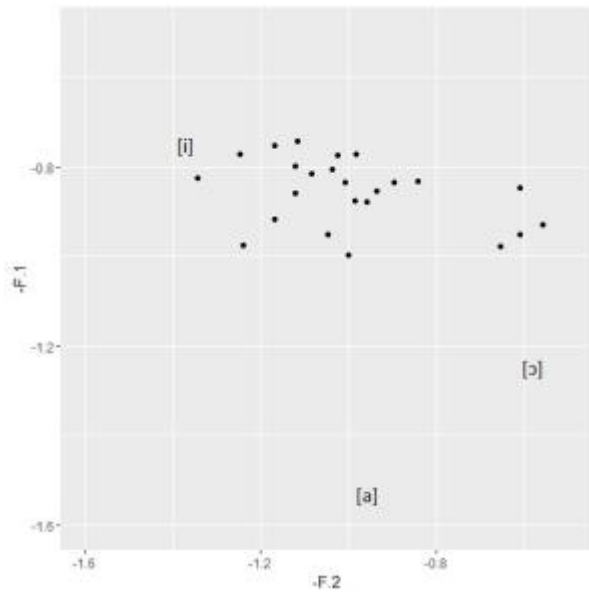


Figure 17: F1/F2: *buiten*, 1979 (scatter plot)

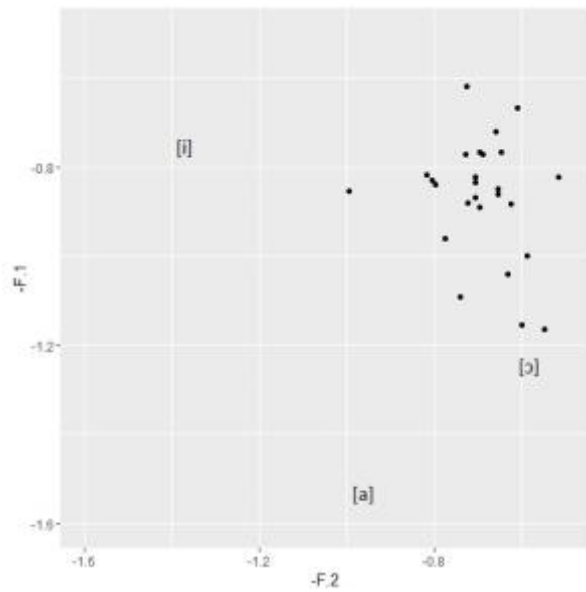


Figure 18: F1/F2: *kruipen*, 1979 (scatter plot)

These graphs show considerable difference to their 2015 counterparts, as not only is the vowel in *kruipen* pronounced almost exclusively as a back vowel, but we see a split between front and back realisations in *buiten*. While the majority of speakers in 1979 are using a front vowel, there are still some back realisations that were recorded in the speakers from Ruurlo, Vragender, Winterswijk and Zwolle. A study by Gerritsen and Jansen (1979) yielded similar results for this time period; they also found that both [u] and [y] were used. This could indicate a very final stage in the transition from back to front vowel, where the remnant vowel is still occasionally observed in positions it no longer occupies today.

In Figure 19, we can compare the results for *huis* between 1979 and 2015. In 2015, we can observe the emergence of the diphthong [œy] represented in the onset position in the small concentration of speakers at the bottom of the graph. But what is perhaps more surprising is that although the 2015 speakers' monophthong occupies a large space, it is still a central-fronted realisation mostly concentrated around what could be perceived as the phonetic values of [y], with no back pronunciations (and, in addition, these graphs represent only onset position of the vowel), whilst the 1979 speakers vary between back and central pronunciations. The results for the 1979 speakers show that they are mostly not using the back pronunciation, but it still exists in a small number of speakers, where by 2015 this realisation has been completely levelled out. The scatter plot highlights the number of speakers using each variant, with the 2015 speakers represented in red, and the 1979 speakers represented in blue. As the plot shows, in 1979 there was still some usage of the back vowel

in conditions other than following /r/, however we can see that in 2015 all monophthongal pronunciations have fronted. Additionally, we also see the introduction of the Standard Dutch diphthong, with the onset position of this vowel shown on the plot. This feature was not in use in 1979, and so its appearance in 2015 represents a significant change, and possible influence of standardisation. Nevertheless, the front monophthongal [y] is the preferred variant of dialect speakers.

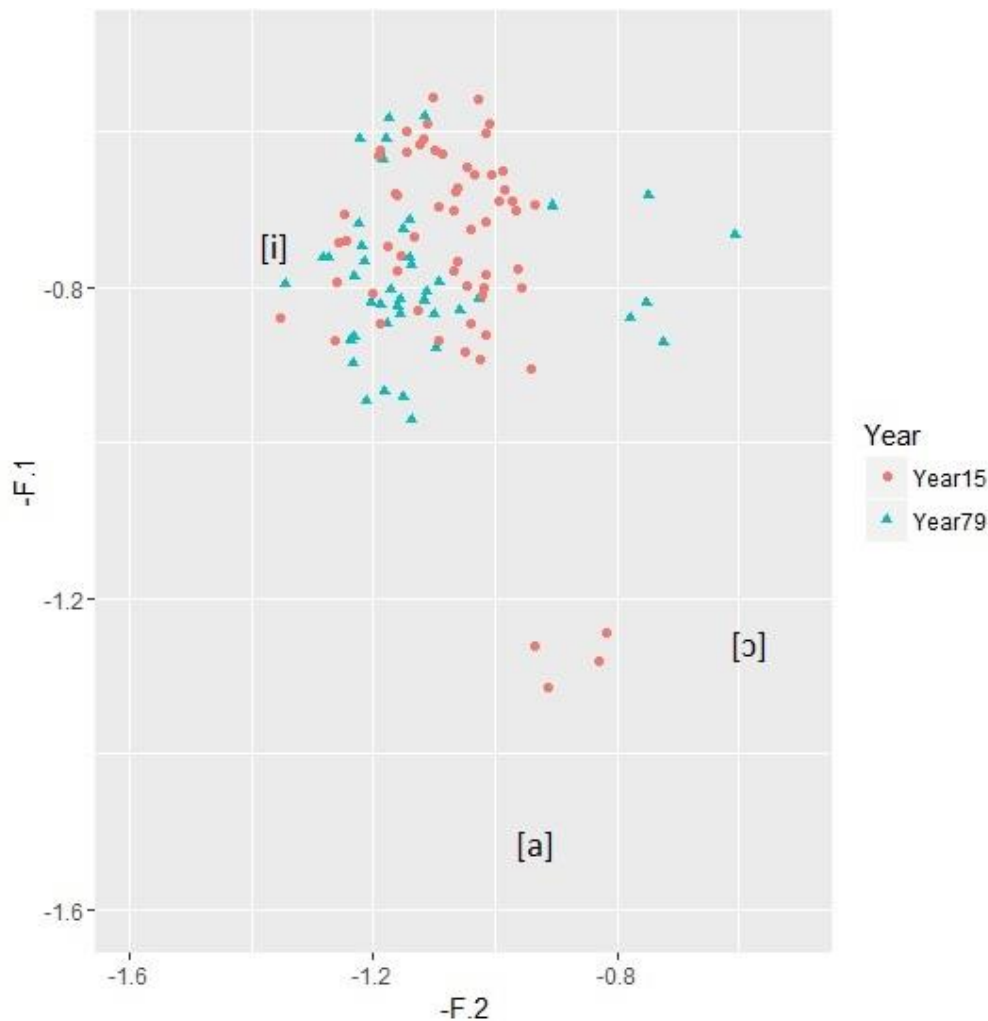


Figure19: F1/F2: huis, 1979/2015 (scatter plot)

The scatter plots can also be used to further visualise the differences observed between 1979 and 2015 when rhotics are involved. Figure 20 shows the plot for *kruipen* where we can see distribution of speakers using each variant. Again, 2015 speakers are represented in red, and 1979 speakers in blue. In 1979, there was only one recorded realisation of [y] (which is evident amongst the cluster of red 2015 points in the centre of the plot), whereas in 2015 this is more evenly split. The back vowel was still narrowly used more often than the front vowel

amongst this group, however there were also many instances of [y] being used, mostly by non-rural speakers. There was also more variation in vowel height observed amongst the 1979 speakers.

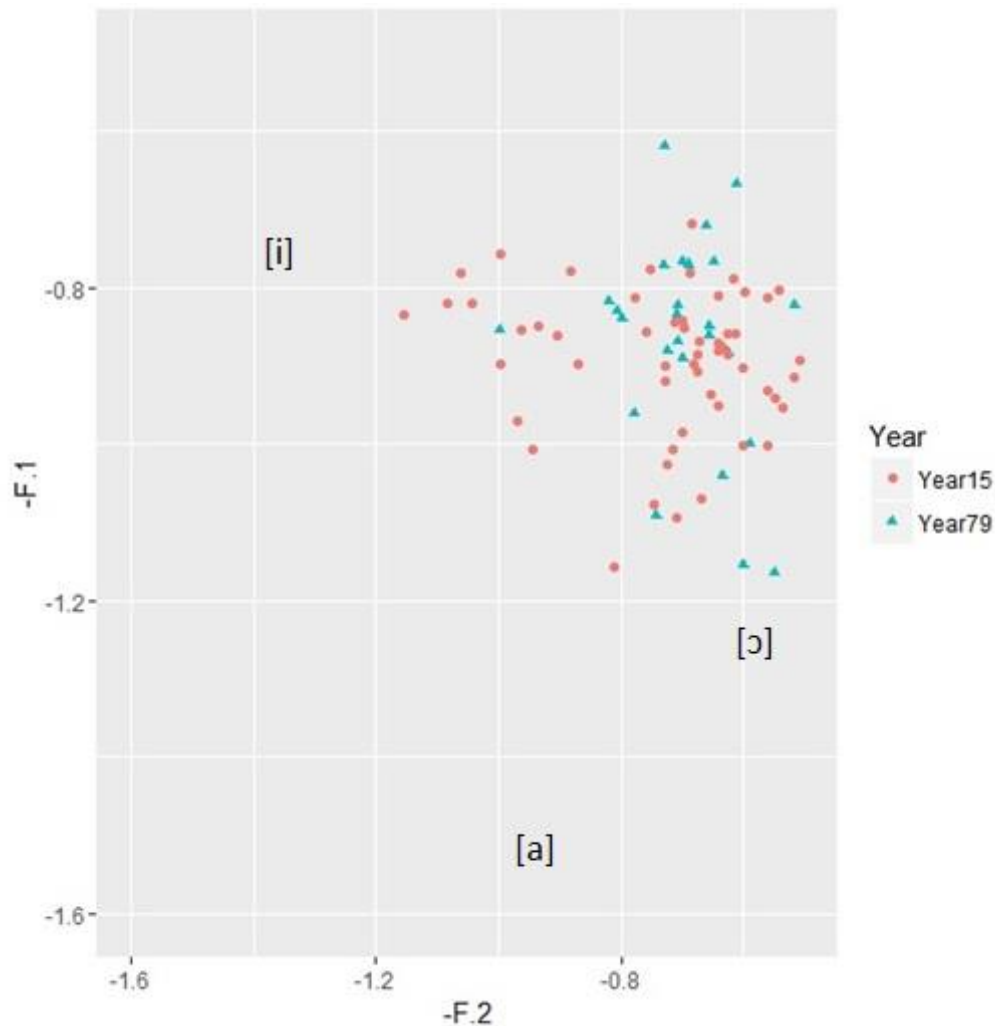


Figure 2: F1/F2: kruipen, 1979/2015 (scatter plot)

## 6. Discussion

The results as analysed above suggested that the realisations of the older vowel [u] observed in Ruurlo, Vragender, Winterswijk, and Zwolle has been confined to occurrences only after /t/ in the modern rural speakers, and has mostly changed to a [y] pronunciation in the majority of Achterhoeks speakers, both rural and non-rural, in other positions.. This hypothesis is supported by the work of Kloeke (1927), who showed that this vowel was, at one point in time, used as the norm in the eastern Netherlands, including within the area of the Achterhoek, before the change to [y] following the Holland Expansion.

This again highlights the importance of the current research, as we can see a clear change not just between the two time periods of speakers in this study, but also from what had been described as the situation by Kloeke (1927). We find that in the Achterhoek region [u] was the older usual pronunciation for the vowel in words such as *huis*, and although there were remnants of this older pronunciation in the speech of 1979 participants (both in this study and as found by Gerritsen and Jansen, 1979), it has unmistakably fronted by 2015. We can look at the history of this vowel in the eastern Netherlands, and from this determine that the rural speakers are in fact maintaining a vowel of the older, traditional dialect, whilst the non-rural speakers' vowel has indeed shifted over time to a more fronted vowel. In Overijssel, the province located directly north of the Achterhoek in Gelderland, differences in pronunciation of the vowel were historically linked to differences in religion. The vowel [u] was the older form (Kloeke, 1927), and by the beginning of the 17<sup>th</sup> century it continued to be used by Roman Catholics in the region, but Protestants had moved to front the vowel to [y] (Van Reenen, 2005; 2006). In the Achterhoek, today we can only see a remnant of this in the speech of the rural speakers. The change to [y], led by those of Protestant religions, is more widespread across more phonetic conditions, yet the rural speakers have retained a feature of the older dialect under certain conditions, that being following rhotic consonants.

I have therefore suggested that the differences are due to whether speakers reside in a rural or suburban area, but we could also consider that a [ru] / [ry] isogloss exists beginning around Silvolde and Terborg, or somewhere along the Oude IJssel. Further research is needed in order to ascertain which of these theories will ultimately prove more likely to be the case. Either way, I would suggest that there is a phonetic reason attached to why there exists variation within this vowel, as the evidence from the Van Prooije data, combined with that collected in 2015, shows that /r/ has an effect. This is not to say that there are not geographic factors involved as well, however, as there does appear to be a correlation between pronunciation and type of locality, as stated above. In a map of the *huus/hoes* isogloss, where *hoes* represents the older [u] pronunciation, Kloeke (1927) shows [u] as having receded to the very east of the Achterhoek region, and extending into Germany where the pronunciation is widespread. It is now a relic pronunciation seen occurring only after /r/ according to this study. The possibility of a north-east / south-west isogloss exists, yet some localities which recorded a back pronunciation after /r/ had already fronted to [y]. The fronted [y] had not yet reached the eastern Achterhoek by this stage, but by the time of Van Prooije's recordings in

1979, the results overwhelmingly showed that it had in fact changed by then. Only a few speakers recorded a pronunciation of [u] in conditions other than following /r/.

Although the possibility of a geographical isogloss (perhaps along the Oude IJssel) pertaining to the use of either [u] or [y] after /r/ cannot be ruled out, and should be explored, the correlation between rural and non-rural pronunciations is an interesting concept which deserves to be investigated further in future studies. The Achterhoek has long been considered to be a farming area, but this could be also be explained as being a traditional view nowadays; areas do of course exist within the Achterhoek which would not be classed as rural. These include Terborg, Uft and Doetinchem, which have a different sociolinguistic profile due to increased urbanisation and mobility. These sociolinguistic factors lend the current linguistic situation more to a rural vs. non-rural split rather than a geographical isogloss. Trends observed in dialect contact and levelling situations point to innovative areas (see Williams & Kerswill, 1999), and these non-rural areas are perhaps leading the change while the rural areas preserve older variants in certain phonetic conditions. This research has indicated that /r/ provides that phonetic condition required for preservation, but that is not to suggest that there are no other conditions under which the same preservation may occur, which have not been considered as part of this study. See Scobbie, Sebregts and Stuart-Smith (2009) for further discussion on co-articulatory effects of /r/ in Dutch speakers.

Future research could focus on the behaviour of this vowel in a number of different positions, although from the data gathered I hypothesise that whether the speaker is from a rural or suburban area will have an effect on their pronunciation of this vowel (but this is only evident after /r/ in this dataset). This further suggests that rural speakers are better at preserving older forms, although it would appear that [y] is continuing to be the preferred variant over [u]. This is evident in the infrequent appearance in 1979 of the back variant in positions other than following /r/, to its complete absence in these positions in 2015.

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