

## 18. Phonological features of Limburgian dialects

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### 1. Introduction

In the literature that tries to define the area where Limburgian dialects are spoken, two isoglosses play a major role. These are the Benrath Line and the Uerdingen Line, both of which capture certain aspects of the Second Consonant Shift. In the German literature, this law is usually referred to as ‘hochdeutsche Lautverschiebung’. It is a sound change which affected the stops of the older system; not only voiceless *p*, *t*, *k*, but also voiced *b*, *d*, *g* (which in their turn had developed from Germanic voiced continuants). The voiceless stops were changed into (voiceless) affricates or continuants; the voiced stops were changed into their voiceless counterparts. In traditional German dialectology, various sounds are related to various prosodic positions, and then a dialect is categorized in terms of how a given sound behaves in these positions (Braune and Reiffenstein 2004). For instance, the defining characteristic feature of the Middle Franconian dialects is that a labial voiceless stop is not subject to the law in Anlaut position (beginning of the word), although it does so in Inlaut (intervocalic position) and Auslaut (end of the word). Thus, these dialects have *perd* ‘horse’, and not *pferd*. The voiced stops hardly undergo any changes in these dialects. In Eastern Franconian dialects, however, the law has greater strength. Here labial voiceless stops do undergo the rule, so that *pferd* is found. Voiced coronal stops are also subject to the rule. In short, various dialects are grouped in terms of the strength of the Consonant Shift. Middle Franconian is lowest on the scale, followed by Eastern Franconian, followed by Upper German dialects, where (almost) all the consonants undergo the rule, in (almost) all the positions.

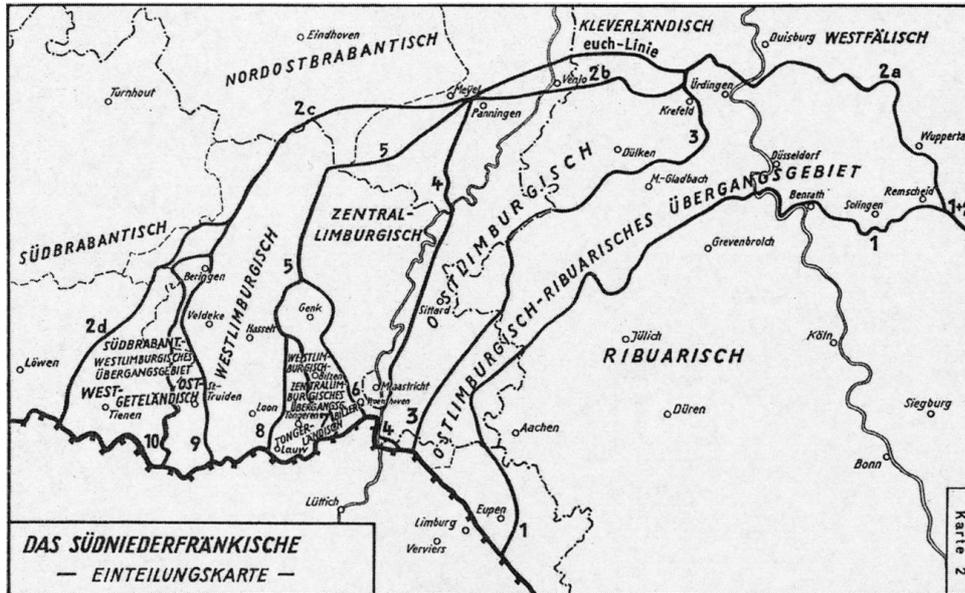
The Benrath Line distinguishes the dialects where the Consonant Shift regularly applies from the dialects where the law did not apply at all, or at least not in a way that can be defined phonologically. Thus, to the east and south of the Benrath Line words like *machen* ‘to make’ are found, whereas to the west and north, we find words like *maken*. In the Netherlands, the dialects to the east of the Benrath Line are referred to as Ripuarian dialects (in the older literature, the terms Ribuarian or Landkölsch are sometimes found). Thus, the Ripuarian dialects are the westernmost/northernmost dialects where the Second Consonant Shift applies in a precisely definable phonological environment. They are therefore considered to be a branch of High German.

The Uerdingen Line defines the area where the last vestiges of the Second Consonant Shift are found. However, this area can no longer be defined in purely phonological terms, since only a few lexical items undergo the law. To the south (and to the east) of this line, dialects have the word *auch* ‘also’, and the pronouns *ich* ‘me’, *mich* ‘me, acc.’, *dich* ‘you, acc’, with a shifted velar. To the north (and the west), these words have a velar stop. (The *auchlook* isogloss is not completely identical to the *ichlik* isogloss; for recent discussion, see Keulen 2009.) In the German dialectological tradition, the dialects in between these two lines are called Southern Low Franconian (*Südniederfränkisch*), and in the Dutch tradition they are usually referred to as Eastern Low Franconian (*Oostnederfrankisch*).

In his important article *Die Gliederung des Südniederfränkischen*, published in 1965, Goossens presents an overview of the literature in which further distinctions are proposed among the dialects in between the Benrath and the Uerdingen Lines. (Some of the classic literature on which Goossens’ article is based is reprinted in the collection edited by Van de Wijngaard 1996.) Summarizing the literature, Goossens observes that the dialects of this areas hardly have any characteristic properties of their own. Rather, their most characteristic feature is that, to various degrees, they have been influenced by dialects to the east (the Ripuarian dialects) and/or dialects to the west (the Brabantian dialects). The Ripuarian influence is strongest in the east, and the Brabantian influence is strongest in the west. He therefore distinguishes the following major dialect areas: 1) a transitional area between the Ripuarian dialects and the Limburgian dialects; 2) East Limburgian dialects; 3) Central Limburgian dialects; 4) West Limburgian dialects; 5) a transitional zone near the city of Genk in between Central and West Limburgian; 6) a transitional zone in between the Brabantian dialects and the West Limburgian dialects.

Goossens proposes to replace the terms Southern Low Franconian (*Südniederfränkisch*) and Eastern Low Franconian (*Oostnederfrankisch*) with the term *Limburgian*, because it is difficult, if not impossible, to use the labels for the finer distinctions with the general term. In that case, collocations like East-East Low Franconian (for East Limburgian dialects) would result, or West-South low Franconian (for West Limburgian dialects), or even West-East-Low Franconian, etc. If we adopt the term *Limburgian*, the result is that Limburgian dialects are also spoken in Germany, in particular in the area around Dülken. In Map 18.1, I present Goossens’ map of the Limburgian dialects. This map has met with general approval since its publication, and it also figures, in a simplified form, in the popular literature (cf. for instance Keulen et al. 2007).

The most important isoglosses, the *Benrath Line* and the *Uerdingen Line*, are labeled 1 and 2, respectively. The isogloss separating Ripuarian from the East Limburgian-Ripuarian transitional zone is known as the *sagen-Line*. On the map it is labeled 3. This isogloss distinguishes [zɛgɛ] dialects (to the west) from [za:γə] dialects (to the east). The *Panningen Line* (labeled 4) distinguishes the East Limburgian and the Central Limburgian dialects. In East Limburgian, *s* and *z* in word-initial consonant clusters are palatalized, but not in Central Limburgian. The next important isogloss, distinguishing West Limburgian from the Central Limburgian dialects, is the *Panningen Sideline*, which Goossens refers to as *the Genker Line*. The dialects to the east of this line have a palatalized *s* in sequences that derive from historical *sk(r)* in initial position. To the west of this line, *s* is not palatalized in this environment. Slightly to the north of the city Genk, the Genker Line branches off into three isoglosses, delimiting a transitional zone between West Limburgian and Central Limburgian. On the map, the Genker Line is labeled 5,



Map. 18.1: Goossens' (1965) map of the Limburgian dialects

and its branches are labeled 6 to 8 (known as the Vroenhoven Line, the Bilzen Line, and the Lauwer Line, respectively). The isogloss labeled 9 is the *Accent Line* (German: *Betonungslinie*). To the east (and south) of this line, dialects distinguish two accents: Accent 1 and Accent 2, as they are called in the recent literature. To the west (and north) of this line, dialects do not have this distinction. Isogloss 10 is the so called *Geteline*. The dialects in between the Gete Line and the Uerdingen Line have such a strong Brabantian ring to them that sometimes it is argued that they do not belong to the Limburgian dialects. This view is dominant in the recent literature (cf. Keulen 2009 for an overview).

In this article I will give an overview of the phonological phenomena characterizing the Limburgian dialects. I will follow the tradition and present the phenomena in terms of spheres of influence. First, I will present phenomena that have been borrowed from the east. In section 2. I discuss the phenomena that are shared by the Ripuarian dialects and the great majority of the Limburgian dialects. Then, in section 3., I present phenomena of eastern origin, which spread to a large majority of Limburgian dialects, but subsequently changed in one way or another in the Ripuarian dialects. These phenomena, then, could be regarded as characteristic for the Limburgian dialects, since they occur in *most* Limburgian dialects and are found *nowhere else*. (According to Dols [1942: 45], the assimilation of a stem-final obstruent to the [voiced] *d* of the preterit suffix *-de* is uniquely Limburgian. This, however, is not true, as is shown in Roos 2009.) Section 4. sums up the phenomena originating from the east but differing from the ones in the previous two sections in that they have a narrow distribution in the Limburgian area, because they did not spread very far to the west. Section 5. shows how western dialects, in this case Brabantian ones, have influenced the Limburgian dialects. The phenomena

discussed here are diphthongization of high vowels and unrounding. Section 6. contains a few suggestions for further research and section 7. presents the main conclusions.

## 2. Coming from the east; widespread in Limburgian

In this section I discuss three phonological phenomena that are widespread in Limburgian. The western dialects that show these have borrowed them there from the Ripuarian area, where they are still present. These phenomena are: 1) the accentual contrast; 2) the split of the West Germanic falling diphthongs, and 3) sandhi voicing.

### 2.1. The two tonal accents

Almost all Limburgian and Ripuarian dialects have a contrast between two tonal accents. In the recent literature, these are referred to as Accent 1 and Accent 2. Thus, one finds minimal pairs like *reet* ‘crack’, *naat* ‘wet’, both with Accent 2, and *reet* ‘reed’, *Naat* (proper name), both with Accent 1. The Limburgian dialects acquired this phenomenon from Ripuarian. Relatively recent overviews of the literature can be found in De Vaan (1999), Gussenhoven (2000a), Hermans (2009) and Schmidt (1986).

Phonetically, the two accents are distinguished as a timing difference, as was already demonstrated in Jongen (1972a). In words with Accent 1, the pitch change in the intonational melody is realized relatively early in the stressed syllable; in words with Accent 2 it is realized much later, and sometimes ends up in the post-stress syllable. Thus, if the change involves a change from a low tone to a high tone, as in question intonation, then the rise is realized *early* in the stressed syllable in words with Accent 1, but *at the end* of the stressed syllable, and sometimes even *after* the stressed syllable in words with Accent 2 (see also Bennis and Hermans, ch. 32 in this book).

In (1) I give a few representative examples from the dialect of Roermond (East Limburgian), taken from Kats’ (1985) dictionary. Accents are indicated with superscripts.

#### (1) Data from Roermond

|    |                     |          |                       |             |
|----|---------------------|----------|-----------------------|-------------|
| a. | wi: <sup>2</sup> f  | ‘woman’  | ri: <sup>2</sup> tə   | ‘to jerk’   |
|    | hu: <sup>2</sup> s  | ‘house’  | sjlu: <sup>2</sup> tə | ‘to close’  |
| b. | ʃi: <sup>1</sup> f  | ‘disk’   | pi: <sup>2</sup> p    | ‘pipe’      |
|    | dru: <sup>1</sup> f | ‘grape’  | ʃnu: <sup>2</sup> t   | ‘snout’     |
| c. | bre: <sup>1</sup> f | ‘letter’ | e: <sup>1</sup> dər   | ‘everybody’ |
|    | ʃo: <sup>1</sup> p  | ‘sheep’  | jo: <sup>1</sup> mər  | ‘pity’      |

The forms in (2) are Ripuarian, taken from Münch (1904). Whenever possible, I have used the same examples as in (1). Where they are the same I have left out the glosses.

#### (2) Data from Ripuarian

|    |                    |                       |
|----|--------------------|-----------------------|
| a. | wi: <sup>2</sup> f | ri: <sup>2</sup> sə   |
|    | hu: <sup>2</sup> s | sjli: <sup>2</sup> sə |

|    |                     |          |                     |
|----|---------------------|----------|---------------------|
| b. | ʃpi: <sup>1</sup> s | ‘mortar’ | pi: <sup>2</sup> f  |
|    | dru: <sup>1</sup> f |          | ʃnu: <sup>2</sup> t |
| c. | bre: <sup>1</sup> f |          | e: <sup>1</sup> dər |
|    | ʃɔ: <sup>1</sup> f  |          |                     |

The two accents can only occur in stressed, bimoraic syllables (which entails that the syllable must have a long vowel, or a short vowel followed by a tautosyllabic sonorant consonant, as in the Roermond forms *min*<sup>2</sup> ‘mean’ and *min*<sup>1</sup> ‘minus’). From a historical point of view, the two accents have a predictable distribution. If the stressed syllable ends in a mora of relatively low sonority (that is, if the long vowel is high or a falling diphthong, or if the stressed syllable has a short vowel followed by a tautosyllabic sonorant consonant), then it has Accent 2. This is shown by the forms in (1a) and (2a). There is one systematic exception to this regularity. In cases where a schwa has disappeared in the course of history, and if, in addition, the stem ends in an (underlyingly) voiced consonant (either an obstruent or a sonorant), then the stressed vowel gets Accent 1. This is demonstrated by the forms in (1b) and (2b) on the left. The forms on the right in (1b) and (2b) show that Accent 2 occurs if the stem originally ended in a voiceless consonant, even when a schwa had disappeared. The forms in (1c) and (2c) show that stressed syllables with a vowel of greater sonority (i.e. mid or low long vowels) receive Accent 1, regardless of the quality of the stem final consonant. These historical rules apply in the Ripuarian area as well as in the Limburgian area. Even West Limburgian has these rules, as is evident from the dialect of Hasselt (Grootaers and Grauls 1930).

## 2.2. The split of the West Germanic falling diphthongs

In the Limburgian and Ripuarian dialects, the West Germanic falling diphthongs *ai* and *au* underwent a split. Before any of the consonants *h, r, w*, West Germanic non-umlauted *ai* developed differently from (non-umlauted) *ai* in other contexts. The diphthong *au* (whether umlauted or not) developed differently when it was followed by any of the consonants *d, t, s, n, r* or *h* than in other contexts (Goossens 1974: 34). In (3) this split is illustrated. Neerwinden is a Brabantian dialect. Hasselt is a West Limburgian dialect; Maasbracht is right at the border of Central and East Limburgian; Sittard and Roermond are East Limburgian dialects and, finally, Kerkrade is to the east of the Benrath Line, so it is Ripuarian. The Neerwinden data were obtained from the GTRP (the Goeman-Taeldeman-Van Reenen Project), an online database available at <<http://www.meertens.knaw.nl/cms/nl/databanken>>. The Hasselt data are from Grootaers and Grauls (1930). The Maasbracht data were obtained by introspection. The examples from Sittard are from Schelberg (1979). The Roermond data are from Kats (1985), and, finally, the Kerkrade examples are from the *Kirchröadsjer Dieksiejoneer* (1997).

| (3) | Neerwinden    | Hasselt           | Maasbracht                    | Sittard/<br>Roermond           | Kerkrade           |
|-----|---------------|-------------------|-------------------------------|--------------------------------|--------------------|
|     | WGm <i>ai</i> |                   |                               |                                |                    |
|     | hiər          | hi <sup>1</sup> r | hiæ <sup>1</sup> r            | he: <sup>1</sup> r             | hiə <sup>1</sup> r |
|     | diəl          | di: <sup>2</sup>  | d <sup>1</sup> i <sup>2</sup> | d <sup>1</sup> i: <sup>2</sup> | de: <sup>2</sup>   |

| Neerwinden    | Hasselt             | Maasbracht          | Sittard/<br>Roermond | Kerkrade            |
|---------------|---------------------|---------------------|----------------------|---------------------|
| WGm au        |                     |                     |                      |                     |
| bruot 'bread' | bruə <sup>1</sup> t | brud <sup>1</sup> t | bro: <sup>1</sup> t  | bruə <sup>1</sup> t |
| uox 'eye'     | u: <sup>1</sup> x   | ou <sup>1</sup> x   | ou <sup>1</sup> x    | o: <sup>1</sup> x   |

These forms clearly demonstrate that there is a split throughout the Limburgian dialect area. Even the West Limburgian dialect of Hasselt exhibits it. Neerwinden, however, being a Brabantian dialect, does not have the split. Notice also that the dialects greatly differ in the way they realize the split. At this moment it is not particularly clear how all these developments should be accounted for in an insightful way. This is a topic for future research; cf section 6. below.

### 2.3. Sandhi voicing

A striking phenomenon of Limburgian dialects is a process which voices a consonant at the end of a word when it is followed by a word beginning with a vowel. A necessary condition is that the word-final consonant is resyllabified into the onset of the syllable containing the vowel of the second word within the same phonological phrase. Thus, in Maasbracht (at the very boundary of Central and East Limburgian, slightly below the high 4 in Map 18.1), the underlying voiceless *p* in the word [trap] 'stairs' becomes voiced when it is followed by a vowel-initial word like [ɔp] 'up', resulting in [trabɔp] 'up the stairs'. Interestingly, this does not happen when the vowel following the consonant belongs to the same word. Thus the plural of [trap] is [trapə], without voicing.

The same phenomenon can be found in Riparian. Münch (1904: 104) gives the following example:

- (4) Sandhi voicing in Cologne  
 jaŋk medəm 'go with him'

It is also found in Tongeren, in the transitional area in between West Limburgian and Central Limburg. Grootaers (1910: 143–144) gives the following example:

- (5) Sandhi voicing in Tongeren  
 bug ux 'stoop, imp.'

We even find it in Hasselt, in the West Limburgian dialect area. Grootaers and Grauls (1930: 150–151) give the following example:

- (6) Sandhi voicing in Hasselt  
 spœ:<sup>1</sup>dœ:<sup>2</sup>t 'spit out, imp.'

They note, however, that in the Hasselt variety only *t* undergoes this process, and only in verbs. This indicates that West Limburgian is the westernmost area where the process occurs.

### 3. Gone in the east; widespread in Limburgian

In this section I will discuss two phenomena that are typically Limburgian, in the sense that they are widespread in the Limburgian dialect area, and do not occur in any other area, not even in Ripuarian (with one proviso, as we will see). The first phenomenon is vowel lengthening in a closed syllable before a voiceless consonant. The second is the preservation of Accent 2 before an intervocalic voiced consonant.

#### 3.1. Lengthening in closed syllables

There is one particularly clear difference between Ripuarian and Limburgian. In the latter group of dialects, a vowel is lengthened before a historically non-geminate consonant. This even happens when the vowel is located in a closed syllable.

An interesting property of lengthened vowels is that they always receive Accent 2, even if they are non-high. It is not clear why this is the case. Lengthened vowels get Accent 1 if a schwa has been deleted, provided the stem ended in a voiced consonant, as in the Hasselt form *ka:¹f*.

In Ripuarian this process is severely restricted when the consonant closing the syllable is voiceless. The difference is illustrated in (7), where I compare Kerkrade with Hasselt. The former is a Ripuarian dialect and the latter is a West Limburgian dialect.

|     |          |         |         |
|-----|----------|---------|---------|
| (7) | Kerkrade |         | Hasselt |
|     | af       | ‘ape’   | a:²p    |
|     | kaf      | ‘chaff’ | ka:¹f   |
|     | ʃif      | ‘ship’  | sxe:²p  |
|     | bis      | ‘bite’  | be:²t   |
|     | byk      | ‘beech’ | bei¹k   |

Limburgian and Ripuarian forms are much more similar when the consonant closing the syllable is (underlyingly) voiced. This is shown in (8).

|     |          |          |         |
|-----|----------|----------|---------|
| (8) | Kerkrade |          | Hasselt |
|     | da:²x    | ‘day’    | da:²x   |
|     | ʝla:²s   | ‘glass’  | ʝla:²s  |
|     | ε:¹x     | ‘harrow’ | e:¹x    |
|     | wε:²x    | ‘road’   | wiə²x   |
|     | ʃma:²l   | ‘narrow’ | sma:²l  |
|     | ta:²m    | ‘tame’   | ta:²m   |

Perhaps the difference between Ripuarian and Limburgian can be explained from a historical perspective. Ripuarian and Limburgian originally shared the same process of Closed Syllable Lengthening. In Ripuarian, the voiceless consonants were geminated, probably as a result of the Second Consonant Shift. The geminated voiceless consonants shortened the lengthened vowels. Limburgian dialects were not subject to shortening, since they did not undergo the Second Consonant Shift.

### 3.2. Accent 2 before intervocalic voiced consonants

In section 2.1. I showed that high vowels normally have Accent 2. Examples illustrating this were given in (1a) and (2a). No distinction was made between monosyllabic forms and polysyllabic forms. However, there is a very interesting difference between Limburgian and Ripuarian with respect to polysyllables. In Limburgian, high vowels in polysyllabic forms receive Accent 2, as expected. In Ripuarian, on the other hand, high vowels in polysyllabic forms receive Accent 1 if the intervocalic consonant is voiced. This difference between Ripuarian and Limburgian is illustrated in (9).

|                      |                |                        |                      |                       |
|----------------------|----------------|------------------------|----------------------|-----------------------|
| (9) Cologne          |                | Kerkrade               | Maasbracht           | Hasselt               |
| ʃri: <sup>1</sup> və | ‘to write’     | ʃri: <sup>2</sup> və   | ʃri: <sup>2</sup> və | sxre: <sup>2</sup> və |
| fri: <sup>1</sup> və | ‘to rub’       | vri: <sup>2</sup> və   | vri: <sup>1</sup> və | vre: <sup>2</sup> və  |
| dy: <sup>1</sup> vəl | ‘devil’        | dy: <sup>2</sup> vəl   | dy: <sup>2</sup> vəl | dei <sup>2</sup> vəl  |
| hy: <sup>1</sup> zər | ‘house, plur.’ | hu: <sup>1/2</sup> zər | hu: <sup>2</sup> zər | he: <sup>1</sup> s    |

This rule is explicitly mentioned in Münch (1904: 16–17). I would like to point out that not all Ripuarian dialects behave identically with respect to this rule. In particular, western dialects such as that of Kerkrade tend to behave like the Limburgian dialects. The same can be observed in the dialect of the neighbouring (now German) city of Aix-la-Chapelle (Aachen). Hermanns’ dictionary (Hermanns 1970) clearly indicates that this dialect has forms with Accent 2 before an intervocalic voiced consonant. This is support for Welter’s (1938) claim that the dialect of Aix-la-Chapelle is not a purely Ripuarian dialect, but rather shares certain features with Limburgian.

The difference between Limburgian and Ripuarian can be understood in terms of a rule that developed specifically in (parts of) the Ripuarian area. This rule did not spread to the Limburgian dialect area.

It is also interesting to note that the dialect of Eupen is like a Ripuarian dialect with respect to the rule under discussion (the change from Accent 2 to Accent 1 before an intervocalic voiced consonant). According to Welter (1929: 35), this dialect has Accent 1 in this environment. Since Eupen is located in the transitional zone, we can conclude that, with respect to the phenomenon under discussion, some dialects in this zone are more Ripuarian-like than some of the Western Ripuarian dialects. Interestingly, even the dialect of Dülken, which is an East Limburgian dialect, is more Ripuarian-like than the Western Ripuarian dialects. According to Frings (1913: 216), this dialect has Accent 1 before a voiced intervocalic consonant. With respect to the phenomenon under discussion, then, Aix-la-Chapelle and Kerkrade are like Limburgian dialects. On the other hand, the northeast of the East Limburgian area and the south of the transitional area tend to be like Ripuarian.

## 4. Coming from the east; not widespread in Limburgian

In the next section I will discuss a number of phenomena that originated from the east but did not reach the outer west of Limburgian. These phenomena are responsible for differences between the Central and East Limburgian dialects areas, on the one hand, and the West Limburgian area on the other.

## 4.1. Weakening in coda position

The Cologne dialect has a weakening process in which a coronal stop (nasal or obstruent) becomes velar in syllable-final position, i.e. when it is located in the coda. If velarization applies, then a preceding long vowel must be shortened. Some examples (taken from Münch 1904) illustrating this process are given in (10).

## (10) Velarization in Cologne

## a. nasals in word final position

|                    |                             |                    |                   |
|--------------------|-----------------------------|--------------------|-------------------|
| fiŋ <sup>2</sup>   | ‘fine, pred./non-fem-attr.’ | fiŋ <sup>1</sup>   | ‘fine, fem.attr.’ |
| bru <sup>2</sup> ŋ | ‘brown, ” ” ’               | bru <sup>1</sup> ŋ | ‘brown, ” ’       |

## b. obstruents in final position

|      |         |
|------|---------|
| tsik | ‘time’  |
| bruk | ‘bride’ |

## c. nasals in clusters

|                    |         |
|--------------------|---------|
| kiŋ <sup>2</sup> k | ‘child’ |
| muŋ <sup>2</sup> k | ‘mouth’ |

The examples in (10a) show that a nasal in final position becomes velar regardless of the tonal accent; it happens in words with Accent 1 as well as in words with Accent 2. Recall from section 2.1. that only Accent 1 can appear in syllables with a second mora of low sonority if a schwa was dropped. This explains the accentual alternations in (10a). In the forms on the left, there was no inflectional schwa; in the forms on the right, a schwa was deleted.

The examples in (10b) demonstrate that coronal obstruent stops in final position also undergo the change in place of articulation. Finally, the forms in (10c) show that nasals in a cluster are also velarized.

Ripuarian velarization did influence the Limburgian dialects. The distribution of this phenomenon in the Limburgian dialect area is shaped like a boomerang. A small area around Venlo constitutes the northern wing, and the southern wing is a small area around Heerlen and Kerkrade. (Kerkrade, and other Ripuarian dialects in the Netherlands, also have velarization, in much the same way as in Heerlen. Aix-la-Chapelle also behaves like Kerkrade and Heerlen. Heerlen is located in the transitional zone separating East Limburgian from Ripuarian. With respect to velarization, then, Heerlen is like Ripuarian, albeit Ripuarian of the western type [Aachen and Kerkrade].) In (11) I give examples from the dialect of Heerlen, showing that this dialect does have velarization. The forms correspond to those in (10). They were taken from the *Woadbook Heëlesj-Hollendsj* (2000).

## (11) Velarization in Heerlen

## a. nasals in word final position

|                   |                              |                    |                    |
|-------------------|------------------------------|--------------------|--------------------|
| fi:n <sup>2</sup> | ‘fine, pred./non-fem-attr.’  | fiŋ <sup>1</sup>   | ‘fine, fem.attr.’  |
| bru:²n            | ‘brown, pred./non-fem-attr.’ | bru <sup>1</sup> ŋ | ‘brown, fem.attr.’ |

## b. obstruents in final position

|        |         |
|--------|---------|
| bi:²t  | ‘bite’  |
| bru:²t | ‘bride’ |

## c. nasals in clusters

k<sup>2</sup>ɲ<sup>2</sup>k 'child'  
 mo<sup>2</sup>ɲ<sup>2</sup>k 'mouth'

Cologne velarization may have reached the Limburgian dialect area, but it clearly lost some of its force on its way to the west. This is obvious from the fact that in Heerlen it applies in a more restricted phonological environment. Word-final nasals are not affected if they are located in a syllable with Accent 2, as shown in (11a). Secondly, as shown by (11b), single obstruents are not affected at all. This shows that a process, while spreading to the west, can lose some of its force, in the sense that it applies in a more restricted environment. (Some of Hinskens' work [1992, 1998] tries to characterize differences between Ripuarian and Limburgian in terms of processes, such as the historical deletion of postvocalic /r/ if it is followed by a tautomorphic coronal obstruent. This process applies in more general versus more restricted environments, respectively.)

In some Limburgian dialects a second weakening process occurs, viz. palatalization. The dialects with palatalization are located in the East Limburgian dialect area. The dialects in the northeast of the Central Limburgian area also participate in this process. Some examples from the dialect of Roermond illustrating palatalization are given in (12).

## (12) Palatalization in Roermond

## a. palatalization of nasals before coronal stops

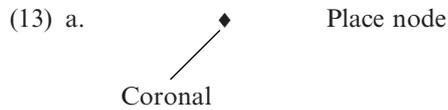
ki<sup>2</sup>n<sup>2</sup>t<sup>j</sup> 'child'  
 mo<sup>2</sup>n<sup>2</sup>t<sup>j</sup> 'mouth'  
 h[a]n<sup>2</sup>t<sup>j</sup> 'hand'

## b. palatalization of /l/ before coronal stops

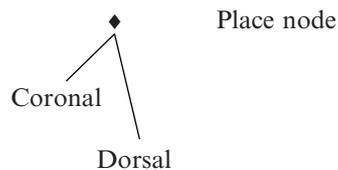
mi<sup>2</sup>l<sup>2</sup>t<sup>j</sup> 'mild'  
 væ<sup>2</sup>l<sup>2</sup>t<sup>j</sup> 'field'  
 γæ<sup>2</sup>l<sup>2</sup>t<sup>j</sup> 'money'

The examples in (12a) show that a nasal is palatalized when it is followed by a coronal stop. In (12b) it is demonstrated that palatalization also applies in a cluster containing /l/ followed by a coronal stop. (All examples with palatalization of /l/ have a front vowel. This is a result of the fact that /l/ was often vocalized after a back vowel and before a coronal stop [e.g. hout < holt 'wood'].) At first glance, it would seem that palatalization is unrelated to velarization. First of all, it only applies in consonant clusters, and secondly, it not only affects nasals, but also liquids. Yet, interestingly, the palatalization area is located in between the two velarization areas of Limburgian, adjacent to these. In fact, one could view the three areas as one large, continuous region where weakening applies. If we look at the two processes in this way, then it becomes possible to look for a deeper connection between velarization and palatalization.

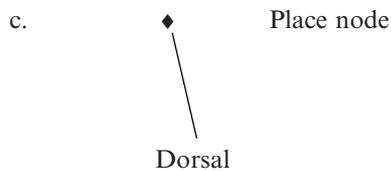
The relation between the two processes can be expressed using the feature Dorsal. This idea was originally proposed in Hinskens and Van Oostendorp (2004). In their proposal, weakening of a consonant in coda position entails that it acquires the feature Dorsal. If the consonant is specified for the feature Coronal (13a), then, after weakening the representation in (13b) arises:



b. Weakening of a coronal consonant



After the insertion of Dorsal, a complex segment is created, containing a Coronal as well as a Dorsal place of articulation specification. We can assume that this is the representation of a palatalized consonant. In the velarization dialects, Dorsal is also inserted, but velarization dialects do not tolerate a complex Place node. They respond to the insertion of Dorsal by removing the underlying Coronal place. After the elimination of Coronal, a velar consonant is derived (cf. 13c).



In this approach, Limburgian palatalization can be seen as the western variant of eastern velarization. Both processes are weakening processes, in the sense that both involve Dorsal insertion. In the western variant, the original Coronal is maintained. In the east (in Ripuarian, but also in 'transitional' Heerlen), however, a new rule developed, which led to the elimination of the original Coronal.

Naturally, there are also differences between palatalization and velarization, in particular with respect to the phonological environments. How can we account for this? Why does palatalization only apply in clusters, including clusters containing *l*? We hope that future research can verify whether the deep connection between palatalization and velarization suggested here can be maintained, even though their context of application is different.

I would like to point out that in the west of Brabant there is another palatalization area. Keymeulen (1983, 1991, 1993) relates this to umlaut, although Goossens (1993) and Taeldeman (1993) argue against this. There is one fundamental difference between the two areas: in the Brabant area a vowel can lose its frontness, which then appears on the following consonant as a secondary articulation. An example is [pynt] 'dot' > [pyntʲ]. This never happens in the Limburgian area. Interestingly, however, there is yet another palatalization area, viz. Meijel (cf. Map 18.1), where palatalization of a consonant seems to be a kind of compensation for the simplification of a falling diphthong. Thus, a form like [mɛit] 'girl' is pronounced in Meijel as [mɛtʲ] (cf. Crompvoets 1991).

## 4.2. The mid, long vowels

The West Germanic diphthong *eo*, and the mid long vowels [e:] and [o:] showed special developments in Ripuarian. The diphthong *eo* was monophthongized and the diphthongs [ie] and [uo] that had evolved from West Germanic [e:] and [o:], returned to their original quality: they were monophthongized to [e:] and [o:] (Goossens 1965). The large majority of the East Limburgian dialects, as well as the dialects in the northeast of Central Limburgian, underwent the same development. The forms in (14) illustrate the difference between Ripuarian and East Limburgian, on the one hand, and the West Limburgian area, on the other.

|                      |          |                     |                     |                     |
|----------------------|----------|---------------------|---------------------|---------------------|
| (14) Cologne         |          | Roermond            | Tongeren            | Hasselt             |
| bre: <sup>1</sup> f  | ‘letter’ | bre: <sup>1</sup> f | bri: <sup>2</sup> f | brei <sup>2</sup> f |
| de: <sup>1</sup> f   | ‘thief’  | de: <sup>1</sup> f  | di: <sup>1</sup> f  | dei <sup>1</sup> f  |
| blo: <sup>1</sup> t’ | ‘blood’  | blo: <sup>1</sup> t | blu: <sup>1</sup> t | bloə <sup>1</sup> t |
| fo: <sup>1</sup> s   | ‘foot’   | vo: <sup>1</sup> t  | vu: <sup>1</sup> t  | voə <sup>2</sup> t  |

Cologne and Roermond have mid vowels. Tongeren, located in the transitional area separating Central Limburgian from West Limburgian, has high vowels. Hasselt, still further to the west, has developed diphthongs, either falling or centering, depending on the quality of the following consonant. It should be pointed out that in Hasselt and Tongeren there is some hesitation about which accent to assign to these vowels.

There is some debate in the literature about these vowels. According to some authors, the mid vowels represent the original West Germanic quality. This view is defended in Stevens (1951), for instance. Goossens (1965), on the other hand, suggests that the mid vowels evolved from an earlier diphthongal stage. This monophthongization process then spread to the Limburgian dialect area in the west.

It is very likely that the latter view is correct. Schellenberger (1974) contains a number of thirteenth-century manuscripts from the city of Cologne. In all these manuscripts the words that have a mid vowel in modern Cologne are spelled with a diphthong. This strongly indicates that in thirteenth-century Cologne the vowels that are now mid monophthongs were diphthongs.

The dialect of Sittard is atypical for an East Limburgian dialect, in the sense that it has developed falling diphthongs where the East Limburgian dialects have mid vowels. Thus, in Sittard the words listed in (14) are realized as follows:

|                               |
|-------------------------------|
| (15) Sittard diphthongization |
| brei <sup>1</sup> f           |
| dei <sup>1</sup> f            |
| blou <sup>1</sup> t           |
| vou <sup>1</sup> t            |

Since Dols (1953) this process is known as ‘Sittard Diphthongization’. This suggests that it is an idiosyncratic phenomenon that occurred in an isolated dialect, but in fact it is not. The same phenomenon occurs in Groningen, in the northeast of the Netherlands. Both areas are connected with each other through Westphalia. (Here we have another, larger boomerang, in which Groningen is the northern wing, and Sittard the southern

one.) Sittard diphthongization, then, is one of the rare examples where Limburgian was influenced by Westphalia, and not by the Ripuarian area, as normally happened.

So far I have shown that the Limburgian dialects were strongly influenced by Ripuarian. From the east, phonological processes reached the Limburgian areas in waves of variable strength. The strongest waves were responsible for the tonal accents and sandhi voicing. Weakening in coda position and monophthongization to long mid vowels had a more restricted effect. I will now turn to the influence from the western side.

## 5. Coming from the west

It is well known that Limburgian dialects have also been influenced from by Brabant dialects. For instance, diphthongization of long high vowels (Stevens 1951) and unrounding of front (round) vowels (Pauwels 1935) are processes that intruded the Limburgian area from the west.

Map 18.01 indicates that the eastbound phenomena had different degrees of strength. This is why Goossens, based on an overview of the classical literature, recognizes various transitional zones. Getelandic is a transition between Brabantic and the West Limburgian area. It is itself divided into West Getelandic and East Getelandic. In between West Limburgian and Central Limburgian, to the south of Genk, there is another transitional zone, again divided into two subareas. To a large extent these distinctions reflect the degrees of strength of the sound changes coming in from the west (cf. also Goossens 1997). In this section I will discuss two phenomena that reached far into the east: diphthongization of long high vowels and unrounding of front (rounded) vowels.

### 5.1. Diphthongization of long high vowels

In the East Limburgian dialects, WGM long high vowels did not normally undergo diphthongization, although in free position (at the end of a syllable) it applied with some regularity in some dialects. The examples in (16) show that Maasbracht does not have diphthongization at all, not even in free position. In the West Limburgian area, and in the transitional zone separating West Limburgian from Central Limburgian, diphthongization is not unusual. In (16) I illustrate the difference between the two areas, comparing the dialects of Tongeren (Grootaers 1910) and Maasbracht, in the very east of the Central Limburgian area.

#### (16) Diphthongization of long high vowels in Tongeren and Maasbracht

##### a. Tongeren

| front, non-round   |          | front, round        |          | back               |          |
|--------------------|----------|---------------------|----------|--------------------|----------|
| dai <sup>2</sup> k | 'dike'   | flai <sup>2</sup> m | 'phlegm' | dau <sup>1</sup> f | 'pigeon' |
| lai <sup>2</sup> f | 'body'   | klai <sup>1</sup> s | 'kluis'  | hau <sup>2</sup> s | 'house'  |
| lai <sup>2</sup> k | 'corpse' | prai <sup>2</sup> s | 'German' | mau <sup>1</sup> l | 'muzzle' |
| lai <sup>1</sup> n | 'line'   | klai <sup>2</sup> t | 'clod'   | mau <sup>2</sup> s | 'mouse'  |

## b. Maasbracht

| front, unround     |          | front, round        |          | back               |          |
|--------------------|----------|---------------------|----------|--------------------|----------|
| di: <sup>2</sup> k | ‘dike’   | fly: <sup>1</sup> m | ‘phlegm’ | du: <sup>1</sup> f | ‘pigeon’ |
| li: <sup>2</sup> f | ‘life’   | kly: <sup>1</sup> s | ‘kluis’  | hu: <sup>2</sup> s | ‘house’  |
| li: <sup>2</sup> k | ‘corpse’ | pry: <sup>2</sup> s | ‘German’ | mu: <sup>1</sup> l | ‘muzzle’ |
| li: <sup>1</sup> n | ‘line’   | kly: <sup>2</sup> t | ‘clod’   | mu: <sup>2</sup> s | ‘mouse’  |

These examples demonstrate that Maasbracht did not undergo diphthongization at all, whereas Tongeren did. Note that the diphthongized front, rounded vowel is the same as the diphthongized non-round vowel. This indicates that, to some extent, Tongeren was subject to unrounding. (In almost all forms in [16] the tonal accents of the two dialects are the same. There is only one exception, viz the form for ‘phlegm’. Roermond, close to Maasbracht, has the same accent as Maasbracht in this form [Kats 1985].)

Recall from section 4.2. that the monophthongization process creating long mid vowels did not reach Tongeren, with the result that they are realized as long high vowels in this dialect, as illustrated in (14). It is evident that these vowels do not undergo diphthongization, which suggests that the creation of the long high vowels, which correspond to Ripuarian and East Limburgian mid vowels, took place later in the history than the diphthongization process.

Diphthongization reached quite far into the east, even as far as Maastricht. However, in this dialect it interferes with the accents in a very interesting way. Maastricht high vowels undergo diphthongization, but only if they have Accent 1. This phenomenon is illustrated in (17). The examples are from Endepols’ (1955) dictionary. They are organized in such a way as to show that, in Maastricht, diphthongization can create alternations, due to the fact that it is conditioned by Accent 1. In (17) and (18), the singular has Accent 1, because a schwa was dropped and the stem ends in a voiced consonant (cf. section 2.1.). In the plural no schwa has been deleted, so that in this environment Accent 2 occurs. We can see, then, that diphthongization applies only if it is accompanied by Accent 1. This happens in the singular, but not in the plural.

## (17) Diphthongization under Accent 1 in Maastricht

| singular               | plural                  |           |
|------------------------|-------------------------|-----------|
| beg[ɛi <sup>1</sup> ]n | beg[i: <sup>2</sup> ]ne | ‘beguine’ |
| d[ɔu <sup>1</sup> ]f   | d[u: <sup>2</sup> ]ve   | ‘pigeon’  |
| pr[ɔu <sup>1</sup> ]m  | pr[u: <sup>2</sup> ]me  | ‘plum’    |
| dr[ɔu <sup>1</sup> ]f  | dr[u: <sup>2</sup> ]ve  | ‘grape’   |

Compare this with the dialect of Genk, where diphthongization applies regardless of the accent. The following examples are taken from Goossens (1959).

## (18) Unconditional diphthongization in Genk

| singular               | plural                  |
|------------------------|-------------------------|
| beg[ɛi <sup>1</sup> ]n | beg[ɛi <sup>2</sup> ]ne |
| d[ɔu <sup>1</sup> ]f   | d[ɔu <sup>2</sup> ]ve   |
| pr[ɔu <sup>1</sup> ]m  | pr[ɔu <sup>2</sup> ]me  |
| dr[ɔu <sup>1</sup> ]f  | dr[ɔu <sup>2</sup> ]ve  |

Maastricht diphthongization is interesting for a variety of reasons. First, it shows that a process can become restricted to a more limited phonological environment when it moves away from the region where it originally developed. But there is yet another, much more interesting aspect of the Maastricht process. In terms of phonological theory, it remains largely a mystery how to express the interaction between accentual structure and diphthongization. One serious attempt is made in Gussenhoven (2007). Gussenhoven proposes a functionally motivated enhancement principle, based on perception. The problem with this approach is that it does not account for the fact that, in Maastricht, diphthongization is a *grammatical* phenomenon, because it is involved in a morphological alternation. A separate, grammatical principle must be invoked anyway, so that the question why diphthongization only applies under Accent 1 remains unanswered.

## 5.2. The unrounding of front vowels

The unrounding of front vowels is another process that is often mentioned as a Brabantian process that intruded into the Limburgian dialect area. According to Pauwels (1935/1996: 132), the original source of this process is the city of Leuven. Verstegen (1941) investigated the exact distribution of this phenomenon, and found that in the Limburgian dialect area the process almost exclusively applies in Central Limburgian, and in the transitional zone between West Limburgian and Central Limburgian. According to Verstegen, it does not reach Tongeren, so that in the south of the transitional zone, it seems to be absent. (In the preceding section we saw that Tongeren does exhibit traces of this process [cf. the examples in (16)].)

Hasselt is located in a small unrounding corridor, leading from the main (unrounding) area in Central Limburgian (and the transitional zone) all the way to the Accent Line (labeled 9 on Map 18.01), where it stops abruptly. In (19) I give examples from Hasselt illustrating the process, taken from Grootaers and Grauls' (1930) description of this dialect. To show that in the Hasselt examples the vowels are unrounded, the corresponding forms from Maasbracht are also provided.

### (19) Unrounding in Hasselt

| Hasselt  |            | Maasbracht           |
|--|------------|----------------------|
| Short vowels, arranged according to height           |            |                      |
| dɪ <sup>1</sup>                                      | 'thin'     | dʏ <sup>1</sup>      |
| mɪ <sup>2</sup> t                                    | 'coin'     | mʏ <sup>2</sup> tʃ   |
| brɛk <sup>1</sup>                                    | 'bridge'   | brœk                 |
| bɛl <sup>2</sup> t                                   | 'bump'     | bœ l <sup>2</sup> tʃ |
| Long/lengthened vowels, arranged according to height |            |                      |
| be: <sup>1</sup> l                                   | 'hangman'  | bø: <sup>1</sup> l   |
| de: <sup>2</sup> r                                   | 'door'     | dø: <sup>2</sup> r   |
| ʃɛ: <sup>1</sup> və                                  | 'to shove' | ʃy: <sup>1</sup> və  |
| kɛ: <sup>1</sup> və                                  | 'to sigh'  | ky:m <sup>1</sup> ə  |

Note that the accent diacritic on the form *brɛk<sup>1</sup>* is not a mistake. Recall from section 2.1. that, normally, only stressed bimoraic syllables can show a contrast between Accent

1 and Accent 2. This means that it must contain a long vowel, or a short vowel followed by a sonorant consonant in the same syllable. Most dialects, including Maasbracht, do not show any contrast in syllables that contain a short vowel followed by an obstruent in the same syllable. This is why there is no accentual diacritic in the Maasbracht form that corresponds to Hasselt *brɪk*<sup>1</sup>. Other dialects that do allow a contrast in this environment are Moresnet (Jongen 1972b) and Tongeren (Grootaers 1908–1911). The accentual contrast on syllables which have a short vowel followed by an obstruent in the coda is another phenomenon that is deeply problematic from the perspective of modern phonological theory.

In this section I have discussed the two processes that are most frequently cited as processes that intruded the Limburgian area from the west: diphthongization and unrounding.

## 6. Suggestions for further research

In the preceding sections I already mentioned some of the problems of Limburgian phonology that still await a solution. In section 2.2. I raised the question how the different realizations of the old falling diphthongs can be diachronically related to each other. In section 4.1. I suggested that palatalization and velarization are two different instantiations of one and the same phenomenon, viz. weakening in coda position. If this idea is on the right track, then it is predicted, at least in principle, that velarization is a more advanced stage, in the sense that it has developed from palatalization. This would mean that velarizing dialects were palatalization dialects at some point in time.

By far the most important problem of Limburgian phonology is the question of how the two tonal accents, Accent 1 and Accent 2, should be represented phonologically. In the recent literature, it is usually claimed that, at the underlying level, the difference must be expressed in terms of tones. This is the approach taken by Hermans (1994). This view has become dominant, due to the work of Gussenhoven and his colleagues (Gussenhoven 1999, 2000b, Gussenhoven and Peters 2008). In my opinion, however, this approach is deeply problematic. If the Limburgian accents were really phonologically tonal, one would expect them to show tonal rules like ‘real’ tone languages. This, however, does not seem to be the case. Since Fromkin (1978) we know that tonal quality and vowel quality do not seem to interact, at least not phonologically. To give one imaginary example of what this type of interaction would look like, spreading of a low tone might be blocked if the quality of the target vowel is high. This kind of process never seems to happen in the tonal languages of the world. Interestingly, however, in the Limburgian dialects there does seem to be a relation between ‘tone’ and vowel quality. Recall the forms in (17), which showed that in this dialect high vowels diphthongize, but only if they have Accent 1. At first sight, this seems to suggest that vowel quality and tonal quality do interact, which makes the Limburgian dialects typologically odd. Perhaps the Limburgian tonal accents are not really tones phonologically, but should be approached from another point of view.

If the Limburgian tonal accents are not tones, then what are they? Recently, a new approach was sketched in Hermans (2009) and Hermans and Hinskens (2010). Accord-

ing to these authors, the two tonal accents should be represented in terms of foot structure. The idea is that Accent 1 is an even trochee, whereas Accent 2 is an uneven trochee. This solution explains why diphthongization of high vowels in Maastricht only applies in Accent 1 in a more straightforward way. In an uneven trochee, the second mora occupies a weak position, and for that reason it cannot dominate an independent segment. In a diphthong, the second mora contains an independent segment. Consequently, in an uneven trochee diphthongization is blocked, at least if the relevant constraints are sufficiently highly ranked, as is the case in Maastricht.

Of course, this hypothesis remains to be tested. We need to develop a full inventory of all the segmental processes in the Limburgian and Ripuarian areas that interact with accent. This enterprise is rather urgent, because, under the pressure of the standard languages, these dialects will probably change the phonology of the accents.

## 7. Conclusion

In this contribution I have presented a number of characteristic phonological features of the Limburgian dialects. I have done so following the oldest tradition of Limburgian linguistics, classifying phenomena in terms of east-bound and west-bound. The west-bound processes were further divided into more or less ‘far reaching’ processes. The processes traveling far into the west were: 1) the tonal accents, 2) the split of the West Germanic falling diphthongs, 3) sandhi voicing, and 4) lengthening in closed syllables. I have claimed that the latter process is one of the two phenomena unique for Limburgian, because in the region where it came from the process disappeared, due to the High German Consonant Shift. The second phenomenon making Limburgian unique is the appearance of Accent 2 before a voiced intervocalic consonant. This is a result of the fact that in the region where Limburgian got its accents from a rule developed that changed Accent 2 into Accent 1 in this position.

I have discussed two processes that did not travel very far into the west: weakening in coda position and monophthongization of older diphthongs to long mid vowels.

I have proposed that the palatalization of coronal clusters is closely related to velarization. The main difference is that velarization involves the elimination of Coronal, in order to avoid a complex Place Node, after the insertion of the Dorsal feature. Finally, I discussed the two processes that are most frequently cited as western innovations: diphthongization of high vowels and unrounding.

I hope to have shown that the Limburgian dialects offer a rich array of interesting phenomena. Some of these are well understood; others are poorly understood, or not at all.

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