30. Perception of geographically conditioned linguistic variation

1. Introduction

Over the course of several decades, geographically conditioned linguistic variation in the Netherlands and the Dutch speaking part of Belgium has been investigated from many different perspectives. In our view, the various methodological approaches can be divided into two fundamentally different types.

In the first type, data about the linguistic characteristics of dialects are usually gathered by means of questionnaires, sometimes on the basis of recordings of conversational speech, collecting information about what people actually say. The linguistic products, recorded in written or auditory form, are subsequently subjected to (simple or more complex) data analysis techniques. The final goal of such work is to draw a linguistically based map showing the distribution and boundaries of dialect features and dialect areas. Some of the more well-known examples of these 'objective' techniques include the construction and tracing of isoglosses and isogloss bundles (e.g. Weijnen 1941), feature frequency counts and correlations (Hoppenbrouwers and Hoppenbrouwers 2001) and the calculation of Levenshtein distances between matched segment strings (e.g. Heeringa 2004). These traditional-dialectological and computational techniques have been discussed elsewhere (see the contributions by Niebaum and Taeldeman, and by Heeringa and Nerbonne) in this book and will not be discussed here.

In the second type of research, the basis of the investigation is formed not by objectively assessed linguistic elements (written or spoken dialect words, sentences or texts) but by the dialect speakers' subjective awareness of linguistic variation. The global perceptions which dialect speakers hold of the degree of similarity or difference between their own dialect and neighboring dialects is used as input to draw dialect maps. Here, the metalinguistic knowledge and intuitions of dialect speakers rather than their linguistic competence form the point of departure to classify dialects. In other words, the emphasis is on what people think rather than what they do. This type of research is referred to as perceptual dialectology by Preston (1981). We note that the sort of knowledge reflected in laymen's opinions about dialects may be based not only on perception per se, but also on second- (or third-)hand information, perhaps not amounting to more than popular prejudice.

It is also worth mentioning that, as "objective" techniques have become more sophisticated, resulting in ever more methods by which language varieties might be distinguished, many researchers have felt the need to "validate" objective methods by mean

of subjective, behavioral tests, involving perspectives of the second type (Heeringa 2004; Heeringa et al. 2006).

The term 'perceptual dialectology' was first used in Preston (1981) but developed fully in 1999. According to Preston, perceptual dialectology "represents the dialectologist's-sociolinguist's-variationist's interest in folk linguistics. What do non-specialists have to say about variation? Where do they believe it comes from? Where do they believe it exists? What do they believe is its function?" (1999: xxv). When comparing scientific and folk characterizations of a dialect area, the dialectologist may discover, for example, "that there may be perceived folk dialect areas where there are none scientifically and vice versa" (ibidem). According to Preston the earliest systematic technique for determining folk perceptions of dialectal variation was developed by the Dutch dialectologist Weijnen, when he devised the so-called arrow method ('*pijltjesmethode*') and used it to draw a map of one of the southern Dutch provinces in 1946 (see Section 2.1.).

In our contribution we will give an overview of the literature reporting on the perception of dialect variation by laymen in the Low Countries. We will use a broad definition of perception, looking not only at non-linguists' subjective views of dialect similarity and difference, but also at their ideas of dialect variation, both spatially and semantically. Concretely, we distinguish three different aspects of perception.

1. Dialect distance. What ideas (incorrect or correct) do laymen hold of the degree of similarity between language varieties (both standard and non-standard)? What (kind of) knowledge and intuitions do they have of the typical characteristics of dialects? This aspect is essentially descriptive in nature, and forms the basis for the following two aspects.
2. Dialect identification. To what extent can laymen identify the place or region where dialects are spoken? What are their identifications based on? This aspect involves the spatial interpretation of dialect characteristics.
3. Dialect intelligibility. To what extent are laymen able to derive semantic meaning from spoken samples of other dialects? What dialect characteristics facilitate or obstruct interdialectal comprehension? This aspect pertains to the communicative consequences of dialect variation.

Studies of these three aspects will be dealt with in chronological order. In Section 2., the older literature will be presented, covering the period between 1946 and (roughly) 2000. The beginning is marked by the publication of an arrow-based map by Weijnen. The end of this period was chosen somewhat arbitrarily and is not adhered to very rigorously, as there is no clear break in the line of perceptual research conducted. We regard research after 2000 as recent. This recent literature is presented in Section 3. In Section 4. a short overview of ongoing research is given, and finally, in Section 5., some gaps in our knowledge of perceptual-dialectological processes and phenomena are signaled and desiderata for future research are formulated.

2. Older literature

2.1. Dialect distance

According to Goeman (1989), the first systematic investigation of the perception of dialect distance by non-linguists in the Netherlands was carried out by Willems in 1886.

Willems' survey included the question *In which place(s) in your area does one speak the same or about the same dialect as you do?*, a question which was also included in later surveys. Goeman used the unpublished answers to this question to construct a so-called arrow map of Willems' data posthumously. The dialects which according to the informants showed a strong similarity with their home dialect were connected by arrows. The areas showing no or few connecting arrows were considered to be subjective dialect boundaries. Using the 1886 data gathered by Willems, Goeman visualized the perceptual dialect landscape as it existed more than a hundred years ago. A small part of this map has been reproduced in the English translation of Goeman's 1989 article (Goeman 1999).

Generally, Weijnen rather than Willems is seen as the first Dutch dialectologist exploiting the metalinguistic awareness of dialect distance by dialect speakers. The method that he applied was labeled the '*pijltjesmethode*' in Dutch, translated by Preston (1999: xxvi) into English as the 'little-arrow method'. Weijnen used the answers of dialect speakers to the dialect similarity question given above in a dialect survey carried out in 1939 by − what is now known as- the Meertens Instituut. In 1944 Weijnen started applying these principles to the southern Dutch province of North Brabant, where he was born (Weijnen 1946). Some years later he constructed an arrow map of the southern Dutch province of Limburg (Weijnen 1947).

In 1955, on the basis of the same survey from 1939, Rensink constructed a generalized subjective map of the Netherlands as a whole and provided it with extensive comments (for an English translation, see Rensink 1999). He calls it 'a tentative sketch' and states that the attempt was only partially successful, due to missing informants, contradictory answers, and unclear boundaries. On the whole, Rensink appears to have been rather dissatisfied with the result.

Finally, again using the same data from the 1939 survey, Daan (Daan and Blok 1969) made a definitive map of the Dutch speaking area. For the Netherlands, she applied a wide variety of methods to correct the arrow map, looking at existing maps with isoglosses, consulting colleagues, interviewing dialect speakers, examining dialect literature, carrying out personal investigations, and using her intuitions. Laymen's perceptions were not included in the part of her map pertaining to the Dutch speaking part of Belgium, since no network of informants was available. There Daan only used the expertise of dialect speaking dialectologists. In her map, Daan not only indicated the boundaries between dialects at a 'horizontal' level, but she also expressed the 'vertical' relationship of dialects with the standard language, using color. The darker the color, the larger the linguistic distance from the standard.

Later on, the arrow method was applied, *inter alia*, to the Dutch-German border region north of the river Rhine (Kremer 1984) to examine the perceptual impact on the local dialect continuum of the state border. And even very recently, Giesbers used the principles of the arrow method with the same research aim (Giesbers 2008, see Section 3.1.).

The drawing of the arrows on the map was done by hand and the decision where to locate dialect boundaries was made on visual grounds by the dialectologist. Goossens (1977: 167) suspects, and this is confirmed by remarks made by Rensink (1955) and Daan (Daan and Blok 1969), that dialectologists were influenced in this process by expert ideas about the dialect reality. In any case, no statistical analysis was performed. Later research, in which language users' views on linguistic distance were probed, used more sophisticated methods. The majority of these studies were experimental in nature. In

contrast to the arrow based studies, they focused on the linguistic distance not between non-standard dialects mutually, but between non-standard dialects and SD. (See Jansen and Marynissen (Chapter 4 this volume), Geeraerts and Van de Velde, Chapter 28, and Haeseryn, Chapter 37, for differences between the standard languages in Belgium and the Netherlands.) Moreover, in general, judgments were elicited on the basis of auditorily presented dialect fragments, which makes the task more concrete and less subject to influence from second-hand information. Subjects were requested to indicate perceived distance to the standard language by means of numerical ratings, mostly on 5-, 7- or 10-point scales. Finally, probably for practical reasons, (language) students were often used as subjects, who can be assumed to be more highly educated and less dialectologically naïve than the informants originally used to construct arrow maps. On the other hand, the students may have had a more superficial knowledge about dialects.

Van Hout and Münstermann (1981) presented audio recordings of speech fragments from nine Dutch dialects to language students from the southeastern part of the Netherlands. All fragments were identical as far as content and structure were concerned, and read out loud by native speakers of the varieties involved. The listeners were asked to judge the degree of standardness of the fragments. In addition, the listeners were asked to indicate on a map of the Netherlands where they thought the dialects were spoken (see also Section 2.2). Sophisticated methods were developed to quantify the distance between the indicated dialect origin and the place where the standard language is assumed to be spoken in its "purest" form. The correlation between the perceived linguistic distance of the dialect fragments from SD and their estimated distance from the geographical center of SD was quite high ($r = 0.78$). This high positive correlation (like all correlations, for that matter) says nothing about the direction of the influence, however. It is possible that the listeners derived geographic distance from linguistic distance ('this variety sounds rather standard, so it must be spoken in the western part of the country'), but it is also possible that the listeners were influenced in their estimation of linguistic distance by their judgment of geographic distance ('this sounds like a Limburg dialect, so it must be very different from SD, which is in the West').

Besides geographic distance, other relationships with perceptual linguistic distance have also been suggested in the literature. Diederen, Hos, Münstermann, and Weistra (1980), presented part of the same material as Van Hout and Münstermann (1981) to student teachers. A relationship was found between the perceived linguistic distance of the dialects from SD and attitudinal ratings, pertaining to the dialects' inherent usefulness, their acceptability and use in education, and their influence on learning and educational success. Also, Van Bezooijen (1994) found strong negative correlations between ratings of the perceived distance from SD and aesthetic evaluations (ugly-beautiful), i.e. the less standard a dialect was perceived, the uglier it was found. In addition, Van Bezooijen found a strong negative correlation between ratings of divergence and estimated intelligibility (see Section 2.3.). In Van Bezooijen's study, semi-spontaneous speech fragments (descriptions of drawings depicting daily events) were presented in four Dutch language varieties. The subjects consisted of both adults and children. Just as in Van Hout and Münstermann (1981), and the findings from correlational analyses generally, it is difficult to assess cause and effect in this study as well.

The studies discussed thus far examined global perceptions of linguistic distance and their relationship to other global characteristics. The question remains what linguistic elements these global distance judgments are based on. Gooskens (1997) investigated the

relative contribution of prosodic and non-prosodic information to the perceived linguistic distance of language varieties to the SD of the Netherlands. She looked at five varieties of Dutch, namely that spoken in Bedum in the northeast of the Netherlands, in The Hague in the midwest of the Netherlands, in Maastricht in the southeast of the Netherlands, of SD of Belgium, and in Uitbergen in central west Belgium. Prosodic information includes all features which are not linked to specific vowels and consonants, i.e. intonation, speech tempo, and speech loudness, while non-prosodic information comprises syntax, lexicon, morphology, and segmental phonetics and phonology. Gooskens used an experimental set-up in which prosodic and non-prosodic information, respectively, were removed from speech by means of signal manipulation techniques (monotonization and filtering). Listeners' judgments of the linguistic distance of the two manipulated, 'incomplete' versions of dialect fragments were compared with the judgments of the non-manipulated, original dialect fragments. It appears that non-prosodic information plays a more important role for the perceived divergence from SD than prosodic information. However, the role of prosody cannot be completely ignored. Even when hearing only prosody, SD speaking listeners can still distinguish between SD of the Netherlands on the one hand and the other five varieties on the other hand.

We want to conclude this section with a brief sketch of the work done by Van Bezooijen and Ytsma (2000) on the perceived divergence of accents. They asked dialect speakers to read text passages in SD as well as they could. The speech fragments were rated on a standard-non-standard scale by language students from Nijmegen. All speakers from the south (Limburg and Flanders) were perceived to have strong accents. The perceived broadness of the northern accent (Friesland and Groningen) and of the western accent (South Holland) varied considerably between speakers, but on average it was rather weak. The result for the speakers from South Holland was to be expected, as this province is part of the Randstad, i.e. the region where the standard is generally assumed to be spoken most "purely". However, the difference in the broadness of accent between the north (weak) and the south (strong) could not be predicted from what is already known. Also, it is not clear to what extent the results are determined by the regional origin of the listeners. Interestingly, previous perceptual research with dialect rather than accent fragments from the same speakers (Van Bezooijen 1994) had shown that the first languages of the Groningen and Flemish speakers were perceived as equally divergent from SD. In other words, the divergence of speakers' accents in SD cannot be predicted from the divergence of the same speakers' dialects.

2.2. Dialect identification

In the preceding section, studies of laymen's views on linguistic distance were presented. The present section focuses on the perceptual relationship between dialect characteristics and geographic origin. To what extent are dialectologically untrained inhabitants of the Netherlands and the Dutch speaking part of Belgium able to locate dialect or accent fragments originating from their own or the other side of the border? Quite a number of empirical studies have addressed this particular question.

Boets and De Schutter (1977) presented dialect fragments produced by speakers from 14 places in the Dutch speaking part of Belgium to listeners from Duffel, close to the city of Antwerp. The subjects were asked to indicate on a map where they thought the

speakers came from. Dialects close to Duffel were better identified than dialects further away. Moreover, men were better at locating the dialects than women, higher social classes were better than lower social classes, and older listeners were better than younger listeners. The differences were not tested statistically.

Deprez and De Schutter (1980) conducted a study similar to Boets and De Schutter's, but they adopted a cross-national perspective. They collected narrative speech in five Dutch dialects spoken in the Netherlands, four spoken in Belgium, SD of the Netherlands and SD of Belgium. The fragments were presented to 100 male listeners from Antwerp and 100 male listeners from Rotterdam. They were asked to situate the fragments on a map. The listeners from Antwerp performed better than those from Rotterdam. Also, performance was related to the geographic distance between the place where the listeners came from and the place where the dialect was spoken. In this study, no systematic difference was found as a function of class or age.

Van Hout and Münstermann (1981) asked language students from the southeast of the Netherlands to place the geographic origin of read fragments of nine dialects (see Section 2.1.) on a map. Accuracy varied considerably. Both dialects close to the standard (Amsterdam, The Hague) and very different from the standard (Kerkrade) were well identified. The authors suggest that direct contact as well as contact via the media may have played a role.

Knops (1984) investigated the identifiability of regional accents (regional variants of the standard language varying mainly in the pronunciation of vowels and consonants and in prosody) rather than dialects (which in addition vary in lexical, morphological, and syntactic respects). She presented semi-spontaneous speech fragments (descriptions of the plot of a film recently seen) from ten speakers (five from Belgium and five from the Netherlands) to 45 language students from Leuven (Belgium) and 40 from Nijmegen (the Netherlands). The listeners were asked whether they thought the speakers was from Belgium or the Netherlands (forced choice) and to indicate which region the speaker came from (open choice). Identifying the nationality of the speakers presented no problem (96% correct for both groups of listeners). It appeared to be very difficult, however, to identify the regional origin of the speakers. There were many missing responses. Overall, not more than 12% of the Belgian listeners and 20% of the Dutch listeners managed to identify the geographical region the speakers originated from. As expected, subjects identified the regions in their own country more easily than the regions in the other country.

Van Bezooijen (1995) collected semi-spontaneous speech (descriptions of pictures of everyday situations) from speakers of four language varieties in the Dutch language area: SD as spoken in the Netherlands, and the dialects of The Hague (South Holland), Bedum (Groningen), and Tielt (East Flanders). Fragments were presented to seven groups of listeners of different ages (9 to 12 year old children and adults) from different areas in the Netherlands. They were asked to indicate the speakers' regional origin on a map. Responses were counted as correct if subjects marked the right province. The adults were better able to identify the language varieties than the children, but both groups identified the regions correctly above chance. The effect of the regional background of the listeners was small.

Again, analogously to the perception of dialect distance, an important question is what the identification choices of the listeners are based on. What cues do they use, at what linguistic level? This question was first addressed in Hagen (1980). Using a written

questionnaire, he asked Belgian primary school teachers and Dutch students what they thought that the differences between SD as spoken in the Netherlands and as spoken in Belgium consisted of. No audio recordings were presented. Both groups of respondents expressed the opinion that the largest difference between the two standard accents involved pronunciation, next in vocabulary, and least in syntactic structure.

The results reported by Hagen were confirmed by Knops (1984). In Knops' identification study, audio recordings of narratives in regionally colored variants of the standard languages of the Netherlands and Belgium (see above for further details) were presented. A majority of both the Dutch (84%) and Belgian listeners (95%) claimed to have mainly based their identification on pronunciation characteristics. Vocabulary was also claimed to have played an important role (48% for the Dutch listeners, 34% for the Belgian listeners), which suggests that the regional variants of the standard languages of the Netherlands and Belgium are not merely accents in the true sense of the word. Intonation came third, with percentages of 11 for the Dutch listeners and 23 for the Belgian listeners. Finally, syntactic information was claimed to have been the least important for distinguishing between the regional variants of the standard languages (12% and 5% for the Dutch and Belgian listeners, respectively).

Both Hagen (1980) and Knops (1984) asked their subjects what linguistic level they *thought* they had used to distinguish between varieties of the standard language. Pronunciation was mentioned most often. Van Bezooijen and Gooskens (1999) assessed the role of pronunciation experimentally. To this end, dialect speakers from Bedum, The Hague, Valkenburg (in Limburg) and Tielt read out text passages in the standard language with fixed lexical, morphological and syntactic properties. The only thing that could vary was the (segmental and supra-segmental) phonetic realization. So, in this study listeners could only make use of phonetic cues for determining the geographic origin of the speakers. The fragments from The Hague were easiest to identify, followed by Valkenburg, Bedum and Tielt, in that order. The percentages of correct identification were compared with those obtained in the experiment with the non-manipulated spontaneous dialect samples presented in Gooskens (1997). Somewhat surprisingly, it appeared that more linguistic information does not automatically lead to a higher percentage of correct identification. The explanations proposed by the authors are too complex and varied to be summarized here; the interested reader is referred to the original publication.

Rather unfortunately, Hagen (1984), Knops (1984), and Van Bezooijen and Gooskens (1999) all happened to focus on the identification of (variants of the) Belgian and Dutch standard rather than non-standard varieties. As the variation within varieties of the standard language is smaller than that between local dialects, these studies do not make clear what the role of various linguistic levels and elements is in a more complex identification situation. Gooskens (1997) conducted an experimental study in which, in addition to the two standard varieties of Dutch, a number of 'true' urban and rural dialects were included, namely those of Bedum, The Hague, and Maastricht in the Netherlands and of Uitbergen in Belgium (see Section 2.1.). The aim of the study was to assess the relative contribution of prosodic and non-prosodic information to the identification of Dutch language varieties, both standard and non-standard. Gooskens used spontaneous speech fragments in their original form and in two manipulated forms, one with only prosodic information and one with only non-prosodic information. All stimuli were presented to groups of listeners from the same places as the speakers in a completely crossed (so-called 'Latin square') design. This means that each listener heard one-third part of the

stimulus material in each of the three different versions, and yet heard materials in each of the six varieties in equal proportions, and never heard the same speech fragment twice. Identification was done step-wise at four different levels: country, region, province, and place. A map of the whole area was given to the subjects to facilitate the task.

Just as in the estimation of linguistic distance (see Section 2.1.), Gooskens (1997) found that verbal information is more important than prosodic information. Listeners who were not from the place where the stimulus dialect was spoken could not identify the speech fragments above chance when only prosodic information was provided. Nevertheless, they still appeared to make − limited − use of prosodic information. This was deduced from the fact that they identified SD from the Netherlands and the dialects of Maastricht and Uitbergen significantly better in the original, complete version than in the version where prosody had been removed. Apparently, prosody contains relevant supplementary information. When listening to speech fragments in their own language variety, identification was much easier. Then, the identification score was above chance in all three versions. Not surprisingly, this shows that, especially at the prosodic level, familiarity is very important for successful identification.

Hagen (1980), Knops (1984), Gooskens (1997) and Van Bezooijen and Gooskens (1999) were all empirical studies in the sense that they involved the opinions or judgments of subjects. In addition, indirect evidence of the relative importance of different linguistic elements for the identification of language varieties can be deduced from the nature of shibboleths. The term 'shibboleth' refers to an utterance with one or more characteristics enabling a listener to determine whether a speaker is a native speaker of the same language (variety) or rather of a different language (variety). For example, during the second World War, the Dutch place name *Scheveningen* was used to assess whether a speaker was Dutch (pronouncing the initial consonant cluster as /sχ/ and the vowel in the third syllable as lax mid-high) or German (with /ʃ/ in the cluster and a high front vowel). This type of shibboleth includes sounds that (1) are typical of one language (variety) and (2) are difficult to pronounce by speakers of another language (variety). Many shibboleths only involve the first element and not the second. In any case, shibboleths indicate linguistic elements that can potentially be used to identify a speaker's linguistic background, at a national, regional, or local level. It can be hypothesized that it is easier to identify a language if it is characterized by many, clearly perceived, and widely known shibboleths.

The most thorough analysis of shibboleths of Dutch language varieties is presented by Taeldeman (2003). He bases his typology on two data collections. The first collection consists of the answers to a question about the shibboleths gathered by means of a 1947 dialect questionnaire. These answers had previously been discussed by Weijnen (1961). The second collection consists of the results of a 2002 dialect questionnaire. According to Taeldeman, about 90 % of the collected shibboleths are solely related to pronunciation, and about 5 % involve pronunciation and lexicon simultaneously. Shibboleths involving only the lexical or syntactic level are rare. This suggests that language users are most attentive toward or most sensitive to differences at the segmental level of speech, which in turn would suggest that this level plays the largest role in the estimation of language distance and identification. This is in line with the outcomes of the empirical studies mentioned above. The fact that pronunciation differences often manifest themselves at the local (dialect) level, more often so than grammatical differences, might also play a role.

Shibboleth formation appears to be related to the degree to which a feature is spread geographically. Taeldeman presents *h*-dropping as an example. Although non-standard *h*-dropping is a widespread phenomenon in the Dutch speaking part of Belgium, there are no *h*-dropping shibboleths in this area. On the other hand, there are over ten different *h*-dropping shibboleths in the Netherlands, where this phenomenon is mostly confined to small regions and isolated localities (e.g. Volendam and Enkhuizen). Obviously, in the Netherlands the occurrence of *h*-dropping in a dialect fragment would facilitate identification considerably, especially as *h*-dropping is easy to perceive and constitutes a noticeable difference with SD. Shibboleths probably arise mostly when there is intensive contact between the language varieties involved. They usually reflect the awareness of linguistic variation in nearby areas. However, there are exceptions. In the Netherlands, for example, the Frisian shibboleth *bûter, brea en griene tsiis* 'butter, bread and green cheese', demonstrating the difficulty of the Frisian sound system, is widely known, even to persons who have hardly been exposed to the Frisian language.

According to Taeldeman (2003), dialect features that (1) show much variation, (2) are found only in a small language area, (3) are subject to high awareness, and (4) are conspicuously different from their counterparts in the standard language and/or one's own language variety are much more prone to shibboleth formation than features with the opposite characteristics. The features favoring shibboleth formation were called 'primary dialect features' by Schirmunski (1930), whereas those features that remain unnoticed were called 'secondary dialect features' (see Hinskens (1986) for an extensive discussion of this distinction and a proposal to test its validity). From a functional point of view (efficient communication) one would expect a dialect speaker first to get rid of primary dialect features and opt for linguistic convergence, leading to dialect loss. This is the position taken by most linguists, including Schirmunski (1930), Hoppenbrouwers (1990), and Van Bree (2000). On the other hand, if a dialect speaker wants to stress his linguistic identity, he may want to preserve or even 'exaggerate' primary dialect features.

If a dialect speaker opts for linguistic divergence to express his/her local adherence, this may lead to cases of polarization, as illustrated by Taeldeman (2000) with numerous examples in the Dutch speaking part of Belgium. Taeldeman posits that polarized items typically have five characteristics: (1) sharp boundaries, (2) perceptual salience, (3) wide distribution in the lexicon, (4) high awareness, (5) strong negative or positive attitudes. Of course, sharp delineations of dialect features facilitate dialect identification considerably. An example of a polarized situation described by Taeldeman pertains to the strong diphthongal realization of old West Germanic *î* and *û* in the Flemish region between Ruiselede and Avelgem, contrasting with the corresponding monophthongs to the west and weak diphthongs to the east. Often, sharp contrasts are found between urban centers and the surrounding area. The most famous example is urban uvular (back) /r/ contrasting with rural alveolar (front) /r/ in some parts of the Dutch language area. Some scholars (e.g. Kloeke 1927, Donaldson 1983, Chambers and Trudgill 1998) assume that the uvular realization of /r/ spread by means of a hierarchical diffusion pattern, 'leaping' from Paris to other large urban centers and from there to smaller and smaller (satellite) towns (see Taeldeman (2008) for a discussion of the role of urban centers in dialect diffusion). However, the view that uvular /r/ in northwestern Europe derives from Parisian French is not undisputed. One of the most fervent opponents to what he terms 'the French connection' is Howell (1986). He argues, among other things, that it is not at all certain that French at the time possessed a uvular /r/ and he thinks, moreover, that it is

unlikely that a single sound should be borrowed from another language. Despite the controversy about its origin, it is a fact that in certain parts of the Dutch language area uvular /r/ is very conspicuous and used by many people to identify city dwellers. This does not mean that uvular /r/ is an inherently urban feature or alveolar /r/ an inherently rural feature. In other language areas (Italy, for example) the opposite situation can be observed (see Van Bezooijen (2006) for an extensive description of the provenance and spread of uvular /r/ in the Netherlands and Tops 2006−2007 for Belgium).

Generally speaking, the identifiability of dialects should have decreased in the course of time, with the gradual loss of localized dialect variation and decreased dialect use in interlocal and interregional contact situations. According to Hoppenbrouwers (1990: 41), "In the confrontation with surrounding dialects, some dialect features appear to be less vital than others. Especially the most typical elements of the dialect disappear as the most marked forms" (translation by the present authors). Primary dialect features would also disappear because they obstruct intelligibility. Occasionally, dialect is heard in the media, especially television. However, dialect speakers are often subtitled on Dutch and Flemish television (Remael, De Houwer and Vandekerckhove 2008) and therefore it is uncertain how much dialect knowledge is gained by watching television.

2.3. Dialect intelligibility

The question to what extent non-linguists are able to establish the distance between language varieties is interesting mainly from a scientific point of view. Being good at it is not necessarily a very useful talent in daily life. The same holds to some extent for the degree to which one is able to identify where a dialect speaking or accented speaker comes from. Being good at this may be useful for a forensic phonetician when looking for the perpetrator of a crime, but in general it is not for a common language user. After all, one of the main functions of language is not so much extralinguistic, to provide cues about a speaker's social background, but rather linguistic, to enable communication, not only between speakers of the same variety but also between people speaking with different accents of dialects. The intelligibility of accents and dialects of Dutch has been the object of several studies.

Boets and De Schutter (1977) not only investigated the identifiability of 14 dialects in the Dutch speaking part of Belgium (see Section 2.2.), but also the perceived intelligibility of the same dialects, using the same 72 subjects from Duffel, in the province of Antwerp, as in the identification experiment. For each audio fragment, five degrees of intelligibility could be indicated, ranging from very good (5 points) to very bad (1 point). The average score across all subjects was 72 % of the maximum score (72 subjects × 5 points = 360). As expected, the dialects from the provinces of Antwerp and Brabant, relatively close to the subjects' place of residence, were perceived as most intelligible. Dialects from the provinces of East-Flanders, West-Flanders and Limburg were judged to be the least intelligible. Boets and De Schutter also established some relationships between the perceived intelligibility and the social characteristics of their listeners. Older listeners were (or at least claimed to be) better at understanding the various dialects than younger subjects. Also, especially subjects from the middle class were good (claimed to be good). Low intelligibility was found to correlate with low appreciation. According to Boets and De Schutter, the (subjective) appreciation scores are determined by the (objec-

tive) intelligibility scores. In the literature (e.g. Wolff 1959, Gooskens 2006, Van Bezooijen and Gooskens 2007) the opposite is often contended, namely that low (high) intelligibility is caused by low (high) appreciation. It is assumed that the reported or measured comprehension problems are not so much due to a lack of transparency of the meaning of the language at hand, but rather to a lack of motivation on the part of the listeners. Unfortunately, it is very difficult to determine whether this is a question of lack of ability or lack of willingness.

Van Bezooijen (1994) looked at the perceived intelligibility of dialects spoken in the Netherlands. The fragments were judged by listeners both with respect to estimated intelligibility and divergence from Dutch. A very high and significant correlation of 0.94 between the two perceptual characteristics was found. Moreover, both the intelligibility and divergence ratings showed a strong relationship (correlations between 0.81 and 0.97) with the aesthetic evaluations by three other subject groups, both adults and children. So, the more intelligible and standard a variety is perceived to be, the more beautiful it sounds. Again, no conclusions can be drawn about the direction of the relationship.

The two intelligibility studies discussed above both examined the *estimation* of intelligibility. Subjects were asked to indicate how well they *thought* they understood what they heard. More interesting perhaps, and supposedly also more valid, are studies investigating *actual* intelligibility. Actual intelligibility can be measured by asking listeners to answer open or closed questions about the content of a spoken text or by having subjects translate a spoken text. This method was applied in two studies by Van Bezooijen and Van den Berg.

In Van Bezooijen and Van den Berg (1999a), the functional intelligibility of four language varieties was investigated, namely three dialects of Dutch from the provinces of Groningen, Limburg, and West-Flanders, and a variety of Frisian. Intelligibility was assessed for three groups of subjects, namely (1) non-dialect speakers of SD from the west of the Netherlands, (2) dialect speakers from the east of the Netherlands, and (3) dialect speakers from the central part of Belgium. An auditory task was used in which subjects heard semi-spontaneous speech samples (descriptions of drawings depicting every-day events) of the varieties mentioned and were asked to translate nouns referring to common, concrete objects into SD. Some of the nouns differed from SD at the phonological level, and others at the morphological or lexical level. There were one, two or three nouns per fragment that had to be translated. To facilitate the task somewhat, all other words in the fragment were already provided in a written form in SD. Intelligibility was expressed as the percentage of nouns translated correctly. Intelligibility was to some extent influenced by the background of the listeners. The difference between the two groups of listeners from the Netherlands was small, so the factor 'dialect knowledge' had little effect on their intelligibility performance. For both Netherlandic groups, the West-Flemish dialect was the least intelligible (64 % and 66 % correct for groups 1 and 2, respectively), followed by the Frisian dialect (86 % and 84 %), the Limburg dialect (86 % and 92 %) and the Groningen dialect (94 % and 97 %). On the other hand, there were clear differences between the two groups from the Netherlands on the one hand and the Belgian group on the other. For the Belgian listeners, the least intelligible dialect was Frisian (75 % correct), followed by West-Flemish (83 %), Limburgian (87 %) and Groningen dialect (89 %).

Van Bezooijen and Van den Berg (1999b) used the same approach as Van Bezooijen and Van den Berg (1999a), but they minimized the role of semantic context. In this study

all fragments presented contained only one noun that had to be translated, and no other content words (verbs, adjectives, adverbs). Moreover, within each variety, each key word was included only once, which means that identical tokens from different speakers were excluded. A paper-and-pencil experiment was administered beforehand to a different group of subjects to verify whether the target nouns were indeed unpredictable given the context. Standard speaking subjects from the west of the Netherlands with no dialect knowledge were used as listeners. The percentages correct (in ascending order from least intelligible to most intelligible) were 58 % for the Frisian dialect, 58 % for the West-Flemish dialect, 80 % for the Limburg dialect and 94 % for the Groningen dialect. If these results are compared with the performance of the standard speaking subjects in the above described experiment with non-minimalized semantic context, it appears that intelligibility has decreased for all varieties, and most notably for Frisian.

Van Bezooijen and Van den Berg (1999b) also looked at the basis of the intelligibility ratings, trying to explain why the four language varieties yielded such widely diverging results, with a difference of 36 percentage points between the Groningen dialect of Bedum on the one hand and the Frisian dialect of Grou and the West-Flemish dialect of Tielt on the other. For this purpose they made a linguistic profile for each variety, distinguishing six categories of relationships between the target noun in the dialect and the semantically equivalent noun in SD. These relationships with SD were ordered from (1) no difference, via (2) a difference in one vowel, (3) a difference in one consonant, (4) differences in several phonemes, to (5) lexical difference (non-cognate). Semantic differences were categorized separately. The Groningen dialect had many instances of (1) and none of (5), explaining why it was so easy to understand. On the other hand, the West-Flemish dialect had few instances of (1) and relatively many of (5), explaining why it was so difficult to understand. The profile of the Limburg dialect occupied an intermediate position, corresponding with intermediate intelligibility. The results for Frisian fit in less well. The intelligibility of Frisian was found to be equal to that of West-Flemish, so one would expect a similar linguistic profile. However, Frisian has considerably more instances of (1) and considerably fewer instances of (5) than West-Flemish. Closer inspection of the data suggested that it was category (2) that presented considerably more problems for Frisian than for the other varieties, including West Flemish. It suggests that when there is a vowel difference between a target noun and its equivalent in SD, the correspondence is often less transparent for Frisian than for the other varieties. Examples of Frisian category (2) words that presented problems to the listeners are *reek* (Dutch *rook*, 'smoke') and *amer* (Dutch *emmer*, 'bucket'). This would mean that Frisian is relatively difficult to understand not only for quantitative reasons, i.e. because of the number of nouns showing the various relationships categorized in (1) to (5), but also for qualitative reasons, because of the types of deviations within particular categories.

As far as we know, the Van Bezooijen (1999b) study is the only empirical investigation of the relationship between intelligibility and linguistic elements. On theoretical grounds, however, it can be hypothesized that primary dialect features obstruct intelligibility to a higher degree than secondary dialect features. As mentioned in Section 2.2., primary dialect features show much variation, they are typically found only in a small language area, and they are conspicuously different from their counterparts in the standard language and/or other language varieties. According to Hoppenbrouwers (1990: 41) "because of their perceptual salience, primary dialect features will endanger interdialectal communication and they will therefore be dropped." (translation by the present au-

thors). As an illustration, Hoppenbrouwers presents the glottal stop, which can be used as an intervocalic variant of /k/ in the dialect of Luyksgestel (North Brabant). It is a deviant sound that may attract so much attention that listeners may forget to pay attention to the *content* of the message, and speakers are aware of this attention-attracting effect. It is a completely local phenomenon, it disturbs intercommunal interaction and intelligibility, and it disappears at an early stage of dialect loss.

3. Recent literature

In Section 2., the literature between 1946 and (roughly) 2000 was covered. In the present section, more recent literature is presented. Only a few perceptual studies have recently been carried out, so the overview is relatively short. The recent studies are related to dialect distance and dialect intelligibility. Dialect identification has not been investigated recently.

3.1. Dialect distance

The arrow method which was developed in the nineteen-forties (see Section 2.1.), has still not lost its attraction, as appears from a recent study by Giesbers (2008). Giesbers investigated to what extent the old Kleverland dialect continuum was affected by the Dutch-German state border. Giesbers asked 268 Dutch and German dialect speakers to indicate on a map of the border region between Nijmegen in the north and Venray in the south to circle ten Dutch and/or German localities for which the dialect sounds (about) the same as their own dialect. She transformed these into arrows. Giesbers states that the resulting map contained too much information and was difficult to interpret. She then decided to use an analysis of variance to test her hypothesis that the geographical distance between neighboring dialects separated by the state border would be perceptually enlarged in comparison to equally large distances between neighboring dialects on the same side of the border, either German or Dutch. Giesbers' hypothesis was statistically confirmed.

Van Bezooijen and Heeringa (2006) explored the basis of non-linguists' intuitions about the linguistic distances of language varieties in the Netherlands and Flanders to SD, focusing on geographic and linguistic determinants. 140 subjects from different parts of the Netherlands were given a map with the twelve provinces of the Netherlands and the five Dutch-speaking provinces of Belgium. For each province they were asked to write a number between 0 and 100, 0 expressing no linguistic distance and 100 expressing the largest linguistic distance to SD. The results showed that varieties are generally estimated to be more distant linguistically from SD as they are more distant geographically from the Randstad. The distances from Haarlem, which is typically seen as the place where SD is spoken in its "purest" form (Smakman and Van Bezooijen 1997), were measured in millimeters in a straight line on the map and then rescaled to values between 0 and 100. The correlation between estimated linguistic distance and geographic distance was high ($r = 0.87$, 0.98 when excluding the province of Friesland). Van Bezooijen and Heeringa also correlated the estimated linguistic distances with objective linguistic dis-

tances measured with the Levenshtein algorithm (Heeringa 2004) on the basis of older data (*Reeks Nederlandse Dialectatlassen*, Blancquaert and Pée 1925−1982) and new data (collected by Van Bezooijen in 2001). Again, high correlations were found ($r = 0.93$ with the old and 0.80 with the new dialect samples; 0.91 and 0.78, respectively, when Friesland was excluded). Unfortunately the results do not permit us to draw definite conclusions about the relative importance of geographic and linguistic distances.

3.2. Dialect identification

Van Daele (2000) presented speech fragments from ten Flemish dialects to women and men of all ages and from all over Flanders. The listeners were asked to indicate where they thought the dialects were spoken on a map of Flanders. In general, Brabant dialects were correctly identified more often than East- and West-Flemish and Limburg dialects, probably due to their central geographic position and the fact that Antwerp is part of this area. Younger people were better at identifying the dialects than older people. Van Daele suggests that this may be explained by the higher mobility of young people.

3.3. Dialect intelligibility

Van Daele (2000) asked the Flemish listeners in his investigation (see Section 3.2.) to indicate how well they understood each of the ten Flemish dialect recordings on a scale from 1 ('very badly') to 5 ('very well'). The Brabant dialects were best understood. This is explained by the strong influence of the Brabant dialects, and above all that of Antwerp, on other dialects. The media play an important role in this process. The influential position is not linked to a more positive attitude towards the Brabant dialects as judged on a five-point scale from 'very ugly' to 'very beautiful'. In general, however, there is a positive relationship between intelligibility and attitude. The listeners found the East-Flemish dialects to be most difficult to understand. This is attributed to historical factors that have led to an inhomogeneous dialect area. In general, the investigation showed that geographically distant dialects are more difficult to understand than geographically close dialects.

Impe, Geeraerts and Speelman (2009) and Impe (2010) auditorily presented words and non-words in ten Belgian and Netherlandic Dutch language varieties (standard and regional, central en peripheral) to Netherlandic and Belgian test subjects in a design which featured reaction time as a dependent variable. The words were *phonetically* regionally marked (since each word set was recorded in a standard or regional variety), but *lexically* only nationally marked (since only nationally typical, but no regionally typical words were selected). The subjects were asked to decide as quickly as possible whether the items were existing Dutch words or not, and to decide which of two possible alternatives reflected the meaning of the stimulus words best, one of the options being a synonym or semantically strongly related word (such as *triest* 'sad' as a synonym for the stimulus word *droevig* 'sad') and the other alternative being a semantically unrelated word (such as *klein* 'small' as an incorrect alternative for *droevig* 'sad'). The results showed that at the national level, Flemish test subjects had significantly fewer problems

with correctly understanding Netherlandic Dutch stimuli than vice versa. At the regional level, a positive effect of the degree of standardness on the ease of comprehension was found. This effect appears to be the most salient within Flanders, where the intelligibility differences between the national standard and (non-dialectal) regional words are greater than in the Netherlands. Whereas the most central regiolects − especially in the Netherlands − enjoy a rather general acceptability and intelligibility, the most peripheral regiolects in both countries suffer the greatest problems of comprehension.

4. Ongoing research

Heeringa is currently collecting dialect recordings of old men ('conservative speakers') and young women ('innovative speakers') of dialects spoken in 80 locations in the Netherlands and Flanders (see Heeringa and Hinskens 2012). He will use the data to investigate how the change from dialect to regiolect is reflected in the production and perception of dialect speech. Perceptual distances between the dialects will be collected by means of a web survey. Listeners from these 80 locations will listen to the recordings and rate the distance to their mother tongue on a scale from 1 (no distance) to 10 (maximum distance). Heeringa expects that perceptual distances based on recordings of innovative speakers will suggest larger and less sharply defined dialect areas than those which are based on the recordings of conservative speakers. For the production part of the study, the recordings will be transcribed in such a way that Heeringa can examine how and to what extent the lexical, lexical-phonological, postlexical and purely phonetic levels are affected, and which ones are affected most strongly. Finally, the hypothesis will be tested that the ongoing change from dialect to regiolect (a koine spoken in a larger geographical region) found in speech production will influence the perception of the listeners in such a way that conservative listeners will tend to characterize the speech they hear in terms of dialect groups (many small groups) while innovative listeners will characterize speech in terms of regiolect groups (few large groups).

Impe (2010) investigates the impact of linguistic distance, language attitudes and familiarity on mutual intelligibility in the Dutch language area (see Section 3.2.). She notes that as the contact between language varieties is more intensive, linguistic resemblance will be greater, the attitude towards a linguistic variety will be more positive, and mutual intelligibility will be larger. This indicates that the various factors are entwined in a complicated way. Phonetic distance is measured by means of the Levenshtein distance, lexical distance by means of an onomasiological profile-based methodology (Geeraerts, Grondelaers and Speelman 1999), which compares the words that speakers of different language varieties use for a wide range of concepts (cf. Heeringa and Nerbonne, this volume, for a brief sketch of this notion). Finally, familiarity is measured by means of questionnaires, and language attitudes by means of attitudinal scales and an innovative auditory affective priming task.

5. Desiderata for future research

We have seen that research within the area of perceptual dialectology started out with a focus on perceptual distances primarily indicated by drawing dialect maps. The desire

to explain the linguistic and extra-linguistic basis of perception arose later. The interest in intelligibility is more recent, especially when it comes to actual testing. The methods for testing and measuring are getting more and more sophisticated, including web-based experiments and computational techniques for measuring linguistic distances. The new methods have so far generated rather global results. In future research, we should aim to gain more detailed knowledge about the mechanisms behind the perception of language varieties. Methods that have been developed by experimental linguists and psycholinguists should be exploited to set up controlled experiments that can provide insight into the relative importance of different linguistic and extra-linguistic factors such as contact and attitude for the perception of language varieties.

6. Atlases

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31. Attitude measurements in the Low Countries

1. Introduction

Although most sociolinguistic research focuses on the production side of the variationist coin, the perception side − concerned with the *evaluation* of language variation − is just as important, but much more difficult to summarize and review in a single chapter. Before we start our overview, we will give a short theoretical introduction, and elucidate some of the (confusing) terminology surrounding attitudes and evaluation.

There is no generally accepted definition of 'language attitude', but many researchers converge on the view that language attitudes are evaluations which build on some form of knowledge or belief. We will provisionally define language attitudes as the experientially based ideas and evaluative judgements people have about (speakers of) their own language and other languages (see Knops and Van Hout 1988: 2). The study of native speakers' attitudes has been at the forefront of sociolinguistic attention in the Nether-