LANGUAGE ATTITUDES REVISITED:

AUDITORY AFFECTIVE PRIMING

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In this cognitive sociolinguistic study, we aim to examine automatically activated language attitudes and to map the affective representation of language-internal variation in Dutch. We do so by applying the affective priming paradigm, an experimental-cognitive paradigm in which participants are typically faster to respond to affectively polarized target stimuli that are preceded by affectively congruent prime stimuli than affectively polarized target stimuli that are preceded by affectively incongruent prime stimuli. Specifically, we carried out an auditory affective priming experiment in which auditory word stimuli, recorded in both standard and regiolectal varieties of Dutch, were used as primes. Our findings suggest that intralingually accented Dutch words are evaluated in an automatic fashion, irrespective of their semantic meaning.

1. INTRODUCTION

This experimental study on language attitudes fits in with the emerging field of *Cognitive Sociolinguistics*, which has recently been structured by a.o. Kristiansen & Dirven (2008) and Geeraerts, Kristiansen & Peirsman (2010). *Cognitive Sociolinguistics* can be defined as the coalescence between a cognitive usage-based approach to language (as in *Cognitive Linguistics*) and a language-internal variationist and empirical methodological approach (as in *Sociolinguistics*). On the one hand, since Cognitive Linguistics is a *usage-based* approach to the linguistic system (e.g. Barlow & Kemmer 2000), a sociolinguistic perspective with the recognition of intralingual and communicative variation is inevitable (as is illustrated in e.g.

Kristiansen 2003 or Geeraerts 2005). A second crucial aspect of Cognitive Linguistics that, leads towards the necessity of incorporating social variation is its focus on the *social nature of meaning* (Geeraerts 2006). On the other hand then, since the sociolinguistic tradition has often disregarded a semantic and conceptual perspective on language variation, it may benefit from the introduction of a Cognitive Linguistics perspective. This perspective constitutes a link with research fields as psycholinguistics and perceptual dialectology (Preston 1999) in which the perception and evaluation (and not only the production) of language-internal variation play a major part.

In line with the Cognitive Sociolinguistics framework – and principally in line with its focus on variation of lectal awareness and attitudes – we aim to examine the cognitive representation and social significance of intralingual variation in Dutch. We do so by means of an auditory affective priming experiment that maps the affective representation of Dutch standard and regiolectal variation in the minds of Dutch language users. To the best of our knowledge, auditory affective priming has not been applied to the investigation of language attitudes before. Therefore, a second, and at this stage perhaps more important, methodological aim of the paper is to test and evaluate the merits of this method for the study of language attitudes.

After a concise status quaestionis of language attitudinal research (2), we introduce the affective priming paradigm – a frequently and successfully used psychological measurement instrument – as a new technique for measuring *automatically activated* language attitudes. Its rationale and strengths over alternative procedures will be discussed (3.1) as well as its applicability to the study of *language* attitudes (3.2). Next, we treat the design of a (small-scale) auditory affective priming experiment, addressing the selected participants (4.1), the stimulus materials used (4.2), and the priming procedure itself (4.3). Finally, some promising

first results with respect to the outcome of the affective priming test are reported (5) and we conclude with a general discussion (6).

2. LANGUAGE ATTITUDE RESEARCH

Since the 1960s, the field of language attitude research has been characterized by the emergence of a substantial amount of attitudinal studies that took a scientific and experimental approach (Gardner & Lambert 1959, Wolff 1959, Lambert et al.1960). From then on – as numerous comprehensive literature overviews demonstrate, e.g. Zahn & Hopper 1985, Giles et al. 1987, van Hout & Knops 1988, Bradac 1990, Cargile et al. 1994, Giles & Billings 2004 – language attitudes have been scrutinized from a wide range of disciplinary perspectives, such as linguistics (e.g. Labov 1966), sociology (e.g. Fishman 1971), communication studies (e.g. Hopper 1977), and, particularly important, social psychology (e.g. Lambert et al. 1960, Ryan & Giles 1982, Gardner 1985).

Direct as well as *indirect* techniques have been applied as measuring tools in these studies, both with their specific advantages and pitfalls. *Direct* techniques such as interviews or questionnaires typically measure consciously and deliberately constructed and expressed attitudes. Examples with regard to Dutch are plenty; see e.g. Boets & De Schutter (1977), Deprez & De Schutter (1980) or Van Bree (1988). Such direct techniques, however, have often been criticized to be susceptible to social desirability or self-flattering strategies (e.g. Dittmar 1978, Dovidio & Fazio 1992, Greenwald & Banaji 1995).

Indirect techniques, conversely, target information that is more implicit and less easily accessible through introspection (Greenwald & Banaji 1995) which makes indirect attitude assessment less subject to the problems stated above. Undoubtedly, the most well-known and frequently used indirect measurement tool in language attitude studies is the *matched guise technique* (MGT), as developed by Lambert and his colleagues (Lambert et al. 1960). In a

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nutshell, the MGT involves the presentation of various audio fragments that are recorded in different language varieties by one and the same speaker. The main idea is that the recorded accents unfold impressions of personality traits (which are, in fact, impressions of different language varieties since all recordings are made by the same speaker) to listeners who are supposed to be unaware of the fact that only one speaker is involved. Also Dutch language attitude researchers have adopted the MGT in order to be able to investigate language attitudes free from response bias [e.g. Knops 1984, Heijmer & Vonk 2002, Impe & Speelman 2007; see Grondelaers (in press) for an extensive overview of different types of direct and non-direct Dutch attitude research]. However, indirect measurements based on MGT – and its variants, such as the verbal guise technique[1] (Ball & Giles 1982) – have been repeatedly and severely criticized, especially on the basis of their artificiality, their lack of authenticity, and the influence of the semantic and syntactic structure of the recordings (i.e. *what* a speaker says may influence evaluations as much as *how* it is said). For an overview of guise criticism, see e.g. Agheyisi & Fishman (1970), Lee (1971), Giles & Powesland (1975), Deprez & De Schutter (1981), Ryan & Giles (1982), Fasold (1984), Cargile et al. (1994), Giles & Coupland (1991), Bradac, Cargile & Hallett (2001), Garrett, Coupland & Williams (2003)[2].

Remarkably enough, in spite of these criticisms and doubts, few methodological innovations have been introduced in language attitudinal research over the last 40 years.

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[1] In the verbal-guise technique a number of different speakers read exactly the same text.

[2] In spite of this criticism, MGT remains a popular method and proponents of the method continue to work on more refined designs. In this respect, Grondelaers (in press) argues that several researchers compensate the unreliability of the MGT by applying what he calls a 'serial approach':

"In the meantime, most responsible research efforts in this field have taken the form of a serial approach, building on data elicited in a (great) number of speaker evaluation experiments in which new experiments can correct the design errors of their predecessors, and replication of perceptual findings is the gold standard for their validity." (Grondelaers, in press).

Therefore, we have sought for a new impetus in the methodological arsenal of indirect attitude measurement techniques offered by the field of experimental (social) psychology.

3. AFFECTIVE PRIMING

3.1 AFFECTIVE PRIMING IN EXPERIMENTAL SOCIAL PSYCHOLOGY

In the field of experimental (social) psychology, many new indirect measures of attitudes – typically *not* language attitudes – have been developed over the past 15 years. The measures that gained the widest publicity and appreciation are probably the affective priming task (e.g. Fazio et al. 1986, Hermans, De Houwer & Eelen 1994, 2001; Spruyt, Hermans, De Houwer, Vandekerckhove, & Eelen, 2007), the Implicit Association Test (e.g. Greenwald, McGhee & Schwartz 1998), the (emotional) Stroop task (e.g. Pratto & John 1991), the (extrinsic) affective Simon task (e.g. De Houwer & Eelen 1998), and the Go-Nogo-Association Task (Nosek & Banaji 2001). An extensive review and comparison of these methods can be found in e.g. Fazio & Olson (2003), De Houwer, Teige-Mocigemba, Spruyt, & Moors (2009), or De Houwer et al. (2009).

One of these tasks, the *affective priming paradigm*, is proposed in this paper as a new tool for indirectly measuring automatically activated language attitudes.

In the standard affective priming paradigm, participants are asked to evaluate the affective connotation of positive and negative target stimuli (e.g. a positive picture of a smiling child or a negative picture of an exploding nuclear bomb), each of which is preceded by an affectively positive or negative prime stimulus. As is illustrated in Figure 1, the standard observation in such a priming procedure is that the time needed to evaluate a target is influenced by the evaluative relationship between that target and the immediately preceding prime. Specifically, target responding is typically facilitated when prime and target are affectively congruent

(positive – positive or negative – negative) as compared to when the prime and target are affectively incongruent (positive – negative or negative – positive). The influence of affective congruence versus incongruence also pertains to performance in a more general way: congruence typically not only results in faster responses but also in participants making less errors. However, in this paper we will disregard erroneous responses and zoom in on the effect of (in)congruence on reaction times. The reason for this is that in our data error rates in our data were too low to allow for a meaningful analysis of the error data.
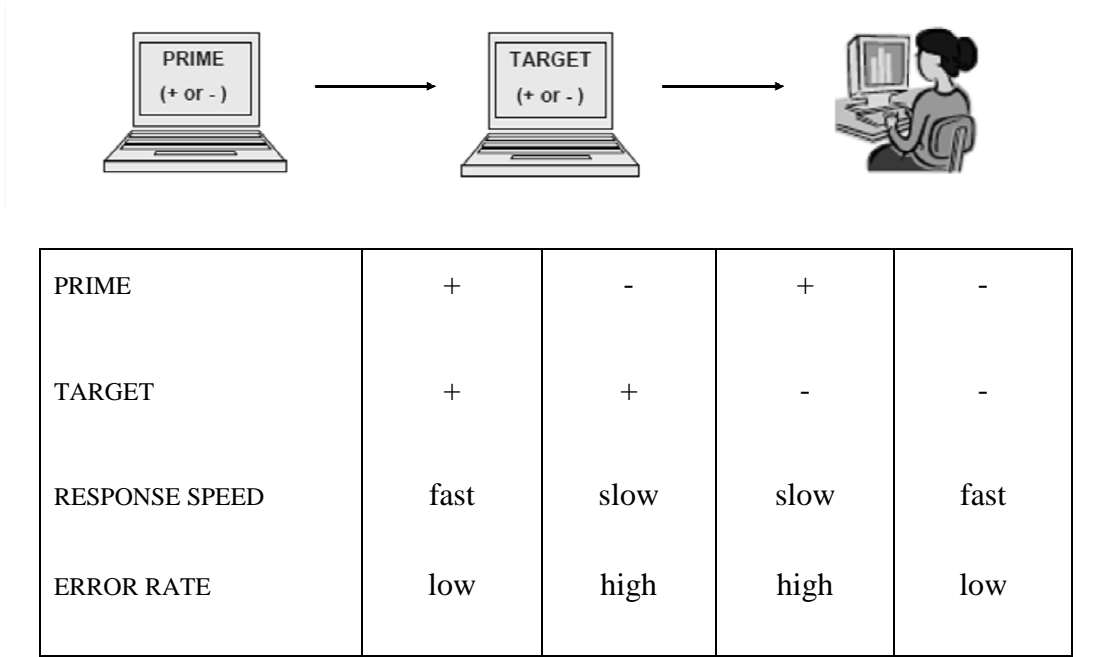
PRIME	+	-	+	-
TARGET	+	+	-	-
RESPONSE SPEED	fast	slow	slow	fast
ERROR RATE	low	high	high	low

Figure 1: Schematic representation of the affective priming paradigm

The core idea underlying the affective priming effect is, in other words, that one can assess the attitude towards a prime stimulus by examining how its presence influences the affective categorization of the target stimulus (De Houwer 2009). That is, since priming effects can only occur if the attitude towards the primes has been activated, the presence of a priming

effect can be seen as an index of attitude activation, (Bargh et al. 1996, De Houwer, Hermans & Spruyt 2001, Spruyt et al. 2007).

Importantly, evidence for the *automatic* nature of the affective priming effect has been found in various studies. It has been demonstrated that the occurrence of the affective priming effects does not depend on (a) the presence of a task that explicitly involves evaluation (e.g. Hermans, De Houwer & Eelen 1994, Bargh et al. 1996, Spruyt et al. 2007, Spruyt et al. 2002; but see Spruyt, De Houwer, Everaert, & Hermans, 2012; Spruyt, De Houwer, & Hermans, 2009) or (b) conscious identification of the prime stimuli (e.g. Greenwald, Klinger & Schuh 1995, Hermans et al 2003). Moreover, affective priming effects have also been found when (c) participants performed an effortful secondary task, such as reciting a series of digits while simultaneously performing the priming task (Hermans, Crombez & Eelen 2000), or (d) the SOA (i.e. the interval between the onset of the prime and the target) was short (300 ms or less, e.g. Fazio et al. 1986, Hermans, De Houwer & Eelen 2001, Spruyt et al. 2007). These findings illustrate that affective priming is based on highly efficient, rapid, short-lived processes. In fact, affective priming effects typically disappear at long SOAs (e.g. 1000 ms).

The evidence that affective priming unfolds automatic, spontaneous attitudes instead of nonautomatic ones constitutes a major advantage over other indirect techniques that lack such proof (like the MGT) as well as over direct methods, which have no immediate access to automatically activated attitudes.

3.2 AFFECTIVE PRIMING AS A NEW METHOD FOR MEASURING LANGUAGE ATTITUDES

Whereas most affective priming effects reported so far were obtained with visual stimuli and were situated within the field of social psychological research on attitudes (see Klauer 1998 for an overview), the priming paradigm has been shown to be very flexible both in terms of stimulus materials and its implementation in other research fields.

Specifically, the affective priming paradigm has been applied successfully in disciplines such as clinical psychology (e.g. Teachman, Gregg, & Woody 2001) and marketing (e.g. Brunel, Tietje, & Greenwald 2004). Moreover, several studies have demonstrated that the affective priming effect is a rather general phenomenon that occurs with a wide variety of stimulus materials as diverse as written words (Bargh et al. 1992), real life colour pictures (Hermans, De Houwer, & Eelen 1994), odours (Hermans, Baeyens, & Eelen 1998), musical chords (Sollberger, Reber, & Eckstein 2003) or novel stimuli (e.g. Duckworth et al. 2002, Garcia & Bargh 2003). To our knowledge, however, no affective priming experiments exist in which auditory primes recorded in different language varieties were used to measure language attitudes.

We have some reasons to expect, though, that the priming paradigm can constitute an interesting and valuable new method for measuring automatically activated language attitudes, which we believe to be a topic that merits more attention than it has been given up to this point, as has also been expressed by Garcia & Bargh: *"Questions remain as to if there are differences in the automatic evaluations made of people who speak in distinct regional or foreign language accents, perhaps along the lines of consciously experienced aesthetic differences among languages […]. Indeed, given increasing globalization in communications and the resultant creation of the world village—so that we are even more likely to encounter these various languages and accents—studying automatic evaluative tendencies toward different languages and accents seems a very worthwhile direction for further research."* *(Garcia & Bargh 2003, p. 431)*

4. AUDITORY AFFECTIVE PRIMING EXPERIMENT

In order to investigate whether the affective priming technique can be used as a new method for measuring automatically activated language attitudes, we set up an *auditory affective*

priming experiment. As in a traditional priming paradigm, participants were presented with a series of *visual* target stimuli (i.e. standardized positive and negative pictures) that were preceded by a set of positive or negative primes. The nature of the *auditory* primes, however, is innovative in the field. Specifically, we selected connotatively neutral existent and nonsense cognate words recorded in various varieties of Dutch, viz. Standard Dutch and two substandard, regionally coloured varieties (from West-Flanders and Antwerp). In an evaluative categorization task, participants were asked to evaluate as quickly as possible whether the target of each associatively unrelated prime–target pair was emotionally positive or negative. Given that affectively congruent prime-target pairs are typically responded to faster than affectively incongruent prime-target pairs, we were able to estimate the participants' automatically activated attitudes towards Standard Dutch, West-Flanders and Antwerp on the basis of their pattern of responding. More information on the participants (4.1), materials (4.2) and experiment procedure (4.3) is given below.

4.1 PARTICIPANTS

Participants were 33 students at Ghent University (4 men and 29 women, 18- to 25-year-olds). Seventeen of them were born and raised in West-Flanders (the most western province of Flanders), whereas sixteen participants originated from Antwerp (a more central province in Flanders). We chose to work with participants from one central and one peripheral region, so that we can establish to which extent central versus regional provenance of people affects their attitude towards the standard language, towards their own regiolect and toward one other regiolect. All participants were native speakers of Dutch.[3]

4.2 MATERIALS

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[3] Participants subscribed via an anonymous online recruiting system. All students from Ghent University could participate.

4.2.1 TARGET STIMULI

The target stimuli consisted of thirty real life colour pictures (15 positive and 15 negative), some of which originated from the IAPS database (International Affective Picture System, Lang, Bradley & Cuthberth 1999).[4] Norm data collected by Spruyt et al. (2002) confirmed that the mean evaluation of positive and negative targets was significantly different from zero ($M_{positive}$ = 2.23 (sd = 0.63), $M_{negative}$ = -2.44 (sd = 0.81), t(29) = - 17.52, p < 0.001). All pictures were 512 pixels wide and 384 pixels high and were presented on a 75 Hz computer with a 17 inch monitor.

4.2.2 PRIME STIMULI

The auditory primes were 30 connotatively neutral existent and 30 nonsense cognate words, each of which had been recorded into three different language varieties of Dutch, i.e. Standard Belgian Dutch and two regional varieties as spoken in West-Flanders and Antwerp. By adding nonsense words we wanted to test whether the presence or absence of word meaning would influence the working of affective priming even in the case of words we deemed connotatively neutral. The selected stimuli were recorded by two speakers: the entire set of West-Flemish accented words was recorded by a West-Flemish speaker, whereas an Antwerp speaker recorded the complete series of regionally coloured Antwerp stimuli. In addition, each speaker recorded half of the set of words pronounced in Standard Dutch.

Both speakers were male radio commentators (27 and 31 years old). They were born and raised in the region they represented. Both radio commentators were still living in the region they represented at the time of the recordings. In individual sessions, the speakers read the stimulus words from paper while seated in a sound-insulated radio studio recording booth with high-standard audio equipment. As can be expected from professional radio

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[4] IAPS numbers: 1030, 1050, 1120, 1201, 1300, 1301, 1302, 1500, 1610, 1750, 1930, 1931, 2070, 2120, 2220, 2565, 2800, 4490, 4611, 4534, 4651, 4672, 4680, 5030, 6250, 6350, 6550, 6560, 7350, 9040.

commentators, both speakers had a good articulation and a clear, agreeable speaking voice. Neither of them had a nasal articulation, nor a whispery, creaky or harsh voice (Laver 1994).

It should be noted that the request to talk with a regional accent (as spoken in West-Flanders and in Antwerp, in this case) does not presuppose that regiolects exist as clearly distinguishable, well-delineated linguistic systems that are equidistant from the standard language (Auer 2005). What speakers recognize as 'regional varieties' may be more or less remote from the standard variety. In our effort to obtain a comparable degree of colloquialism or dialecticity between the words recorded across the two regional varieties, we refrained from directly instructing the speakers which regional markers to use. Instead, we described the desired degree of colloquialism and dialecticity by specifying *functional use* and *communicative situations*. More specifically, we asked the speakers to use *informal regionally accented speech* comprehensible in the speaker's entire region (province), as opposed to on the one hand the *formal* standard and on the other hand *local* dialect with a smaller geographical reach and a more restricted intelligibility. As Auer (1988) argues, speakers adapt the degree of dialectality or standardness of their speech depending on situational changes. This individual flexibility in the use of the colloquial register, depending on situational variables, has also been confirmed by Zenner, Geeraerts & Speelman (2009). However, in spite of the speakers' nearly identical SES (socio-economic status) and the incited identical communicative situations which ensure recordings with a very similar degree of colloquialism, a perfectly similar degree or dialectality cannot be guaranteed. Especially on regional grounds, one stimulus subset might be recorded into a variety slightly higher or lower positioned on the dialect-standard stratification than the other. Creating *perfectly* identical levels of colloquiality would be artificial (not at all accurately mirroring the linguistic reality of Dutch), if not impossible. Therefore, phonetic distances between both regiolectal samples and the Standard Dutch sample were calculated, indicating highly similar degrees of

colloquialism (more details on methodology and results of the distance calculations are beyond the scope of this paper, but can be found in Impe, 2010).

Importantly, the primes' mean duration ($M = 606.13$ ms, $SD = 29.58$, $min = 555$, $max = 650$) did not differ significantly across the varieties ($F(2, 177) < 1$). The (slightly) different individual prime durations, often coupled with auditorally presented diverse words, constitute a methodological difficulty which is absent in working with visual priming material. However, in order to steer clear of this, we kept the variation range between the sound durations as small as possible. Almost all primes were two syllable words.

The words that served as existent prime stimuli were selected on the basis of frequency information from the *Spoken Dutch Corpus* (CGN – Corpus Gesproken Nederlands, Schuurman et al. 2003), which is a ten million words corpus containing transcribed recordings of read out and spontaneously spoken Belgian and Netherlandic Standard Dutch, and the *Football Corpus* (FC), which is a fifty million words corpus compiled from online forums of first and second division Belgian and Dutch football teams. Only frequent and familiar stimuli were selected, based on respectively token frequencies in the CGN and the FC, and ratings by 94 first-year Leuven University students on a seven-point scale with the poles 1 for totally unfamiliar and 7 for extremely familiar. All selected primes averaged a mean score of 5.5 or higher. Hence, only stimuli were selected that are sizably entrenched in most Dutch speakers' mental lexicon and that denote *generally familiar* concepts. Also, all primes had been rated affectively neutral (i.e. ratings between 3.25 and 4.75 on a seven-point rating scale with the poles 1 for extremely negative and 7 for extremely positive) by 35 participants in a pilot questionnaire.

The nonsense words were generated by replacing certain letters or morphemes in a set of target words, ensuring that they formed legal letter sequences according to the phonotactic

constraints of Dutch and that they comprised an identical number of morphemes to their targets. The items' nonsense status was confirmed by their non-occurrence in the Dutch dictionary (Van Dale; Geerts & Den Boon 1999) and their non-occurrence as a meaningful Dutch word in the Google search engine. Crucially, in order to avoid any semantic or associative priming, no prime was associated or semantically related with any of the target pictures. Prime words were presented auditorily through Sennheiser HD 280 Pro headphones.

4.3 PROCEDURE

The participants were tested individually in a dimly lit room in order to help them focus on the task at hand. A millisecond accurate Affect 4.0 program (Spruyt et al. 2010) controlled the presentation of the stimuli as well as the registration of the responses. All instructions were presented on the computer screen. Participants were informed that they were about to hear a set of spoken words that would be followed immediately by a positive or negative picture displayed on the screen. The test subjects were instructed to evaluate the picture as fast and accurately as possible as to whether it was positive or negative by pressing one of two buttons of the computer keyboard in front of them.

In a first familiarization phase, participants were asked to evaluate the valence of the 15 positive and 15 negative target pictures, each presented exactly once in random sequence. Each trial started with the presentation of a fixation cross for 500 ms. Next, 500 ms after the offset of the fixation cross, a target picture was presented. There was a 2000 ms response deadline and the test subjects were provided with a 2000-ms feedback message after responding incorrectly ('Fout!')[5].

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[5] The purpose of the feedback is not to manipulate the participants' evaluation of the stimuli, but rather to remind them of which button is the positive evaluation button and which button is the negative evaluation button.

The main affective priming task started with a series of six practice trials, one for each condition: three prime varieties (Standard Dutch, West-Flemish regiolect and Antwerp regiolect) x two prime types (existent versus nonsense words). None of the words that were presented during this phase were repeated later in the experiment. The actual priming procedure consisted of 180 experimental trials (sixty words times three prime varieties). Each prime was presented in each of the three language varieties and combined with a positive or a negative target. Overall, the trials were designed so that all prime varieties were combined as often with a positive as with a negative target. In addition, no target was presented twice in a row. Each priming trial started with a 500 ms presentation of a fixation cross in the centre of the computer screen; another 500 ms after its offset, a prime word was presented. The target pictures were presented at the offset of the primes, resulting in an average SOA (stimulus onset asynchrony, i.e. the time elapsed between the start of the presentation of the first and second) of 606 milliseconds. The targets were displayed until the participants responded or 2000 ms elapsed. The accuracy as well as the response latencies of the participants' evaluations were measured. The whole experiment, including instructions, took about 15 minutes on average.

Based on earlier affective priming studies, we expected to find shorter response latencies when the valence of both prime and target is affectively congruent (positive-positive or negative-negative) as compared to incongruent prime-target pairs (positive-negative or negative-positive). In keeping with the observations from numerous other attitude studies (e.g. Giles & Powesland 1975, Garrett, Coupland & Williams 2003), we expected the standard language and the subjects' own regionally coloured variety to be preferred over the other regional accent. In sum, we expected participants to respond faster to positive targets than to negative targets after the presentation of a prime in the own regional or standard variety.

Conversely, we expected participants to respond faster to negative targets than to positive targets after the presentation of a prime in the other regional variety (see Figure 2).

PRIME	own/standard	other	own/standard	other
TARGET	+	+	-	-
RESPONSE	fast	slow	slow	fast
ERROR RATE	low	high	high	low

Figure 2: Schematic representation of the auditive affective priming procedure

5. RESULTS

Data of trials on which an incorrect response was given (2.17%) were discarded. To reduce the impact of outliers (see Ratcliff, 1993), we also excluded response latencies below 300 ms or above 1000 ms (2.00 %). Next, we examined whether task performance was dependent upon the use of existent vs. nonsense prime words. All effects involving this factor were far from significant, all Fs < 2.21, all ps > .15. We therefore decided to omit this factor from the final design. The data were then analysed by means of a 2 x 3 x 2 repeated measures ANOVA with the reaction time data as the dependent variable and SUBJECT REGION (i.e. West-Flanders versus Antwerp), PRIME VARIETY (Standard Dutch versus West-Flemish regiolect versus Antwerp regiolect) and TARGET VALENCE (positive versus negative pictures) as the explanatory factors.

First of all, a main effect of TARGET VALENCE was found. Positive targets, M = 516 ms, were associated with faster response latencies than negative targets, M = 526 ms, F(1, 31) =

5.42, $MSE = 904.31$, $p < 0.05$. Importantly, the expected PRIME VARIETY x TARGET VALENCE interaction also reached significance, $F(2, 62) = 5.22$, $MSE = 246.35$, $p < 0.01$. In other words, target evaluation latencies were clearly affected by the presentation of the primes, which suggests that automatic attitude activation has indeed taken place.

Crucially, this two-way interaction between prime variety and target valence was qualified by a significant three-way interaction between SUBJECT REGION, PRIME VARIETY, and TARGET VALENCE, $F(2, 62) = 4.23$, $MSE = 246.35$, $p < 0.05$. This finding confirms that the two subject groups exhibited different attitudes towards different prime varieties.

To further examine this three-way interaction, we first calculated individual preference scores for each prime variety. For each participant we subtracted mean response latencies on positive target trials from mean response mean response latencies on negative target trials. This was done for each of the three prime varieties. We then examined these preference scores for each group of participants (i.e. for each subject region) separately. Different language varieties were clearly evaluated in a different manner by participants from Antwerp, $F(2, 30) = 8.11$, $p < .005$, $MSE = 335.95$. More specifically, these participants showed a strong significant preference for primes in the Antwerp language variety, $M = 24.15$ ms, $t(15) = 2.69$, $p = .02$. The preference for Standard Dutch was not significantly different from zero, $M = 5.37$ ms, $t(15) = 0.74$, $p = 0.47$ nor was the preference for West-Flemish, $M = -.94$ ms, $t(15) = -0.16$, $p = 0.88$. Comparison of the varieties showed that the preference for the Antwerp variety was significantly stronger than both the preference for Standard Dutch, $t(15) = 2.41$, $p = 0.03$, and the preference for West-Flemish, $t(15) = 4.12$, $p = 0.001$. There was no significant difference between the preferences for Standard Dutch and the preference for West-Flemish, $t(15) = 1.20$, $p = .25$.

A similar analysis for the group of participants from West-Flanders also suggests that different language attitudes were activated by different prime varieties, albeit the overall

effect just missed significance, $F(2, 32) = 2.98$, $p = .06$, $MSE = 639.67$. Unlike participants from Antwerp, participants from West-Flanders exhibited a clear preference for Standard Dutch, $M = 21.72$ ms, $t(16) = 2.47$, $p = 0.03$. The preference for the Antwerp regiolect did not differ significantly from zero, $M = 8.69$ ms, $t(16) = 1.19$, $p = 0.25$, nor did the preference for the West-Flemish regiolect, $M = 0.73$ ms, $t(16) = 0.11$, $p = 0.91$. Comparison of the varieties showed that in the case of participant from West-Flanders their preference for Standard Dutch clearly exceeded their preference for their own regiolect, $t(16) = 2.57$, $p = 0.02$. The difference between the preference for Standard Dutch and the preference for the Antwerp regiolect was not significant, $t(16) = 1.29$, $p = .22$, nor was the difference between the preference for the Antwerp regiolect and the preference for the West-Flemish regiolect, $t(16) = 1.04$, $p = 0.31$.

6. DISCUSSION

In this cognitive sociolinguistic study, we put forward the auditory affective priming technique as a new instrument for measuring automatically activated language attitudes. The specific aims of the present investigation were the following: (1) to gain insights into the affective representation of intralingual Dutch variation in the minds of Dutch language users, and to (2) bring a methodological innovation to the available arsenal of measurement techniques in language attitudinal research.

Specifically, the affective priming procedure – which is a frequently and successfully used tool in experimental psychology as an implicit attitude measure – was implemented into the field of linguistics with a view to measure *language* attitudes. In short, a set of auditory primes (which were words recorded in different Dutch language varieties), followed by a set of visual target stimuli (which were, traditionally, real-life colour pictures) was presented to a demographically controlled group of participants ($N = 33$). In an evaluative categorization

task, the subjects were asked to evaluate the valence of the targets as fast as possible. The core idea underlying the priming method is that attitudes toward the primes (i.e. the different language varieties) can be estimated by examining how the presence of the primes influences the affective categorization of the target stimuli. The observed effect is that response latencies are significantly shorter when prime and target are affectively congruous (both positively or negatively valenced), rather than when prime and target are affectively incongruous (positive–negative or negative–positive). Results showed that intralingually accented Dutch primes automatically activate, apart from their semantic meaning, an affective connotation. More specifically, participants from the peripheral province of West-Flanders were shown to behave more positively toward Standard Dutch than toward either their own regional variety or the regional variety from Antwerp. In contrast, participants from the central province of Antwerp behaved most positively toward their own regional variety. Both findings, i.e. a positive attitude towards the standard language as well as a positive attitude towards one's own dialect, are in line with several previous studies (e.g. Giles & Powesland 1975, Garrett, Coupland & Williams 2003). The affective priming paradigm can hence be considered, besides its current applications, a promising new method for indirectly investigating language attitudes.

Whereas the results are promising, however, they are based upon only a limited number of test subjects and language varieties. Further research is definitely needed before any really stable and robust conclusions can be drawn from the language attitude results obtained on the basis of the affective priming paradigm. Specifically, the study should be expanded in terms of the number of subjects and language varieties included, and its experimental design should be further improved. It would, for example, be interesting to experiment with SOA manipulations. In the study reported here the SOA in general was relatively long because of the duration of the auditory primes. By shortening the time interval between the onset of the

prime and the target stimuli (by, for example, exclusively using one-syllable prime words), one can expect, in line with what has been found in other social-psychological studies, to find even stronger and clearer priming effects. Furthermore, it would be interesting to compare the results of the indirect priming test to direct questionnaire ratings in order to find out whether the automatically measured attitudes correspond to the test subjects' conscious conceptualizations of language variation (i.e. their explicit language attitudes towards the same varieties). More in general, we also need to acknowledge that there are limits to what can be learned from our use of auditory affective priming. First, the affective priming effects detected by our study solely pertain to the affective component of language attitudes and give no direct account of any cognitive belief-basis that underlies language attitudes. Second, the experimental stimuli included in our study (isolated words) are poorer in conceptual content than the running stretches of discourse often included in standard speaker evaluation research. Therefore we see the method we propose as an addition to the toolkit of language attitudes research, not as a replacement of other methods.

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