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# **Standardisation: Bolstering Positive Attitudes towards Endangered Language Varieties?**

## **Evidence from Implicit Attitudes**

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Abstract:

Language maintenance studies generally argue that providing endangered varieties with a standard impacts positively their vitality by e.g. increasing positive attitudes (Brenzinger et al., 2003; Fishman, 1991). This paper investigates whether different degrees of linguistic proximity between vernacular varieties and the standard may lead to different speakers' attitudes towards the vernacular varieties. Following sociopsychological models of implicit automatic attitudes, e.g. (Wilson, Lindsey, & Schooler, 2000), we hypothesised that varieties that have a more linguistically close standard would elicit more positive attitudes. We then used an online Auditory Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998), to investigate attitudes towards vernacular Moselle Franconian varieties in two speech communities, the *Belgische Eifel* in Belgium and the *Éislek* in Luxembourg. Moselle Franconian is considered generally vulnerable (UNESCO), and the two speech communities have opted for different methods of introducing a standard variety. While the speech community of Luxembourg created an "own" linguistically close standard (Standard Luxembourgish), the Belgian speech community relies on a more linguistically distant standard, namely Standard German. Results show that linguistic distance between the standard and its vernaculars can impact speakers' attitudes. Our findings have important implications for the role of standardisation processes in language maintenance efforts. ((197 words))

Keywords: Language attitudes; attitude theory; language planning; standardization; language vitality; Moselle Franconian;

## 1. Introduction

### 1.1. Standardisation and attitudes in language maintenance

Language maintenance studies have identified numerous factors that may contribute to the maintenance of endangered varieties in multilingual speech communities, such as the improvement of speakers' attitudes via, among other things, the introduction of a standard variety. (Brenzinger et al., 2003; Fishman, 1991, 2001; Lewis & Simons, 2010).

Standardisation is often suggested as an important step in protecting endangered varieties, especially when these endangered varieties are in contact with a standardised majority language (Brenzinger et al., 2003; Fishman, 1991, 2001; Lewis & Simons, 2010)<sup>1</sup>. The aim of standardisation is to increase a variety's functions, e.g. via literacy, which has been argued to correlate with more positive attitudes (Grenoble & Whaley, 2005; Obiero, 2010). More specifically, standardisation broadens the usage of an endangered variety to include prestigious communicative domains, e.g. governmental and educational domains, thereby fostering the perception that a variety is a fully-fledged language. (Fishman, 1991; Kloss, 1978).

However, standardisation processes can take several routes: on the one hand, they can entail the development of a "new" standard variety. Alternatively, standardisation can involve associating the vernaculars with an exogenous standard variety. In both cases, the standard will differ to various degrees from the endangered varieties it is supposed to be the standard of. Sociolinguistic models of standardisation encompass these two distinct routes with notions such as for example the "selection stage", (Haugen, 1966) "endoglossic vs. exoglossic standard" (Auer, 2005), "endonormativity vs. exonormativity" (Ammon, 1989; Stewart, 1968), and "roofless dialects vs.

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<sup>1</sup> But see for example (Haugen, 1972; Mühlhäusler, 1992) on potential issues arising from standardisation, particularly in the spoken domain.

*Ausbau*-languages” (Kloss, 1978, 1993; Muljadic, 1989). Regardless of the selected route, a standard is meant to act in a potentially protective manner towards the endangered vernaculars<sup>2</sup> with which it is associated. However, the functions and evaluations of the standard and its varieties are not identical, raising questions about the dynamics and outcomes of the presumed protective relation. We therefore need a clearer understanding of the interplay between attitudes towards a standard “protector” variety and the effects on the attitudes towards its vernaculars. Does the presence of a standard always impact positively on the attitudes towards the endangered vernaculars? If it turns out that it does not always do so, the question also arises as to whether the two standardisation strategies – i.e. creation of a new standard or association with an exogenous standard – are equally efficient in improving attitudes towards the endangered varieties. Specifically, we need to encompass a model to explain and ideally predict how the objects towards which attitudes are held (i.e. the endangered vernaculars and their standard) are evaluated in general. Additionally, we need models to explain and predict when these objects are evaluated in a similarly positive manner. Such models can be found in the field of sociopsychology and sociolinguistics.

## 1.2.Social psychological and sociolinguistic attitude models

Historically, sociolinguistic research distinguishes between indirect/covert/implicit/private attitudes vs. direct/overt/explicit attitudes based on attitude elicitation methods and speakers’ attitude awareness. (Baker, 1992; Garrett, 2010; Labov, 2001; Lambert, Frankel, & Tucker, 1966;

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<sup>2</sup> The definitions used here draw from perceptual dialectological approaches (Preston, 1999, 2018; Preston & Niedzielski, 2013) and are therefore speaker-centered, with the “standardness” and “non-standardness” of a variety being based on speakers’ perceptions. The labels “standard” and “vernacular” as used in this paper might therefore correspond to other units of analysis at the production level, depending on the model applied, e.g. base dialect, regiolects, regional standards, standard variety.

Trudgill, 1972). Attitude dimensions of solidarity/ integrative vs. status/instrumental (Gardner, 1988; Lambert, Gardner, Olton, & Tunstall, 1968) are intertwined with these distinctions. Additionally, sociolinguistic research defines language attitudes as part of “language regard” (Preston, 2018) or as language ideologies (Gal & Irvine, 1995; Woolard & Schieffelin, 1994).

Only recently have language attitudinal studies started to re-conceptualized the predominant distinction between covert/indirect/implicit vs. overt/direct/explicit language attitudes (Campbell-Kibler, 2012; Preston, 2018) by including the criterion of automaticity (Pantos & Perkins, 2012; Rosseel, 2017; Rosseel, Speelman, & Geeraerts, 2018; Speelman, Spruyt, Impe, & Geeraerts, 2013), which has become crucial when distinguishing between explicit and implicit attitudes in social psychology (De Houwer & Moors, 2007; Fazio & Olson, 2003). Overall, sociopsychological definitions of implicit attitudes tend to outline the criterion of attitude awareness more precisely than sociolinguistic studies (Kristiansen, 2011; Labov, 2001; Trudgill, 1972). Participants can be unaware of the stimuli that elicit automatic attitudes, of the automatic attitude itself, of its origins and its influence on the measurement process. Most importantly, sociopsychological definitions reach beyond attitude awareness providing further defining features of automatic implicit attitudes: the processes of attitude measurement should be unintentional, uncontrolled and autonomous. Additionally, these definitions outline that implicit attitudes are based on automatic operations, which require only scarce cognitive resources and limited time to process the attitude stimuli (De Houwer & Moors, 2007; Fazio & Towles-Schwen, 1999; Wilson et al., 2000).

With these advances in mind, we would like to suggest that attitude models in language maintenance research would profit from incorporating the notion of automaticity when distinguishing between covert and overt attitudes. Importantly, social psychological research shows that automatic implicit attitudes are generally stronger predictors of habitual and

spontaneous behaviour (Chen, Duckworth, & Chaiken, 1999; Perugini, 2005) as opposed to deliberate, well-considered behaviour. This is especially the case in socially sensitive contexts, e.g. towards ethnic minorities (Dovidio, Kawakami, & Beach, 2001; Dovidio, Kawakami, Smoak, & Gaertner, 2009). In accordance with these findings, we suggest adopting the notion of implicit automatic language attitudes as these are likely to be stronger predictors of habitual and spontaneous language usage, and thus more reliable indicators of language vitality in general, especially compared to the concepts and measures of language attitudes currently used in language maintenance research. We therefore propose to apply automatic implicit attitude models in language maintenance frameworks in order to investigate the conditions under which endangered varieties benefit from the positive attitudes associated with their standard in cases of language contact.

The conditions under which objects are evaluated, and consequently the conditions under which attitudes towards these objects are formed, have been the subject of extensive social psychological research (Bargh, Chaiken, Govender, & Pratto, 1992; Fazio, 1995; Wilson et al., 2000). Of specific interest in many social psychological studies are the conditions under which different objects are automatically evaluated in a similar manner. The representativeness heuristics (Tversky & Kahnemann, 2004) and the applicability principle of heuristic processing (Chaiken, 1980) are prominent concepts in these studies, which show that the perceived resemblance between different objects towards which attitudes are held (i.e. the “attitude objects”) impacts their shared evaluation. More specifically, sociopsychological research on stereotyping and prejudice demonstrates that attitude objects which are perceived to share numerous characteristics tend to be evaluated with the same valence (Dovidio et al., 2001; Dovidio et al., 2009; Nelson, 2009).

In the context of language maintenance, we suggest that this perceived resemblance is largely equivalent to the linguistic distance between a standard and its vernaculars, which will in turn be responsible for governing their shared automatic evaluation. Further, based on the fact that the evaluation of a standard has been argued to be positive by a host of previous studies (Giles & Marlow, 2011; Lasagabaster, 2004; Milroy & Milroy, 1999; Preston, 1989), we propose that any automatic evaluation which the standard and its vernacular might share, would encompass positive evaluative features rather than negative ones. Consequently, we suggest that the linguistic distance between the standard and its vernaculars governs their shared positive evaluation. Additionally, we suggest that this linguistic distance is best conceptualized and measured in a unimodal approach focusing on the spoken standard to ensure the comparability of the standard and its vernaculars.

As discussed above, linguistic distance between a standard and its vernaculars varies depending on the standardisation strategy (i.e. development of a “new” standard or association with an existing, exogenous standard). Therefore, if our suggestion that linguistic distance is central to the perceived resemblance that ultimately impacts attitude evaluation, then we expect that the extent to which a standard is beneficial to its vernaculars depends on their linguistic distance, and that only a close standard will positively influence attitudes towards its vernaculars.

#### Research Hypotheses:

- 1) the nature of the standardisation processes is a strong predictor of speakers’ attitudes towards their vernaculars<sup>3</sup>.

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<sup>3</sup> In addition to other well-known factors such as age, gender, socio-economic status and proficiency. See for an overview (Garrett, 2010).

- 2) speakers have more positive attitudes towards their vernacular in speech communities with a linguistically closer standard variety.

### 1.3 Standardisation and attitudes in Belgium and Luxembourg

We tested our hypotheses in two speech communities, namely in the southern part of the German speaking community of Belgium, i.e. *Belgische Eifel*, and in the northern part of Luxembourg, i.e. Canton *Clervaux*, in the region *Éislek*. These speech communities were selected for two reasons. Firstly, they speak linguistically closely related vernaculars, i.e. Moselle Franconian varieties. (Bruch, 1953; Möller, Weber, Lander, & Wirtz, 2013; Wiesinger, 1982). Secondly, Moselle Franconian has been reported to be vulnerable due to language contact with French and Standard German (UNESCO, 2017). Importantly, however, the two speech communities have opted for different standardisation processes, making them an ideal testing ground for our hypothesis that the nature of the standardisation process is a strong predictor of speakers' attitudes towards vernacular varieties, and for the subsequent prediction that speakers hold more positive attitudes towards their vernacular in speech communities with a linguistically closer standard. More details on the two communities follow below.

#### 1.3.1. Clervaux/ Éislek/ Luxembourg

Since the independence of the Grand Duchy of Luxembourg in 1839, Moselle Franconian varieties have undergone some standardisation (Gilles, 2015; Newton, 2000; Stell, 2006), bolstering their position in ongoing language contact with Standard French and Standard German (Fehlen, 2016; Gilles, 2019). Historically considered a German “dialect” (Gilles, 2019; Newton, 1996; Stell,



2006), the Moselle Franconian variety now called Lëtzebuergesch/ Luxembourgish has been recognized since 1984 as Luxembourg's national language (alongside French and German) currently counting around 266 000 native speakers (Fehlen, 2016). An endogenous standardisation processes (Stell, 2006) together with ongoing convergence (Gilles, 1998) has resulted in considerable structural linguistic closeness between the standard and its vernaculars. Despite this closeness, however, Luxembourgish speakers perceive differences between spoken Luxembourgish varieties on a geographical and contextual level (Entringer, Gilles, Martin, & Purschke, 2018; Fehlen, 2009; Neises, 2013), indicating that a distinction between a spoken standard variety and its vernaculars exist. Speakers identify varieties of the Alzette Valley and Luxembourg City as the most "standard-like" in contrast to varieties from the northern Éislek region, especially Canton Clervaux, which are perceived as the most "non-standard-like". On a contextual level, speakers recognize model speakers of a spoken standard variety, e.g. news presenters, and report contexts in which they aim to speak more "standard-like". Regarding attitudinal differences, studies are limited and mainly investigate attitudes towards Luxembourgish as a homogenous variety with direct methods. Although some studies (Fehlen, 2009; Gilles, Seela, Sieburg, & Wagner, 2010) show positive explicit attitudes towards Luxembourgish compared to the other languages present in the community (German, French, English), only two studies examined explicit attitudes towards different Luxembourgish varieties (Entringer et al., 2018; Neises, 2013), with attitudes towards varieties of the centre region, i.e. Alzette Valley/Luxembourg city being more positive than those of Éislek/Clervaux. Only two studies investigated automatic implicit attitudes towards Luxembourgish (Lehnert, Krolak-Schwerdt, & Hörstermann, 2018a, 2018b), again excluding the varieties' regional variation.

Above findings from perceptual studies tally with dialectological studies (Bruch, 1953), which reported the varieties of the Éislek region to belong to a separate dialectal area that differs most from the varieties of the Alzette valley and which retains the regional features of their variety the most (Entringer et al., 2018; Gilles, 1998; Gilles & Trouvain, 2013). We therefore chose the Éislek, specifically Canton Clervaux, as representative of the vernacular speech community. Canton Clervaux is situated at the northern border with Belgium and Germany and encompasses five districts, Parc Hosingen, Wincrange, Troisvierges, Weiswampach and Clervaux itself. Following the isoglosses established by dialectological studies (Bruch, 1953), we excluded Parc Hosingen from our analysis. Overall, Canton Clervaux is a mainly rural area with a size of 342 km<sup>2</sup> and a population of 18.436 (STATEC, 2019a, 2019b).

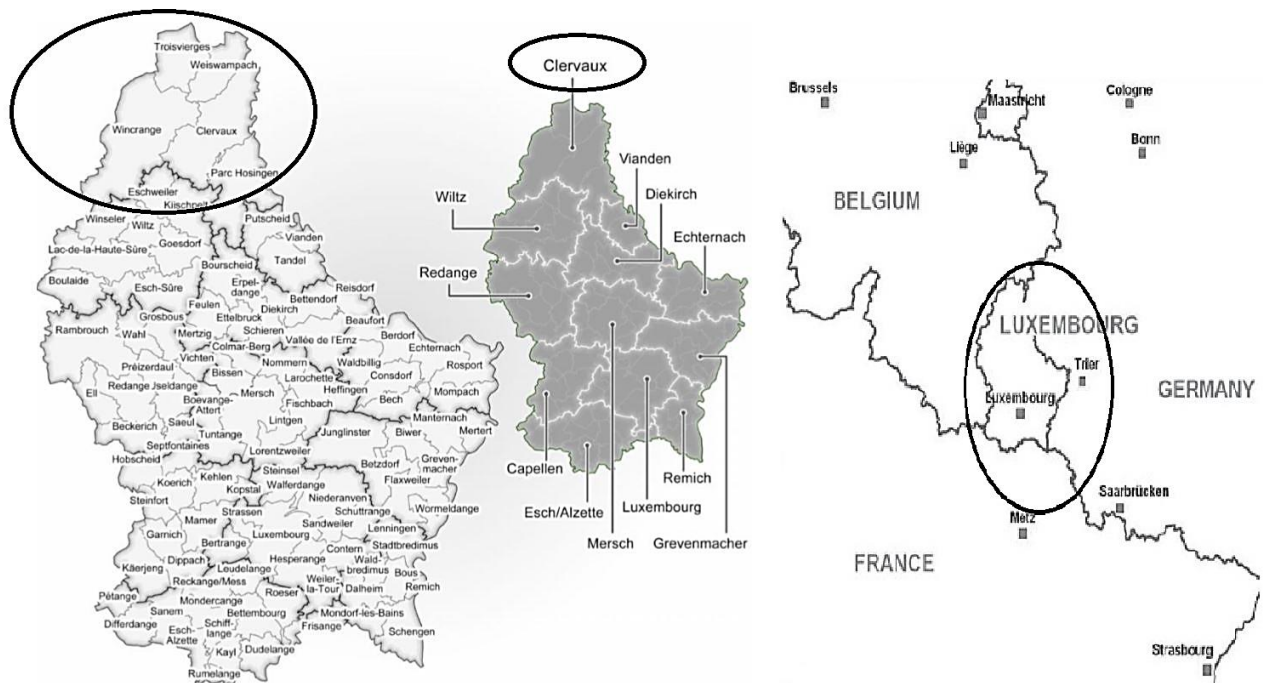


Figure 1: Canton Clervaux in Luxembourg (Neises, 2013)

### 1.3.2. Belgische Eifel/ “Deutsche Gemeinschaft”/ Belgium

The geographical region of *Neubelgien*, “New Belgium” became part of Belgium in 1919, having previously been part of the German Empire. It encompasses the *Deutsche Gemeinschaft* (German speaking community), a political unit with legislative and executive powers similar to the French and Dutch speaking communities and to the bilingual area around Brussels-Capital. While being an autonomous political entity with German as its official language, the *Deutsche Gemeinschaft* is also part of the French speaking Walloon region of Belgium, on which it depends economically and politically (Möller, 2017). Overall, German is an official language of Belgium (alongside French and Dutch), but the around 70.000 German speakers constitute the smallest speech community in Belgium, totalling only 0,6% of the Belgian population (Möller, 2017).

The *Deutsche Gemeinschaft* lacks an “own” standard (Möller, 2017) having adopted a linguistically distant standard, namely Standard German (Nelde & Darquennes, 2002). Importantly for our study, traditional dialectological studies (Barbour, 1990; Wiesinger, 1982) established that Standard German is significantly linguistically distant from the Low Franconian, Ripuarian and Moselle Franconian vernaculars spoken in the *Deutsche Gemeinschaft*. Empirical studies on speakers’ perception in this community are extremely scant (Gramß, 2008; Riehl, 2007; Weber, 2009), but there is some evidence that a significant linguistic distance also emerges in speakers’ perception of their vernacular as a language separate from Standard German (Weber, 2009). Additionally, research showed the clearest distinction between standard and vernaculars at the contextual level. Standard German occupies domains like work, government and education including the spoken medium in these domains. (Ammon, 1995, 2015; Nelde, 1979; Nelde & Darquennes, 2002; Weber, 2009). The only quantitative study on explicit attitudes (Weber, 2009) shows a somewhat higher rating of Standard German on the status/instrumental attitude dimension, which is indicative of a standard variety (Milroy, 1991). Additionally, differences appear on a

geographical level, with the most competent vernacular speakers and the most widespread usage of the vernacular located in the south of the *Deutsche Gemeinschaft*, i.e. *Belgische Eifel*.

Based on above findings, we therefore chose the *Belgische Eifel* region with all its districts, Amel, Büllingen, Burg-Reuland, Bütgenbach and St.Vith, as a second case that is representative of a vernacular speech community. The predominantly rural area with its 631 km<sup>2</sup> has a population of 30219.

For brevity, the speech communities, i.e. Canton Clervaux in the *Éislek* region and the *Belgische Eifel* in the *Deutsche Gemeinschaft*, will henceforth be referred to as ‘Luxembourg’ and ‘Belgium’ respectively.

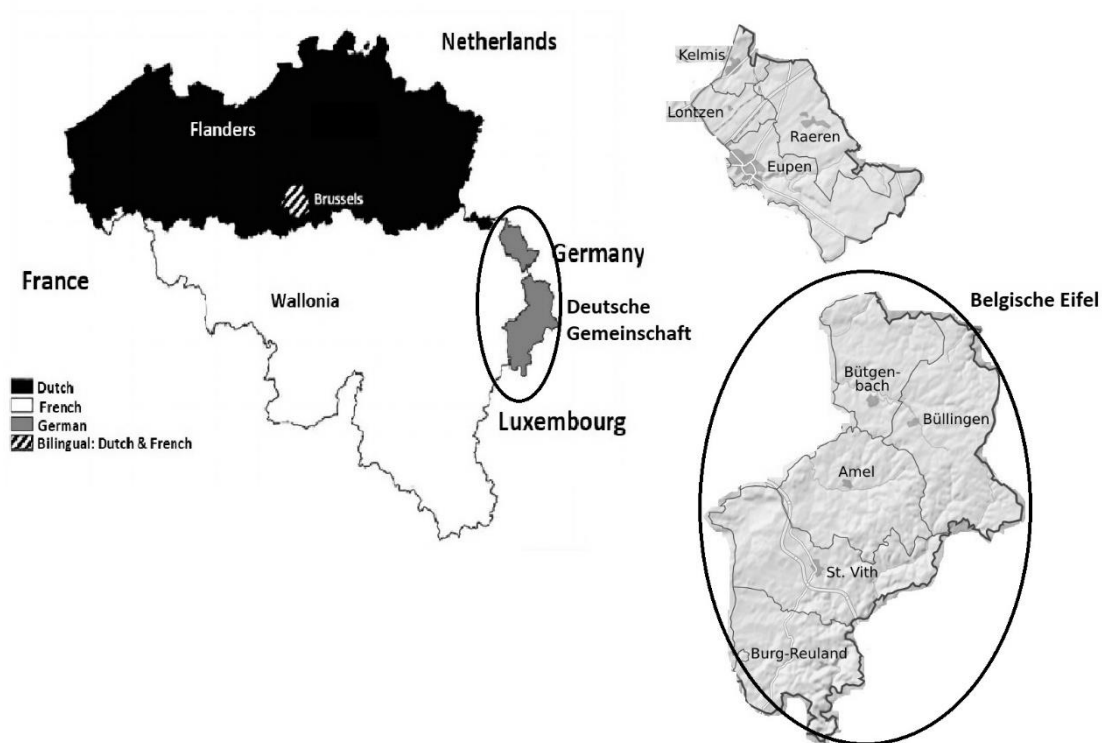


Figure 2: *Belgische Eifel* in Belgium

#### 1.4. Summary

As far as we are aware, no research has been carried out on speakers' automatic implicit attitudes in the above speech communities. Based on previous research discussed in section 1.3 and on accepted dynamics in language ideology (Gal & Irvine, 1995; Milroy, 1991; Woolard, 1992), we expected to find more positive attitudes towards the respective standard variety than towards the vernaculars in both speech communities. More specifically, we expected Standard German to be evaluated more positively than Moselle Franconian varieties in Belgium, and Standard Luxembourgish to be evaluated more positively than the vernacular Moselle Franconian varieties in Luxembourg.

Our research question concerned the conditions under which vernaculars profit from the positive attitudes associated with their standard in language endangerment situations. As discussed under 1.2, we suggest that this positive influence depends on the linguistic distance between the standard and its vernaculars. Consequently, we hypothesised that the speech community (Luxembourg or Belgium) and the different degrees of linguistic distance resulting from different standardisation processes (endogenous vs. exogenous) would be a strong predictor of vernacular speakers' implicit automatic attitudes. Specifically, positive evaluation of the prestigious standard varieties (i.e. Standard Luxembourgish and Standard German) would be shared more extensively with the vernaculars in the speech community that has a linguistically closer standard, namely Luxembourg. We therefore hypothesised that vernacular speakers are likely to present more positive evaluations of their Moselle Franconian varieties in Luxembourg than in Belgium.

#### 2. Materials and methods

## 2.1. Implicit Association Test

To investigate our hypotheses and measure implicit automatic attitudes towards the different standards and their vernaculars, we conducted an Implicit Association Test (IAT) (Greenwald et al., 1998) in each speech community. The IAT measures automatic implicit attitudes by measuring the strength of the link between a target category (attitude object) and an attribute category (emotional valence: positive or negative). More specifically, participants perform two categorization tasks alternately in combined blocks: They categorize target stimuli (attitude object A and B) and attribute stimuli (positive and negative stimuli) into their respective categories. The fulcrum of this paradigm is the repetition of these blocks of combined categorization with different key mappings. Each attribute category is combined with each target category in different blocks, i.e. attitude object A is combined once with the positive and once with the negative attribute category. The mapping that results in participants' evaluations being faster and more accurate is taken to be the mapping which corresponds best to their association of the attribute and target categories.

IATs have found numerous applications outside of social psychology, notably in (Socio-) linguistics (Campbell-Kibler, 2012; Pantos & Perkins, 2012; Redinger, 2010; Roessel, Schoel, & Stahlberg, 2018; Rosseel et al., 2018) frequently using visual stimuli, e.g. (Glock & Karbach, 2015). Overall, studies used stimuli of various modalities, occasionally in a cross-modal design. Besides the exceptional application of gustatory stimuli (Crisinel & Spence, 2010), some IAT studies used verbal and non-verbal auditory stimuli (Anikin & Johansson, 2019; Lehnert et al., 2018b; Pantos & Perkins, 2012; Vande Kamp, 2002). Additionally, online versions have been successfully applied in social sciences and sociolinguistics (Friese, Bluemke, & Wänke, 2007; Roessel et al., 2018; Xu, Nosek, & Greenwald, 2014)

## 2.2. Participants

Participants were recruited through the local media, and a certain degree of disclosure was necessary to attract interest. However, we wanted to ensure that the measured implicit attitudes still fulfilled the defining criteria of automaticity (see section 1.2). Therefore, a short questionnaire after the IAT was used to check participants' awareness of the study's aim and experimental paradigm to avoid the malleability of attitudes (Blair, 2002).

A total of 127 participants were included in the analysis. A further 36 participants took part in the online study but were excluded as they were above 60 years old, and research has shown considerable limitations of reaction time experiments with older participants (Hultsch, MacDonald, & Dixon, 2002; Porciatti, Fiorentini, Morrone, & Burr, 1999).

The Belgium sample included 64 participants (23 males, 41 females, mean age = 39.7 years, s.d. = 10.02). Participants' self-assessed competence in the standard and vernacular varieties was rated as high on a 5-point scale (from 0/not at all, to 4/perfect, vernacular: mean = 3.27, s.d. = 0.70; standard: mean = 3.43, s.d. = 0.51).

The Luxembourg sample included 63 participants (24 male, 39 female, mean age = 35.5 years, s.d. = 12.2) Participants rated themselves as highly competent in the standard and vernacular varieties on the same 5-point scale (from 0/not at all, to 4/perfect: vernacular: mean = 3.71, s.d. = 0.57; standard mean = 3.30, s.d. = 0.71)

In both groups, participants reported having spent the majority of their childhood in the respective vernacular speech communities (see section 1.3).

## 2. 3. Materials:

### 2.3.1. Target stimuli

In an IAT, the target stimuli represent the attitude objects, which in our case correspond to the standard and the vernacular variety for each speech community. To circumvent issues with the medium of writing, e.g. the fact that vernaculars are not habitually seen in the written domain, target stimuli were in audio format. The speakers and recording process are described in “Recording stimuli: speaker selection”. The auditory stimuli consisted of six words (one or two syllables) for each speech community. The words were selected from a list of 60 potential stimulus words reported to tease out lexical and phonetic differences between the different attitude objects, namely the standard and its vernaculars (Bruch, 1953; Entringer et al., 2018; Heinen & Kremer, 2016; Möller et al., 2013; Neises, 2013). Final stimuli selection (N= 12, 2 language varieties x 6 words) involved corpus analyses of the target words in the standard variety in order to control for potential confounds of frequency and valence. For the vernacular words, stimuli selection was informed by a small-scale perceptual norming study with local informants (N= 19-23)<sup>4</sup> in the relevant speech communities since, unlike the standard varieties, there are no corpora available on which to base stimulus selection. Besides providing information on frequency and valence that was otherwise unavailable, the norming study also informed selection of the vernacular speakers needed to record the auditory stimuli, ensuring the speakers’ representativeness throughout the entire speech community. Finally, the study provided labels for target categories, i.e. the standard and vernacular varieties, to ensure their validity in the respective speech community. Further information about our norming study can be found in Appendix A.

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<sup>4</sup> Variation is due to four participants not completing the norming study and providing data only for the initial parts.



## Frequency and valence

We controlled for frequency and neutral valence of all six target stimuli in all language varieties. For the vernaculars, target word selection was informed by the results of our norming study, as follows. First, informants from different parts of the speech communities assessed the vernacular stimuli to be frequent (from 0/not at all, to 4/highly frequent: mean = 3.20; s.d. = 0.28). This allowed us to minimize potential variations in frequency of vernacular target words throughout the speech community. Secondly, informants assessed the target stimuli to be of neutral valence (from 0/extremely negative, to 4/extremely positive: mean = 2.50; s.d. = 0.27).

Additionally, we established that the words in the standard varieties were also highly frequent (Zipf frequency: 3,20; s.d. = 0,28) based on ratings from four different corpora (between 52 million and 201,3 million words) consisting of film subtitles in English, German, French and Dutch (Brysbart et al., 2011; Keuleers, Brysbart, & New, 2010; New, Pallier, & Brysbart, 2001; van Heuven, Mandera, & Keuleers, 2014).<sup>5</sup> Numerous research studies show the advantages of corpora based on film subtitles when investigating spoken words (Brysbart et al., 2011). Furthermore, all target stimuli were of neutral valence, mean = 58.24%, s.d. = 6%, as measured on a scale ranging from 100% (extremely positive) to 0% (extremely negative). This scale was the result of standardizing<sup>6</sup> ten rating scales of emotional valence (Bertels, Kolonsky, & Morais, 2009; Bonin et al., 2003; Bradley, 1999; Corson & Quistrebert, 2000; Lahl, Göriz, Pietrowsky, & Rosenberg, 2009; Messina, Morais, & Cantraine, 1989; Monnier & Syssau, 2014; Moors et al., 2013; Vö et al., 2009; Warriner, Kuperman, & Brysbart, 2013).

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<sup>5</sup> We are grateful to Nathalie Entringer and Peter Gilles from the University of Luxembourg for giving us access to the only corpus for Luxembourgish, described in (Gilles, 2015). Unfortunately, it could not provide us frequency information due to register and size issues.

<sup>6</sup> We re-scaled the different rating scales without affecting data characteristics (Dawkes, 2008) to ensure cross-corpus and language comparability

### Recording stimuli: speaker selection

All stimuli were recorded with a picture naming task in order to circumvent potential issues with the medium of writing, e.g. participants' unfamiliarity with the written vernacular. Before the recording procedure, speakers reported general biographical information, including their own childhood residence and language competence, and their parents'. All recordings were subsequently equalized and noise cancellation was applied using audio editing software.

To ensure our vernacular speakers' representativeness of their respective speech community, their speech had to lack restricted areal features, i.e. typical of only a small area. Therefore, we selected vernacular speakers whose varieties were potentially influenced by different vernacular varieties within the speech community. Specifically, we established that—for each of our selected vernacular speakers—at least one of their parents had moved to the speaker's childhood place of residence from another region within the speech community while maintaining his or her (i.e. the parent's) regional variant of the vernacular variety. Alternatively, we selected speakers who had themselves spent a significant amount of time in different regions within the speech community.

Second, we needed proficient vernacular speakers who were also able to produce the standard variety in order to create representative target stimuli. In Belgium, most vernacular speakers are proficient in the standard variety, i.e. Standard German (Nelde, 1979; Weber, 2009). In Luxembourg, however, teaching of written Standard Luxembourgish is limited and a standard pronunciation is not taught at all (Gilles, 2015). Thus, we selected Luxembourgish vernacular speakers who underwent some professional training, such as actors and teachers. A total of six speakers were recorded, three in Belgium and three in Luxembourg. A single speaker was then selected from each speech community based on the results of our norming study. Both speakers

were male, from the same socio-economic background and between 50 and 52 years old. They were both nationals of their respective countries and both had parents who were vernacular speakers from the same speech community. They reported to be highly proficient in the standard and its vernacular variety of their respective speech communities, based on their self-assessment on a 5-point scale (from 0/not at all, to 5/perfect: vernacular competence: mean = 5.0, standard competence: mean = 4.25). Moreover, our norming study showed that their varieties were perceived as strongly resembling the vernacular varieties of our informants throughout the speech community, as measured on a 5-point scale (from 0/not at all, to 4/completely: Belgium: mean = 3.2; Luxembourgish: mean = 3.00). Furthermore, informants only rarely agreed on the speakers' exact childhood place of residence, though they all correctly identified each speaker as belonging to the speech community under investigation. This is indicative of a lack of restricted areal features in each of the speakers' vernacular, suggesting that their vernacular variety is representative of the wider community. Finally, each speaker's varieties (both standard and vernacular) were clearly distinguished, identified and labelled as such by the informants in the norming study.

### 2.3.2. Attribute stimuli:

IATs investigate the link between two categories, target (attitude objects, i.e. standard and vernacular) and attributes. The attribute category provides the attributes with which the target is potentially linked, occasionally being specific attributes like "working class/ middle class" (Campbell-Kibler, 2012). In our investigation the attribute category represents general emotional valence, i.e. "positive/negative" which is more common (Pantos & Perkins, 2012).

To avoid language interferences, attribute stimuli needed to be non-verbal. We selected 16 emotionally valent pictures<sup>7</sup> from the International Affective Picture System (Lang, Bradley, & Cuthbert, 2008): 8 positive pictures (mean: = 7.94; s.d. = 1.38, from 1/negative to 9/positive) and 8 negative pictures (mean: = 2.61, s.d. = 1.60). To avoid confounds, none of the attribute pictures depicted any semantic associations with the target words, as demonstrated by association norms (Kiss, Armstrong, Milroy, & Piper, 1973; Melinger & Weber, 2006; Nelson, McEvoy, & Schreiber, 1998)

#### 2.4. Procedure:

The online study was programmed in JavaScript, including elements from jsPsych (Leeuw, 2015) and was run with JATOS (Lange, Kühn, & Filevich, 2015). Instructions were in Standard German for Belgian participants, and either in Standard German or Standard Luxembourgish (depending on participants' choice) in Luxembourg. After giving their informed consent, participants filled in a language background questionnaire. After the experimental phase, participants completed a questionnaire to indicate their explicit language attitudes (Schoel et al., 2012), and answered questions on their awareness of attitude measurement so that malleability of implicit attitudes could be excluded from analysis (Agosta, Ghirardi, & Zogmaister, 2011; Blair, 2002; Fiedler & Bluemke, 2005). Finally, two open questions gave participants the opportunity to report any problems with the stimuli or the speaker's representativeness and familiarity. The complete IAT lasted approximately 12 minutes on average.

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<sup>7</sup> IAPS no.: 1440; 2550; 1750, 5833, 2050; 5829; 7330; 2311; 2276; 6250; 9571; 6510; 9909; 7380; 9341; 9000

In the main experimental phase, participants were asked to sort visual attribute stimuli into the categories “positive” and “negative” and, similarly, to sort target auditory stimuli into the categories “standard” and “vernacular”, as quickly and accurately as possible by pressing designated keys on the keyboard. The stimuli appeared in the middle of the screen as either a visual stimulus or, for auditory stimuli, a pictogram indicating sound (a loudspeaker, see Figure 3).

The key mappings were indicated on top of the screen. Non-verbal labels, in the form of “thumbs up” and “thumbs down” pictograms, indicated the categories “positive” and “negative”.

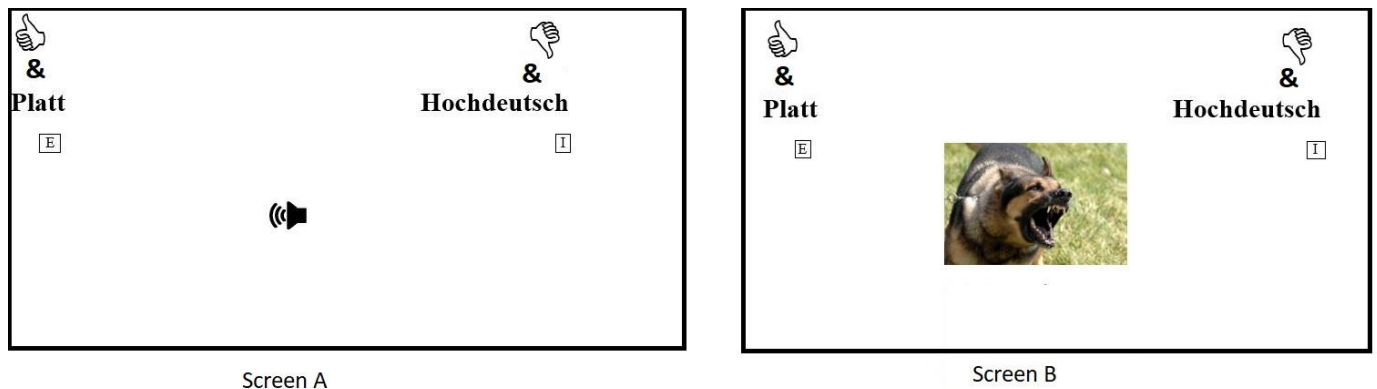


Figure 3.: Screen A and B alternate in a combined IAT block in Belgium

For Belgium, the label “Hochdeutsch” indicated the standard variety and “Platt” the vernacular variety, as established through our norming study. For Luxembourg, there was some variation among informants on what the appropriate labels are for each variety. We decided to use an abbreviation to maximize personal associations and avoid variations in spelling: The label “Lëz-St” indicated the standard variety, leaving it to the participant to make the association with “Standard” or “Staater” (i.e. the variety associated with Luxembourg city), while the label “Éislek”,

based on the geographical region, indicated the vernacular variety. These labels established by the norming study were in line with previous research (Entringer et al., 2018; Fehlen, 2009; Möller et al., 2013; Weber, 2009).

After an erroneous trial, i.e. a false categorization, a red cross appeared as negative feedback. We opted for this continuous feedback throughout all blocks to increase the number of completed IATs. For each stimulus categorization we measured accuracy (correct/incorrect) and reaction time (RT) in milliseconds. Overall, our online IAT had seven blocks with differences in amount of trials (20 trials or 40 trials), stimulus type (images only, audio only, both) and key mapping (categories mapped on left key and right key). The fulcrum of the experimental design is the switch of the key mapping after block 4 for the target stimulus categories, i.e. “standard or vernacular”, while the “positive/negative” mapping remains constant. To counterbalance order effects, participants were randomly assigned to two different study types with different block orders. Table 1. summarizes the experimental design:

study type 1					study type 2			
block	amount of trials	stimulus type	Left key <sup>8</sup>	Right key <sup>9</sup>	amount of trials	stimulus type	Left key	Right key
1	20	audio	vernac	st	20	audio	st	vernac
2	20	image	pos	neg	20	image	pos	neg
3	20	both	vernac & pos	st & neg	20	both	st & pos	vernac & neg
4	40	both	vernac & pos	st & neg	40	both	st & pos	vernac & neg
5	20	audio	st	vernac	20	audio	vernac	st

<sup>8</sup> The “E” key on the keyboard constituted the Left key

<sup>9</sup> The “I” key on the keyboard constituted the Right key.

6	20	both	st & pos	vernac & neg	20	both	vernac & pos	st & neg
7	40	both	st & pos	vernac & neg	40	both	vernac & pos	st & neg

Table 1. Experimental design: vernacular (vernac), standard (st), pos (positive) and neg (negative) categories.

### 3. Results

185 participants from both vernacular speech communities took part in the online study. Data were screened for duplicates to avoid multiple participation. In addition to discarding data from participants older than 60 years ( $n = 36$ , see section 2.1.), we filtered for participants who claimed to have previously taken part in more than one IAT experiment ( $n = 14$ ). This was done to avoid malleability of automatic attitudes, which has been reported to occur with participants' increasing experience of the IAT paradigm (Agosta et al., 2011; Fiedler & Bluemke, 2005). Furthermore, we discarded data from participants who indicated a high rate of unknown stimulus words ( $n = 3$ ) as this suggested potentially low language competence. Data from participants for whom more than 10% of trials had latencies less than 300 ms were also excluded ( $n = 5$ ), following the scoring algorithm (Greenwald, Nosek, & Banaji, 2003). After matching the data of study type 1 and 2, we excluded erroneous trials, eliminated trials with latencies above 10,000 ms, and calculated the standard (difference) "D-score" (Greenwald et al., 2003), which in our case equals a preference score for the vernacular over its standard variety, i.e. the implicit automatic attitude towards the vernacular compared to the attitudes towards the standard. This preference score is an established effect size measure used in the IAT paradigm and in our case, it represents association strength of the vernacular variety with positive evaluations opposed to the standard variety. It is calculated by

subtracting each participant's mean RTs for the blocks with the “vernacular” and “positive” mapping” from the blocks with the inverted mapping, i.e. “standard” and “positive”. This difference in RTs is then divided by the pooled standard deviation. After removing of 5 outliers based on Cook's distance and studentized residuals, the 127 *D-scores* were normally distributed.

Two one sample t-tests confirmed that the experimental paradigm reliably caused participants to react significantly differently depending on key mapping. Specifically, participants' *D-scores* in each speech community were significantly different from 0 ( $t(62)=4.98, p<0.001, d=0.627$ ;  $t(63)=-5.68, p<0.001, d=-0.710$ ). Various tests with the *D-score* as dependent variable ruled out potential confounding variables. Specifically, there was no statistically significant difference between trial types 1 and 2 (independent sample t-test:  $t(125) = 0.263, p = 0.793, d= 0.0478$ ), level of previous IAT experience (no IAT vs. one IAT, independent sample t-test:  $t(125) = -0.594; p = 0.554, d= -0.155$ ), language of instruction in Luxembourg (German vs. Standard Luxembourgish, independent sample t-test:  $t(61) = 1.54, p = 0.128, d= 0.457$ ) and, most importantly for our purposes, between the individual districts within the respective speech communities – Luxembourg: one-way independent ANOVA:  $F(3, 59) = 0.421; p= 0.739, \eta^2 = 0.021$ ; Belgium: Kruskal-Wallis test:  $H(4) = 3.09; p = 0.542, \epsilon^2 = 0.049$ ).

In section 1.4., we hypothesised that first, speech community would be a strong predictor of vernacular speakers' attitudes towards their varieties and second, Luxembourgish vernacular speakers will tend to have more positive attitudes towards their variety. Now, we tested our hypotheses with a multiple linear regression, predicting *D-scores* from factors such as gender, age, standard, vernacular and French competence (Baker, 1992), adding the variable under investigation, namely speech community. We included French competence as a potential substitute indicator for participants' socio-economic status, for which we did not have direct measurements.



Studies on Luxembourg found a correlation between self-assessed competence in French as a foreign language and level of education and – to some extent – socio-economic status (Fehlen, 2009, 2016), due to the role of French in education. However, competence in French cannot indicate the level of education in Belgium, due to a different educational and socio-political background. Thus, French competence can only be partially regarded as a potential indicator of participants’ socio-economic status.

Importantly, a multiple regression analysis showed that speech community was the strongest predictor of *D-score*. Generally, the model statistically significantly predicted *D-scores*,  $F(6, 120) = 11.1, p < .001, R^2=0.357, \text{adj. } R^2 = .32$ . Table 2. lists regression coefficients and standard errors.

<b>Predictor</b>	<b>Estimate</b>	<b>SE</b>	<b>t</b>	<b>p</b>	<b>Stand. Estimate</b>
Intercept	-0.13195	0.29502	-0.447	0.655	
French knowledge	-0.15472	0.06693	-2.312	0.023	-0.1984
Standard knowledge	0.09588	0.07755	1.236	0.219	0.1116
Vernacular knowledge	0.07956	0.06732	1.182	0.240	0.1009
speech community:					
BELG – LUX	-0.58009	0.08936	-6.491	< .001	-0.5479
age	-0.00246	0.00366	-0.672	0.503	-0.0529
gender:					
male – female	-0.06206	0.08286	-0.749	0.455	-0.0566

Table 2.: Model Coefficients: D-score/vernacular preference score

Overall, participants in Luxembourg had higher *D-scores* (mean = 0.28; s.d. = 0.44), i.e. associating their vernacular more strongly with positive evaluations when compared to Belgian participants (mean = -0.31; s.d. = 0.44). The *D-scores* involved a change from a negative sign to a positive sign,

indicating a change in the direction of preference. Luxembourgish average *D-scores* were positive (mean = + 0.28), showing a preference for the vernacular over the standard, whereas Belgian participant *D-scores* were negative (mean = -0.31), indicating a preference for the standard over the vernacular.

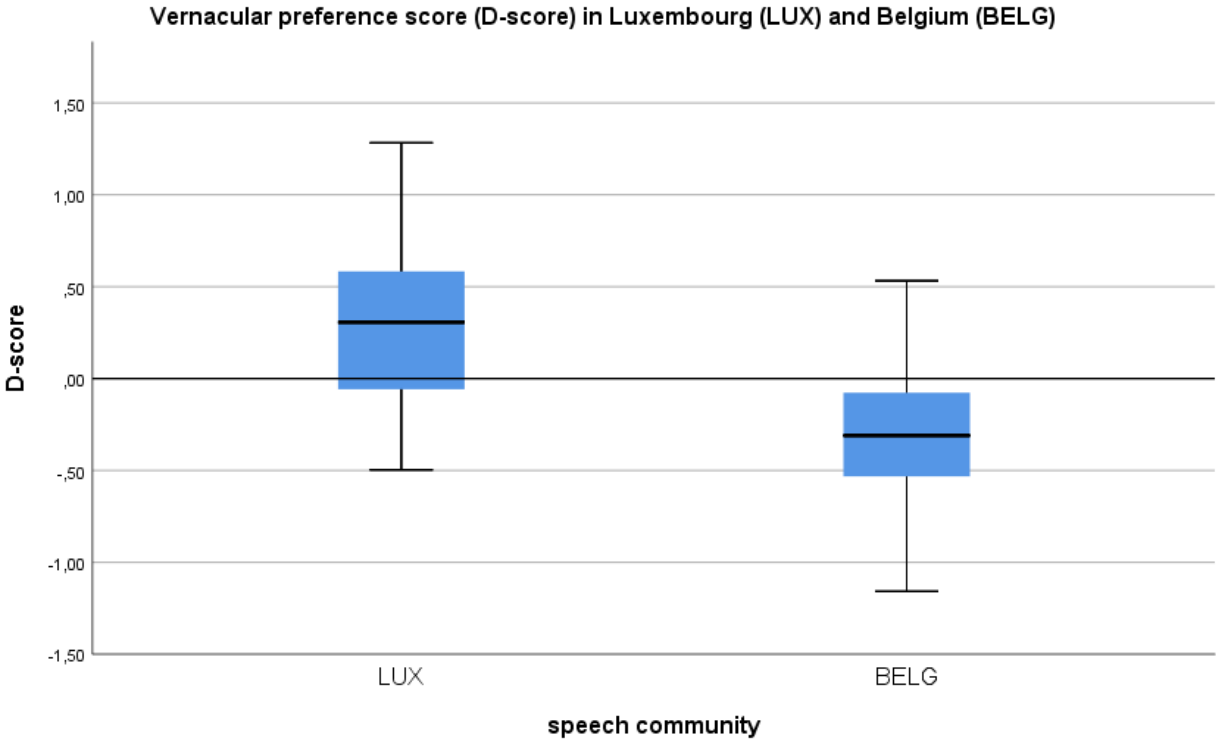


Figure 4: Luxembourg (mean = 0.28; s.d. = 0.44, IQR= -0.0575, 0.306, 0.583), Belgium (mean = -0.31; s.d. = 0.44, IQR= -0.525, -0.319, -0.0792).

#### 4. Discussion

Numerous studies in language maintenance either explicitly or implicitly argue that standardizing an endangered variety contributes to raising its prestige and increases positive attitudes (Brenzinger et al., 2003; Fishman, 1991, 2001; Grenoble & Whaley, 2005; Laakso, Sarhimaa, Spiliopoulou Åkermark, & Toivanen, 2016; Lewis & Simons, 2013). Our study aimed to

investigate the conditions under which endangered varieties profit from positive attitudes towards the variety that is meant to act as their standard. We proposed to apply sociopsychological attitude models with the notion of automaticity, and from these we inferred two hypotheses:

- 1) the nature of the standardisation processes is a strong predictor of speakers' attitudes towards their vernaculars
- 2) speakers have more positive attitudes towards their vernacular in speech communities with a linguistically closer standard variety

Drawing on implicit automatic attitude models, we inferred that linguistic distance between standard and vernacular in a speech community would influence the amount of perceived resemblance and thus, similar evaluation. Since numerous sociolinguistic studies have shown the prestigious features of standard varieties on the explicit and implicit level (Giles & Marlow, 2011; Lippi-Green, 1994; Milroy, 1991; Rosseel et al., 2018), we concluded that linguistic distance may influence how much of the standard variety's positive evaluation is shared with its vernacular variety. A close standard would be perceived to resemble the vernacular variety and therefore share its positive evaluation. Conversely, a distant standard would be perceived to not resemble the vernacular, not sharing its positive attitudes.

We tested our hypotheses in the vernacular (Moselle Franconian) speech communities of Belgium and Luxembourg which have undergone different types of standardisation, i.e. associating the vernacular varieties with an exogenous standard (Belgium) and creating a "new" endogenous standard (Luxembourg). Following hypothesis 2 above, we predicted that speakers from the speech community with a closer standard (Luxembourg) would hold more positive attitudes towards their vernacular.

Our findings showed that both our hypotheses were borne out: First, speech community was the strongest of all predictor variables, suggesting that how endangered vernaculars are standardised influences attitudes towards them more than any other sociolinguistic factor such as age or gender. Second, the *D-scores*, representing a preference for the vernacular over the standard, were significantly higher in Luxembourg (close standard) than in Belgium (distant standard). These findings have significant implications for language planners and policy makers in endangered language communities. In numerous language maintenance efforts, the first step is the standardisation of endangered vernaculars in order to improve attitudes and thus bolster their position in language contact situations (Grenoble & Whaley, 2005). Our findings suggest that only the introduction of a close standard can lead to the intended protective effect. When a distant standard is introduced, we face a situation where only the standard itself will potentially be maintained, to the detriment of the endangered vernaculars themselves despite the fact that these vernaculars were the object of language maintenance efforts in the first place.

However, there are some caveats: First, the overall fit of the model of our regression analysis was lower than we expected based on the number of predictors. However, the evaluation of the model's fit proves to be difficult to contextualize, since sociolinguistic studies applying IAT measures have rarely conducted a regression analysis at all (Campbell-Kibler, 2012) or did not include general sociolinguistic background variables like age and gender (Rosseel et al., 2018).

Moreover, the hypothesis that emerged when combining our two points of departure (i.e. the widely-held assumption that vernaculars profit from positive attitudes toward their standard and attitudinal models from the social psychological tradition) was based on the expectation that the standard would be generally evaluated more positively than the vernaculars themselves. Many sociolinguistic studies discuss standard language ideology (Lippi-Green, 2000; Milroy, 1991;

Woolard & Gal, 2001) and IATs confirm more positive implicit attitudes towards the standard variety when compared to vernaculars in other speech communities (Rosseel et al., 2018). Luxembourgish participants preference for the vernacular over the standard was therefore surprising. Although we anticipated more positive attitudes towards the vernacular in Luxembourg than in Belgium based on sociopsychological models, we still expected to find more generally positive attitudes towards the standard in both speech communities. Specifically, we expected negative *D-scores* in both speech communities, indicating a general preference for the standard, while also expecting smaller values for Luxembourg, indicating more positive attitudes towards the vernacular due to its close proximity to the standard.

Researchers provide conflicting arguments as to why Standard Luxembourgish and Standard German are potentially not evaluated equally positively in their respective speech communities. On the one hand, some discuss lower degrees of standardisation of Luxembourgish (Gilles, 2015), which also shows in speakers' doubts on whether their standard can be considered a fully-fledged language (Bellamy & Horner, 2018). Accordingly, Standard Luxembourgish plays only a minor role in the education system, since this "new" standard variety still lacks its full implementation in the speech community. Despite its occasional, unofficial use in the classroom (Redinger, 2010), Standard Luxembourgish is not the officially medium of instruction (Horner & Weber, 2015). Additionally, the teaching of Luxembourgish as a school subject to L1 speakers is limited and teachers are advised by the ministry of education to be wary to not discriminate Luxembourgish vernaculars (Horner & Weber, 2010). This lower level of prescriptivism potentially indicates how Standard Luxembourgish might not adhere to standard language ideology (Lippi-Green, 2000; Woolard & Gal, 2001). As a result, Standard Luxembourgish lacks prestige, which shows in comparison to its vernaculars.

This contrasts with Standard German, a language whose standardisation is very high (Mattheier, 2003) and whose status as a language is not contested. Consequently, attitudes towards native speakers of Standard German are shown to be overwhelming positive in contrast to its vernaculars and other standardized majority languages, e.g. (Adler, 2019; Schoel et al., 2012). Accordingly, the standard language ideology of Standard German and its high levels of prescriptivism are well-evidenced in research, e.g. (Adler, 2019; Maitz & Elspaß, 2011). Unlike Standard Luxembourgish, Standard German is the medium of instruction and also a subject in the schools of our Belgian speech community. To the best of our knowledge, no study so far has investigated the role of Standard German in education in Belgium. However, studies of other speech communities demonstrate how Standard German is intertwined with high levels of prescriptivism in various education systems (Davies, 2006; Schmidlin, 2017; Wagner, 2009; Weber, 2009). Overall, lower degrees of standardisation could be the reason why Standard Luxembourgish is not evaluated equally positively as Standard German in their respective speech communities.

On the other hand, studies also show how Standard Luxembourgish carries symbolic value for national identity (Bellamy & Horner, 2018; Horner & Weber, 2008), manifesting itself in very positive explicit and implicit attitudes (Fehlen, 2009; Lehnert et al., 2018b). Even if there are no comparable attitudinal studies in Belgium, the symbolic value of the exogenous Standard German for the speech community's identity is questionable. Research emphasizes that Standard German does not constitute an "own", endogenous standard for the community (Möller, 2017), but the standard of the neighbouring state of Germany. Studies also discuss the more symbolic value of the vernaculars compared to Standard German (Riehl, 2007).

Our selection of the standards, namely Standard German and Standard Luxembourgish respectively, could be another possible explanation for the different attitudes towards the standard varieties in the two speech communities. Generally, the *D-score* is a relative measure which needs

to be interpreted in the context of specific target categories, i.e. attitude objects, which were contrasted in the IAT measure (Nosek, Greenwald, & Banaji, 2005). However, other highly standardised varieties are also present in both speech communities. Therefore, while our findings revealed a preference for the vernacular over the standard in Luxembourg, such preference might not exist between the vernaculars and other standardised varieties present in the community. More specifically, research discusses also a trilingual language ideology in Luxembourg, i.e. Standard German, French and Luxembourgish, besides speakers' monolingual identification with Luxembourgish as a national language (Horner & Weber, 2010). French in particular features as a functional, genealogically unrelated standard in Luxembourg (Gilles, 2019). While it is also present in Belgium in H(igh) domains typical of a standard variety (Gramß, 2008; Möller, 2017), some studies question its role as a functional standard in this speech community (Darquennes, 2019). Additionally, Standard German has been reported to feature as a functional standard in Luxembourg (Gilles, 2019) with evidence that it is very prominent in the media (Fehlen, 2016) and that it elicits positive instrumental attitudes (Fehlen, 2009), both of which are properties indicative of a standard variety.

Further research into implicit automatic attitudes in these speech communities is therefore needed, in order to investigate the impact of these other standards as well as of the potentially standards discussed here on the attitudes towards the endangered vernaculars.

((7.625 words))

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Appendix:

### Norming study

A small-scale (n = 19-23) online norming study was conducted using JATOS (Lange et al., 2015). Belgian informants (n = 9-10<sup>10</sup>; female: 5-6; male: 4; age: mean = 46,36; min. 22, max. 77 years) originated from various districts of the speech community. Based on their self-assessment on a 5-point Likert scale (from 0/not at all, to 4/perfect) they were proficient vernacular speakers (mean = 2,9, s.d. = 0,28). Similarly, their counterparts in Luxembourg (n = 10-13; female: 7-8; male: 3-5; age: mean = 44,84; min. = 27, max. 64 years) originated from all districts of the speech community and reported their vernacular proficiency as very high (mean = 3,86, s.d. = 0,45). In the first part of the study, informants were presented with speech samples in their respective varieties (standard and its vernacular) spoken by three different speakers from the same speech community (e.g. Belgium) plus two samples by speakers from the other speech community (e.g. Luxembourg) that acted as distractors. The speech samples involved a picture description (14-16 seconds) and a three-word sequence (3-5 seconds). Informants indicated, on a 5-point scale, how much they thought their own vernacular was similar to that of each recording. They were also asked to guess the origin of the speakers in an open question. Finally, they provided and chose labels through open and multiple-choice questions on the appropriate name for the standard and its vernacular.

In the second part, informants listened to 25 single vernacular words produced by all speakers and presented twice. After each presentation, informants had to indicate either the words' valence or its perceived frequency in their vernacular on a 5-point scale (from 0, not at all frequent/ extremely negative, to 4 highly frequent/ extremely positive). ((302 words))

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<sup>10</sup> Variation is due to participants not completing all parts of the norming study