Implicit-explicit attitudinal discrepancy and the investigation of language attitude change in progress

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Abstract

Socio-psychological research has frequently reported low correlations between explicit and implicit attitude measures for a range of socially sensitive topics. There is mounting evidence that implicit and explicit evaluations do not change at the same rate and thus any implicit-explicit attitudinal discrepancy (IED) may indicate attitude change in progress. However, researchers have yet to investigate whether differences between implicit and explicit attitudes towards language use can determine the direction of any language attitude change underway; somewhat surprising given recent evidence indicating that community language attitude change can result in micro-level language change over time. The present study employed an Implicit Association Test (IAT) and self-report attitude scale to measure the relationship between 90 English nationals' implicit and explicit ratings of Northern English and Southern English speech in England. Multivariate analysis demonstrated significant implicit-explicit attitudinal discrepancy, providing evidence of language attitude change in progress, led by younger females, with explicit attitudes changing more rapidly towards a greater tolerance of the English spoken in the north of England. The paper discusses the potential contribution of investigating implicit and explicit language attitudes to help account for the persistence of deeply embedded linguistic prejudice, as well as to measure language attitude change in progress.

Key words: Language Attitudes, Implicit Association Test, Implicit vs. Explicit Attitudes, Folk Linguistics, Attitude Change, Sociolinguistics

Introduction

Implicit associations and explicit attitudes

There exists a general consensus amongst social psychologists that a great deal of social cognition occurs outwith an individual's conscious awareness or control (Greenwald 1992; Karpinski and Steinman 2006). There is also a growing body of empirical research indicating that an individual's attitudes can operate at both explicit and implicit levels, where evaluations which are based on deliberate processes and are fully reportable are differentiated from evaluations which are not available to introspection and are uncontrollable (see Devos 2008; Rydell and McConnell 2006). To account for these dual implicit and explicit attitude constructs, psychologists have recently developed innovative implicit attitude measures in addition to traditional self-report instruments. For many researchers, these newer implicit attitude measures are perceived to be more robust when compared to explicit attitude measures, and especially since the latter can involve issues of social desirability bias (Hofmann et al. 2005).

Arguably, the most widely used instrument to study implicit attitudes is the Implicit Association Test (IAT), developed by Greenwald, McGhee, and Schwartz (1998). The IAT aims to examine the relative strength of associations of two dichotomous attitude objects (e.g., Caucasians-African Americans) with two opposing evaluative dimensions (e.g., positive-negative) by comparing participants' response latencies (i.e., reaction times) for each. The theory which underlies the IAT is that more rapid categorisations of, for example, Caucasians with positive traits and African Americans with negative traits (or vice-versa), reflect strong evaluative associations in memory and unconscious prejudices (Rudman et al. 1999) (i.e., more positive implicit attitudes towards Caucasians than African Americans). It is worth noting that whilst it is possible for participants to override their implicit prejudices in their responses, it is believed that this cannot be achieved without considerable time or effort, thus increasing participant reaction times (Quillian 2008). Researchers have employed the IAT to measure implicit attitudes in a large number of domains, including towards different genders, nationalities, sexual orientations, religions and ethnic groups (Fiske and Taylor 2008). These researchers have generally found the instrument to have very good predictive validity, especially regarding the measurement of prejudicial attitudes towards specific social groups, and found to correlate highly with individual behaviour (see Greenwald et al. 2009). With regards to evaluations of racial groups, there is also evidence of particularly strong correlations between IAT scores and activity in the amygdala (the almond-shaped structure located in the medial temporal lobe of the brain thought to be involved in assessing the *emotional* value of external stimuli) (Phelps et al. 2000). Implicit evaluations are thus increasingly categorised in affective terms by researchers (see Tucker-Smith and Nosek 2011; Spence and Townsend 2008) (see also below).

A number of studies have investigated the relationship between explicit and implicit attitudes. These studies have examined evaluations of a range of attitudinal objects and the results suggest relatively low correlations between explicit and implicit measures, including the IAT, and especially for socially sensitive topics such as minority group prejudice (for a meta-analysis see Hofmann et al. 2005). The generally low correlations found between these explicit and implicit measures point to the existence of implicit and explicit attitudes as structurally distinct (Greenwald and Nosek 2009) and imply that individuals can hold different implicit and explicit attitudes about an attitude object (Rydell and McConnell 2006; Wilson, Lindsey, and Schooler 2000). From this perspective, implicit attitude measures are thus better able to tap into more deeply embedded evaluations, activated from memory when the individual is exposed to the stimulus in question. In contrast, it is felt that explicit attitude

measures can assess more recently acquired evaluations and measure controlled responses influenced by social desirability bias (Hofmann et al. 2005).

The investigation of implicit as well as explicit attitudes can also help researchers investigate attitude change. This is especially the case because consistent implicit-explicit attitudes are considered more stable than inconsistent evaluations (Gregg, Siebt, and Banaji 2006; Karpen, Jia, and Rydell 2012). Specifically, implicit attitudes are thought to be acquired through the individual's long-term socialisation experience and, hence, are considered to be relatively resistant to change when compared to more recently learnt, less stable explicit evaluations (Brinol, Petty, and McCaslin 2009; Gawronski and Bodenhausen 2006). Since there is mounting evidence that implicit and explicit evaluations do not change at the same rate, with more rapidly learnt explicit attitudes changing at a faster pace than more slowly acquired implicit attitudes, any implicit-explicit attitudinal discrepancy (IED) can thus be an indication of attitude change in progress at a given point in time (Karpen et al. 2012), with the latter indicating the direction of any change underway, i.e., towards greater or lesser positivity towards the attitude object under consideration (Gawronski and Strack 2004; Gregg et al. 2006; Petty et al. 2006; Wilson et al. 2000). For this reason, most manipulations of attitude change in empirical studies were found to influence explicit rather than implicit evaluations (Gawronski et al. 2017; Gregg et al. 2006) (though for evidence to the contrary see Gawronski and LeBel 2008).

Language attitudes

There is a large body of research specifically investigating attitudes towards linguistic variation in a range of different languages and in a plethora of contexts. The great majority of this research has examined individuals' explicit language attitudes, often employing 'indirect instruments' such as the matched-guise technique (MGT) and verbal-guise technique (VGT) (see Garrett 2010 for an overview). A high degree of consistency has been found from the data collected in these studies. More specifically, it has been widely demonstrated that speakers of standard language varieties are usually rated more positively in terms of status when compared to speakers of forms deemed non-standard (see Dragojevic and Giles 2014; Edwards 2011; McKenzie, Kitikanan, and Boriboon 2016). In the case of England, for instance, researchers have demonstrated that English nationals, historically, tend to evaluate standard varieties associated with English speakers from the south of England, such as Received Pronunciation (RP) and Standard Southern British English (SSBE), more favourably in comparison with those speakers of linguistic forms of English perceived to be non-standard and, most particularly, with regards to the English of speakers from urban areas in the north of England, e.g., in Liverpool and Newcastle (Garrett 2010; Giles 1970). In contrast, these non-standard speech varieties are frequently rated more positively in terms of solidarity/social attractiveness than standard speech forms (e.g., Coupland and Bishop 2007; McKenzie 2010). Interestingly, there is some recent evidence that this distinction between evaluations of standard and non-standard English may be shifting amongst younger English nationals, towards a greater tolerance, if not outright approval, of urban forms of spoken English (Coupland and Bishop 2007; Mugglestone 2003). It is not known whether this tolerance extends to perceptions of the English spoken in northern England more widely.

Such public attitudes towards linguistic diversity, both within and outwith England, clearly index stereotypes regarding specific speakers and their social group membership. Evaluations of linguistic diversity are thus of interest to (socio)linguists since language attitudes can transform linguistic difference into linguistic deficit (or advantage) for the speakers in question (Edwards 2011). Indeed, the results of a range of prior explicit language attitude studies conducted over the last forty years, and frequently employing the MGT and VGT, have repeatedly indicated that the language variety employed by a given speaker can

have wide-ranging social implications, including influencing job hiring and career progression, teachers' perceptions of their students' educational abilities and the perceived persuasiveness and credibility of the message itself (e.g., Powesland and Giles 1975; Rakic, Steffens, and Mummendey 2011; Seligman, Tucker, and Lambert 1972).

Nevertheless, it is only very recently that researchers have attempted to measure individuals' implicit language attitudes. Some of these studies have utilised measures other than the IAT to examine the relationship between implicit and explicit language attitudes. McKenzie (2015), for example, employed an adapted verbal-guise instrument, involving the use of magnitude estimation techniques (Stevens 1971), to investigate the implicit evaluations of 194 UK-born university students, based in the north of England, of samples of Scottish Standard English and Tyneside English speech as well as forms of English spoken in Japan, China, India and Thailand. Using a more traditional self-report measure, the same participants' explicit attitudes towards linguistic variation more broadly were also examined. Data analysis confirmed that although explicit attitudes towards linguistic diversity were generally favourable, implicit evaluations of the varieties of English spoken in the UK were significantly more positive when compared to ratings for the Asian English speech forms presented. Nevertheless, McKenzie (2015) expressed concerns about the study's utilisation of an (adapted) verbal-guise instrument as a valid measure of linguistic attitudes below the level of individual consciousness. He thus called for future equivalent language attitude research to incorporate more sophisticated implicit attitude measures into the study design and, more specifically, proposed the adaptation of instruments recently developed within the field of social cognition, such as the IAT, as potentially more robust measures of implicit evaluations of linguistic stimuli. McKenzie and Gilmore (2017) replicated this study amongst 158 university students in Japan. In contrast to the UK study, the researchers found a clear convergence between the results gained by the implicit and explicit measures, with higher participant ratings on both measures for native English speech than Asian English speech, including Japanese English. McKenzie and Gilmore concluded that this convergence between explicit and implicit language attitudes reflected Japanese students' relatively stable attitudes, thought to be resistant to change, towards English diversity as well as implying a lack of social desirability bias in participants' explicit evaluations.

There also exists a limited amount of research investigating implicit as well as explicit language attitudes which have employed an Implicit Association Test. One of the first studies was undertaken by Todd and Pojanapunya (2009) amongst 295 Thai university students and investigated their implicit and explicit evaluations of native and non-native English-speaking teachers. Whilst the IAT results indicated no bias for either group of teachers, a clear preference for native English teachers was found when explicit attitudes were measured through a questionnaire. Babel (2010) also employed an IAT as part of a larger study, involving 42 New Zealand university students, to examine the potential role of pro-Australian or pro-New Zealand bias on the participants' degree of phonetic accommodation to an Australian speaker of English. Inferential analysis confirmed that, whilst all participants accommodated their speech to some extent, significantly greater levels of convergence towards the Australian speaker were found in the pro-Australia bias group when compared to the pro-New Zealand bias group. Pantos and Perkins (2012) conducted a study amongst 165 university students in the USA using an audio-IAT study, i.e., employing short speech samples, instead of labels, as stimuli, to investigate the alignment of US-accented English and Korean-accented English with target words they assumed to be the most meaningful and representative of good-bad attributes for the participants. Analysis of the IAT data demonstrated a pro-US English bias. Conversely, a pro-Korean English bias was found on an explicit self-report questionnaire. Campbell-Kibler (2012) also employed auditory samples in an IAT, in this case to measure associations between two linguistic variables, (ING) and /ay/

monophthongisation, and Northern US-Southern US States, amongst 24 participants from Ohio, USA. For both linguistic variables, participants were found to make strong implicit associations between some variants and Northern US States and equally strong implicit associations between other variants and Southern US States.

In short, the limited number of prior studies concentrating specifically upon implicit as well as explicit evaluations of language diversity have found some evidence that implicit and explicit language attitudes can diverge. As discussed above, implicit-explicit attitude discrepancies have also been demonstrated in studies investigating a range of other attitudinal domains, and some of these researchers have also found evidence that discrepant explicit and implicit attitudes uncovered are indicative of attitude change in progress.

However, to date, there do not seem to be any examples of *language* attitude studies specifically investigating the extent to which any dissociations found between implicit and explicit attitudes towards language use can determine the direction of any changes in language attitudes. Studies of this type seem especially worthwhile given a growing realisation amongst linguists that any language change in progress needs to be considered in relation to any ongoing social (-psychological) changes within the community in question (rather than assuming a stable socially structured community for reasons of methodological and theoretical convenience). This perspective echoes Coupland's (2016) call for researchers to widen the (currently restrictive) focus of the study of language change to include the investigation of changes over time in 'language-society relations' more broadly, a concept he refers to as *sociolinguistic change*, and where language attitudes and language ideologies are viewed as key dimensions (see also Kristiansen 2011 regarding the need for studies examining social values and evaluations as a potential driving-force in language change as well as language use within the speech community under consideration). Interestingly, there exists recent evidence that changes in community language attitudes and language ideologies can indeed result in micro-level language change over time, albeit in complex ways which are not yet fully understood (e.g., Coupland 2014; Grondelaers and Kristiansen 2013; Kristiansen 2009; Sandøy 2013).

It is hoped the findings of empirical studies examining differences between implicit and explicit levels of attitudes towards language diversity can also help answer criticisms that many researchers investigating social aspects of linguistic variation have historically characterised social reasoning as a largely conscious process (Campbell-Kibler 2012). In turn, it is felt that the results of such studies could help enrich research in the language sciences more broadly, where there remains a central focus upon the ways in which social information and, by extension, social change, are indexed and practised through the use of specific linguistic features at different stages of diffusion within the community under consideration. When incorporating implicit as well as explicit measures within the design of language attitude studies, it would thus seem of considerable value to examine social differentiation within the population examined, and especially age differentiation. This is particularly the case since any differences found between the ratings of different age groups, and interactions between age and, for example, participant gender or social class ratings, whether uncovered in real time or in apparent time data (see Bailey et al. 1991), can indicate both the direction as well as the extent to which specific sections of the community in question may be leading attitude change at explicit and/or implicit levels.

In the specific case of England, there do not appear to be any implicit language attitude studies using the IAT. This is perhaps somewhat remarkable given the aforementioned volume of prior research conducted utilising other instruments to investigate social evaluations of language varieties in both the north and south of England as well as the broad acceptance of the importance of examining implicit as well as explicit attitudes within

social psychology more widely and, increasingly, the social psychology of language and sociolinguistics (Kristiansen 2015).

The discussion above has demonstrated a clear case for further investigation of implicit language attitudes through the employment of the Implicit Association Test. Specifically, the present study examines implicit attitudes towards Northern English and Southern English speech: arguably, for English nationals, the most dominant and socially meaningful sociolinguistic distinction made between regional varieties of English in England (see Trudgill 1999; Wales 2006). The study also attempts to measure explicit attitudes towards both forms of English by means of a self-report instrument, and to determine the extent of the relationship, if any, between these implicit and explicit evaluations. In turn, given the paucity of previous research investigating language attitude change, the study goes beyond earlier equivalent studies by examining whether, and if so to what extent, any implicit-explicit discrepancies found in participants' attitudes towards different linguistic varieties are indicative of language attitude change in progress. For this reason, as discussed above, the present study also examines the effect of age and gender differences upon implicit and explicit evaluations of Northern English and Southern English speech in England.

Method

Participants

Ninety English nationals (i.e., born and raised in England), who all self-identified as Northern English, took part in the study for a small monetary reward (the responses of 18 participants who self-identified as Southern English, Midland English or Anglo-British were not included). The sample was composed of 43 males and 47 females, from the ages of 18 to 67 (M=39.39 years, SD=12.56). At the time of the data collection, all participants were resident in Newcastle upon Tyne, situated in the north-east of England. The participants were recruited through advertisements placed in and around the city and through word of mouth. The sample was thus composed of individuals from a wide range of occupations as well as different levels of educational backgrounds.

Materials

Implicit Association Test (IAT)

The IAT, employing labels rather than auditory samples (see also below), was constructed on Open Sesame software using Python programming language. To maximise the validity of the instrument, a great deal of care was taken in the selection of these labels. For example, the IAT utilised 'Northern English speech' and 'Southern English speech' as *attitude object dimensions*. This decision was taken because, although shorter labels (e.g., Northern English-Southern English) may have reduced the cognitive load required to complete the task, it was considered the inclusion of 'speech' helped ensure the measurement of participants' implicit *language* attitudes. The task employed *five representative areas* of use for each dimension (Northern English speech: *Newcastle*; *Liverpool*; *Manchester*; *Leeds*; and *Sheffield*. Southern English speech: *Cambridge; Oxford; London; Southampton; and Brighton*).

The *evaluative dimensions*, labelled positive and negative, were composed of *five evaluative target traits* and their bipolar opposites (positive: *correct*; *good*; *educated*; *clear*; and *high status*, negative: *not correct*; *bad*; *not educated*; *not clear*; and *low status*). Following McKenzie (2015), in the case of the negative evaluative traits, where relevant and in contrast to typical practice, it was decided to employ the binary opposite (contradictory) 'not', rather than less binary affixed negations ('un'/'in'), to help control for possible multiple interpretations of trait meanings (for a detailed discussion see Zimmer 1964). The target words included for both the representative areas and the evaluative dimensions were

selected by means of a pilot study, conducted amongst 20 comparable informants, all resident in the Newcastle area, in an attempt to ensure the traits, as well as the representative areas, were as meaningful as possible for the participants in the main study (Garrett 2010; Jowell et al. 2007; McKenzie 2008a). The words consisted of these individuals' most frequent identifications of areas where forms of Northern English and Southern English speech are used as well as the most frequently provided descriptions of the English spoken in Northern England and Southern England. In the case of the latter, it is worth noting that the traits provided in the pilot study, with the exception of *good-bad*, seem to relate to the status/competence dimension utilised in MGT/VGT studies.

In accordance with previous IAT research, throughout the practice and experimental blocks (see Appendix A), the labels (Northern English speech-Southern English speech and positive-negative) were positioned on either the left or the right of the screen according to the particular task and the word stimuli were presented individually in the middle of the screen in random sequence.

The IAT was composed of five blocks of stimuli (Appendix A). Block one was a practice stage where participants categorised the evaluative words as either positive or negative (20 trials). Blocks two and four were also practice stages. In these blocks participants classified the ten English cities into areas where either Northern English speech or Southern English speech could be heard (both 20 trials). Blocks two and four differed only in that the screen position for the attitude object dimensions were reversed, i.e., Northern English speech was positioned on the left of the screen in block two and on the right of the screen in block four. Blocks three and five together constituted the experimental stages in which both the attitude object and evaluative dimensions were paired and participants categorised the evaluative traits and the cities presented on the screen (both 40 trials) (Appendix B). Again, blocks three and five were identical except for the reversal of the screen positions for 'positive' and 'negative', i.e., Positive-Northern English speech positioned on the left and Negative-Southern English speech on the right (block three) and, in contrast, Negative-Northern English speech positioned on the left and Positive-Southern English speech on the right (block five).

Self-report measures

Following Coupland and Bishop (2007), explicit language attitudes were measured through participant responses to two related statements: 'I like to hear varieties of English spoken in the *north of England*'; and 'I like to hear varieties of English spoken in the *south of England*'. In line with prior social psychology research, 'like' was selected as a general evaluative term since it does not measure affective states (such as cold-warm) or cognitive characteristics (such as perfect-imperfect) of the speech (for a detailed discussion of affective, cognitive and general evaluative items see Crites, Fabrigar, and Petty 1994; Rydell and McConnell 2006; Verplanken, Hofstee, and Janssen 1998). It was considered that the additional inclusion of (like) 'to hear' helped ensure the measurement of general attitudinal properties. Participants provided their ratings on an 80-point scale, with scores ranging from 1 (strongly no) to 80 (strongly yes) (see also McKenzie 2015). In this way, high scores indicated the most positive explicit attitudes towards the varieties in question.

Procedure

After the completion of an informed consent form, each participant was seated at an individual computer to undertake the IAT task, consisting of the aforementioned five separate blocks. Each block was preceded by a specific set of instructions regarding the particular categorisation task (Appendix C). Participants responded by pressing the 'z' key for left categorisations or the '/' key for right categorisations of the words appearing in the centre of the screen. Participants subsequently completed the two pen and paper self-report tasks

measuring explicit attitudes towards varieties of Northern English speech and varieties of Southern English speech. Finally, participants were requested to provide demographic information.

Results

Implicit associations

To control for anticipatory responses as well as momentary inattentiveness amongst participants (Greenwald, McGhee, and Schwartz 1998; Rudman and Kilianski 2000), the initial stage of data analysis involved the inspection and potential recoding of any response latencies of less than 300ms and greater than 3,000ms. There were no cases.

Subsequently, the participants' response latencies provided in the two stimulus-pairing conditions (test blocks 3 and 5) were transformed into a *D* score, an algorithm representing a fine-grained effect size measurement developed by Greenwald, Nosek, and Banaji (2003). In the case of the present study, this was calculated by subtracting the mean latency score for the positive Northern English condition (Block 5) (M=1295.19ms, SD=331.73) from the positive Southern English condition score (Block 3) (M=1151.28ms, SD=431.11) and subsequently dividing this by the pooled standard deviation of the response latencies across both conditions (known as the inclusive standard deviation) (699.54). *D* scores range between -2.0 and 2.0, where 0.0 represents no difference in response latencies between conditions. In the present study, a positive *D* score indicates a pro-Southern English speech bias (ProSouthEng) whereas a negative *D* score indicates a pro-Northern English speech bias (ProNorthEng).

The analysis demonstrated an *implicit bias in favour of Southern English speech* (ProSouthEng) (where a lower response latency represents the most favourable implicit association): D=0.21, which indicates a small to moderate *D* score effect size (see Nosek 2007 for a comparison of IAT *D* scores for a range of attitude objects). A follow-up one-sample *t*-test demonstrated the difference between the *D* score across participants was significantly greater than zero: $t(89)=4.27$, $p< 0.001$ (p=0.000).

Explicit attitudes

Participant ratings on the self-report scale of 80 points were broadly positive for both Northern English speech (M=68.17, SD=10.86) and Southern English speech (M=50.82, SD=20.51). Hence, in contrast to the IAT results, participants expressed an *explicit preference for varieties of English spoken in the north of England* (mean explicit difference score=17.35, SD=21.12). A follow-up one sample *t*-test again demonstrated that the difference between the self-report ratings for Northern English and Southern English speech across participants was significantly greater than zero: $t(89)=7.80$, $p<0.001$ (p=0.000).

Explicit-implicit attitude correlations

Perhaps unsurprisingly, correlation analysis demonstrated a generally weak, and non-significant, relationship between *D*-IAT scores and the explicit difference scores (i.e., Northern English speech minus Southern English speech self-report ratings) (r=-0.134, $p>0.05$, p=0.11). This finding is consistent with the generally weak implicit-explicit relations demonstrated in previous research examining attitudes towards a range of (non-language related) socially sensitive topics and which have employed the IAT (see Greenwald et al., 2009; Nosek et al., 2007). Hence, paralleling the findings gained from this previous research across a range of content domains, the results of the present study suggest that IAT measures and self-report measures are also able to capture distinct levels of *linguistic* attitudes which are potentially conflicting.

The influence of age

To test for any potential apparent time age effects on implicit and explicit evaluations of Southern English speech and Northern English speech, participants were classified into three distinct age groups through visual binning. The groups were classified as young (18-34 years) (n=30), middle-aged (35-49 years) (n=33) and older (50-68 years) (n=27).

Implicit attitudes
Although younger participants were most positive overall, two-way ANOVA analysis (Bonferroni adjusted) indicated no significant effect for age on the overall D score: $F(2, 84)=1.64$, $p>0.05$ ($p=0.20$), $\eta^2=0.038$.

Explicit attitudes
Further two-way ANOVA analysis (Bonferroni adjusted) of the explicit difference score across participants indicated that the younger age group were particularly positive (M=20.93, SD=17.30) towards Northern English speech when compared to the middle-aged group (M=15.59, SD=16.95) and the older age group (M=15.51, SD=28.59). Whilst there is some evidence of more favourable explicit evaluations amongst younger participants, the effect for age on the self-report ratings of Northern English speech was not significant: $F(1, 84)=0.90$, $p>0.05$ ($p=0.411$), $\eta^2=0.021$.

The influence of gender

Two-way ANOVA analysis was also conducted to examine the potential effect of gender, male (n=43) and female (n=47), upon implicit and explicit attitudes.

Implicit attitudes
No significant effect for gender was found on the overall D score: $F(1, 84)=0.016$, $p>0.05$ ($p=0.90$), $\eta^2=0.00$.

Explicit attitudes
Likewise, further two-way ANOVA analysis indicated no significant effect for gender on the explicit difference ratings for Northern English and Southern English speech across participants: $F(1, 84)=0.353$, $p>0.05$ ($p=0.554$), $\eta^2=0.004$.

Interaction effects

The above two-way between groups ANOVAs (with Bonferroni adjustments) were also employed to test for potential interactions between gender (X 2) and age (X 3) for the implicit D-IAT score as well as the explicit difference score for Northern English and Southern English speech. Analysis revealed a significant interaction effect for the *explicit difference score* only: $F(2, 84)=4.135$, $p<0.05$ ($p=0.022$), $\eta^2= 0.08$, with younger females (M=27.09, SD=19.03) rating Northern English significantly more positively than Southern English speech on the self-report scale when compared to older males (M=9.00, SD=21.49). This result is interesting given that no main effects for gender or age were found.

Wider discussion and conclusion

The primary focus of the present research was to examine implicit and explicit attitudes towards Northern English speech and Southern English speech in England. The study represents the first empirical investigation employing the Implicit Association Test, in addition to self-report measures, to assess the language attitudes of English nationals. Multivariate analysis of the data collected demonstrated that, when questioned directly, Newcastle-based English nationals were found to be significantly more positive towards Northern English speech. This result is likely attributable to a conscious expression of solidarity with fellow speakers of English perceived to be from the north of the country. This

explanation is supported by the findings of prior language attitude research in the UK using self-report and/or indirect measures, where similar expressions of ingroup loyalty were found amongst participants from Newcastle upon Tyne (McKenzie 2015) and amongst Scottish, Welsh and Northern Irish nationals (Coupland and Bishop 2007), on status as well as social attractiveness dimensions, towards (speakers of) 'local' forms of English.

Conversely, analysis of the participants' mean response latencies in the IAT study revealed a significant implicit bias in favour of Southern English speech, thus, by comparison, pointing to relatively stable, and deeply embedded, negative associations with (speakers of) forms of English spoken in the north of England. This finding may seem surprising considering the sample was composed of individuals resident in Newcastle upon Tyne, who all self-identified as Northern English, and whom were themselves likely to employ Northern English speech forms. Nevertheless, perhaps positive implicit associations with Southern English speech are less difficult to comprehend when we take into account the historical political domination and economic power of the south of England within the UK more widely, and the resultant elevation of particular southern English speech varieties, in terms of prestige, within and outwith the UK-context alike (e.g., Cameron 2012; McKenzie 2008b). Most particularly, despite the efforts of (socio)linguists, there exists a long, and largely uncontested, norm-enforcing tradition within the British media of the promotion and elevation of Received Pronunciation and, more recently, Standard Southern British English (SSBE), as indexical of 'standard English' speech par excellence (see Milroy and Milroy 2012; Mugglestone 2003); that is to say, the idealisation of these speech varieties as elite language.

Given the significant differences demonstrated between participants' ratings on the two attitude instruments, perhaps unsurprisingly, the present study found only a weak correlation between explicit self-report and implicit IAT attitudes towards Northern English speech and Southern English speech. This finding shows that English nationals' evaluations of linguistic variation are multifaceted, and suggests their language attitudes operate at unconscious as well as conscious levels of awareness (Rudman et al. 1999), i.e., there exist dual implicit and explicit attitudes towards language diversity. This result is consistent with the findings from the limited amount of previous IAT-based studies investigating attitudes towards linguistic variation in other contexts (Pantos and Perkins 2012; Todd and Pojanapunya 2009), as well as the results from the extensive body of research examining implicit and explicit evaluations of a wider range of non-language related attitudinal objects (e.g., Hofmann et al. 2005).

Evidence for the dual processing of structurally distinct language attitudes in the present study supports the future utilisation of implicit as well as explicit instruments to examine language attitude change. More specifically, as discussed above, the pro-Southern English speech bias uncovered in the IAT study is a likely reflection of more deeply held, non-verbalisable implicit attitudes, formed through repeated exposure and which change at a relatively slow rate. However, participants' overall preference for Northern English speech found in the self-report study is considered to constitute more recently formed explicit attitudes which change at a more rapid rate. The discrepancy found between English nationals' implicit and explicit evaluations of Northern English and Southern English speech thus points to attitude change in progress within apparent time data, with explicit attitudes changing more rapidly in the direction of a greater tolerance of, and greater favourability towards, (speakers of) varieties of English spoken in the north of England. Whilst such an interpretation is controversial, it is notable that evidence of implicit-explicit evaluation divergence as an indicator of attitude change in progress has also been found in relation to other attitudinal domains, most notably in a series of studies examining white US nationals'

conscious and unconscious ratings of African-Americans (for a detailed discussion see Wilson et al. 2000).

The age differences found in the self-report study, where younger participants expressed a greater (though not significant) preference for Northern English speech also points to early stage attitude change in progress in the direction of more positive attitudes to forms of English spoken in the north of England. Relatedly, the significant interaction effect demonstrated between age and gender in participants' on the explicit difference ratings likewise offers intriguing evidence that it may be younger females who are leading this attitude change in progress towards a greater tolerance of Northern English speech.

As discussed above, understanding language attitude change seems an important component of the ideological processes which contribute to (socio)linguistic change at both individual and community-wide levels. The evidence of language attitude changes in progress obtained through analysis of the apparent time data in the present study, and indicated by implicit-explicit attitudinal discrepancy (IED) as well as the age-gender interaction in the self-report instrument, underlines the need for further in-depth longitudinal language attitude studies to be conducted, examining the implicit and explicit evaluations of Northern English and Southern English speech. The findings obtained from such real-time studies can make an important contribution to building up a more precise picture of the *rate* as well as the direction of any unconscious as well as conscious attitude change in progress towards forms of English spoken in the north and the south of England and elsewhere. As Kristiansen (2015) notes, future equivalent studies measuring implicit-explicit language attitude relations, undertaken in conjunction with research examining patterns of language use, seem especially useful to help uncover the driving forces behind any (socio)linguistic change in progress within the particular speech community in question. Language attitude change in progress is not the only potential interpretation of data analysis, however, and the possibility remains that the IED uncovered in the present study could represent differences between status and solidarity/social attractiveness ratings or, given the discussion above, it may be both implicit and explicit measures utilised tap into affective language attitude components (see Tucker-Smith and Nosek 2011). In order to discount these possibilities, and to validate (or not) the study findings, (language) attitude researchers could employ different sets of attributes, and different explicit and implicit attitude measures. To control for potential order effects in the presentation of stimuli, future equivalent research should also aim to counterbalance the categorisation process across participants.

A further potential limitation of the IAT section of the study relates to the presentation of the labels 'Northern English speech' and 'Southern English speech' for evaluation rather than actual speech samples. Although the use of labels is the norm in IAT research more broadly, of the few existing IAT studies measuring implicit attitudes towards linguistic variation, Campbell-Kibler (2012), for instance, included auditory samples. In the case of the present study, it remains unclear whether the inclusion of excerpts of Northern English and Southern English speech, as opposed to labels, including representative cities where these broad varieties are spoken (and the potential associations which the cities may activate), would have yielded equivalent results. Future research might explore this through the careful selection of natural, spontaneous speech samples. Nevertheless, there exists an underlying issue in relation to the extent to which it is possible, or desirable, to present for evaluation the speech of one individual, or indeed a narrow range of individuals, from the north of England and the south of England as representative of the English spoken within these large geographical areas. This is especially the case considering the substantial regional variation, and resultant phonological/phonetic, morpho-syntactic and lexical differentiation found between the English of speakers within both the north and the south of England. Similarly, as Tagliamonte (2013) notes, since the dividing line between the north and the south of England,

and between the areas where Northern English and Southern English are spoken is largely a culturally salient construct rather than a linguistic reality, there is no general consensus amongst dialectologists, or indeed the wider population in England, regarding the precise Northern English-Southern English linguistic boundary. Given this lack of a clear-cut boundary, as well as the substantial number of linguistic features which, together, can constitute the English spoken in the north and the south of England, the labelling of a speaker as 'Northern English' or 'Southern English' seems less a matter of discreteness (i.e., either-or) and more an issue of degree (i.e., more or less) on a linguistic continuum (see Plichta and Preston 2005; McKenzie 2013 regarding equivalent Northern US-Southern US English and native-non-native speaker linguistic continua respectively).

Relatedly, since the IAT, by its very design, allows for the inclusion of only very short speech excerpts, there is also an issue regarding which specific linguistic feature(s) to employ as stimulus as representative of Northern English and Southern English speech forms. Wells (1982), Trudgill (1999) and Hickey (2015), for example, each list a number of phonological differences between the English spoken in the north and the south of England, including vowel lengthening (or not) in the BATH lexical set as well as the FOOT-STRUT split (perhaps echoing the frequent portrayal of 'flat vowels' as indexical of Northern English within the media and popular discourse in England).

Hence, to validate (or not) the findings obtained in the present study, and to build up a more detailed picture of implicit attitudes towards linguistic variation more generally, there seems a requirement for language attitude researchers to investigate implicit language attitudes across diverse speech communities as well as to incorporate other implicit attitude instruments into the design of their studies. Potential additional implicit attitude measures include the affect misattribution procedure (AMP) (e.g., Payne 2009) and the bona-fide pipeline (e.g., Olsen and Fazio 2009) as well as modifications on the IAT such as the Single Category Implicit Association Test (SC-IAT) (Karpinski and Steinman 2006) (see also Speelman et al. 2013).

Nevertheless, although overt prejudice has become less socially acceptable in England and many other countries over recent years, including overt discrimination against speakers of minority languages or language varieties deemed as non-standard, the findings of the present study indicate the value of investigating implicit as well as explicit attitudes towards linguistic variation, and the uncovering of implicit-explicit attitudinal discrepancies (IED). It is felt that further language attitude research of this nature, conducted by researchers interested in the social meaning of language diversity, may help explain why subtler, but nonetheless deeply embedded, biases against particular communities of speakers persist.

References

Babel, M. 2010. "Dialect Divergence and Convergence in New Zealand English." *Language in Society* 39 (4): 437-456. doi: 10.1017/S0047404510000400.

Bailey, G., T. Winkle, J. Tillery, and L. Sand. 1991. "The Apparent Time Construct." *Language Variation and Change* 3 (3): 241-264. doi: 10.1017/S0954394500000569.

Brinol, P., R. E. Petty, and M. J. McCaslin. 2009. "Changing Attitudes on Implicit Versus Explicit Measures." In *Attitudes: Insights from The New Implicit Measures*, edited by R. E. Petty, R. H. Fazio and P. Brinol, 285-326. Hove: Psychology Press.

Cameron, D. 2012. *Verbal Hygiene.* 2nd ed. London: Routledge.

Campbell-Kibler, K. 2012. "The Implicit Association Test and Sociolinguistic Meaning." *Lingua* 122: 753-763. doi: 10.1016/j.lingua.2012.01.002.

Coupland, N. 2014. Sociolinguistic Change, Vernacularization and Broadcast British Media. In *Mediatization and Sociolinguistic Change*, edited by J. Androutsopoulos, 67-98. Berlin: Mouton de Gruyter.

Coupland, N. 2016. Five Ms for Sociolinguistic Change. In *Sociolinguistics: Theoretical Debates*, edited by N. Coupland, 433-455. Cambridge: Cambridge University Press.
Coupland, N., and H. Bishop. 2007. "Ideologised Values for British Accents." *Journal of Sociolinguistics* 11 (1): 74-93. doi: 10.1111/j.1467-9841.2007.00311.x.
Crites, S. L., L. R. Fabrigar, and R. E. Petty. 1994. "Measuring the Affective and Cognitive Properties of Attitudes: Conceptual and Methodological Issues." *Personality and Social Psychology Bulletin* 20 (6): 619-634. doi: 10.1177/0146167294206001.
Devos, T. (2008). "Implicit Attitudes 101: Theoretical and Empirical Insights." In *Attitudes and Attitude Change*, edited by W. D. Crano and R. Prislin, 61-86. Hove: Psychology Press.
Dragojevic, M., and H. Giles. 2014. "The Reference Frame Effect: An Intergroup Perspective on Language Attitudes." *Human Communication Research* 40 (1): 91-11. doi: 10.1111/hcre.12017.
Edwards, J. 2011. *Challenges in the Social Life of Language*. Basingstoke: Palgrave Macmillan.
Fiske, S., and S. E. Taylor. 2008. *Social Cognition: From Brains to Culture*. New York: McGraw Hill.
Garrett, P. 2010. *Attitudes to Language*. Cambridge: Cambridge University Press.
Gawronski, B., and G. V. Bodenhausen. 2006. "Associative and Propositional Processes in Evaluation: An Integrative Review of Implicit and Explicit Attitude Change." *Psychological Bulletin* 132 (5): 692-731. doi: 10.1037/0033-2909.132.5.692.
Gawronski, B., and E. P. LeBel. 2008. "Understanding Patterns of Attitude Change: When Implicit Measures Show Change but Explicit Measures do Not". *Journal of Experimental Psychology* 44 (5): 1355-1361. doi: 10.1016/j.jesp.2008.04.005.
Gawronski, B., M. Morrison, C. E. Ellis, and S. Galdi. 2017. "Temporal Stability of Implicit and Explicit Measures: A Longitudinal Analysis." *Personality and Social Psychology Bulletin* 43 (3): 300-312. doi: 10.1177/0146167216684.
Gawronski, B., and F. Strack. 2004. "On the Propositional Nature of Cognitive Consistency: Dissonance Changes Explicit, but not Implicit Attitudes." *Journal of Experimental Social Psychology* 40 (4): 535-542. doi: 10.1016/j.jesp.2003.10.005.
Giles, H. 1970. "Evaluative Reactions to Accents." *Educational Review* 22 (3): 211-227. doi: 10.1080/0013191700220301.
Greenwald, A. G. 1992. 'New look 3: Unconscious Cognition Reclaimed.' *American Psychologist* 47 (6): 776-779. doi: 10.1037//0003-066X.47.6.766.
Greenwald, A. G., D. E. McGhee, and J. L. K. Schwartz. 1998. "Measuring Individual Differences in Implicit Cognition: The Implicit Association Test." *Journal of Personality and Social Psychology* 74 (6): 1464-1480. doi: 10.1037/0022-3514.74.6.1464.
Greenwald, A. G., and B. A. Nosek. 2009. "Attitudinal Dissociation: What Does It Mean?" In *Attitudes: Insights from The New Implicit Measures*, edited by R. E. Petty, R. H. Fazio and P. Brinol, 65-82. Hove: Psychology Press
Greenwald, A. G., B. A. Nosek, and M. R. Banaji. 2003. "Understanding and Using the Implicit Association Test: I. An Improved Scoring Algorithm." *Journal of Personality and Social Psychology* 85 (2): 197-216. doi: 10.1037/0022-3514.85.2.197.
Greenwald, A. G., T. A. Poehlman, E. L. Uhlmann, and M. R. Banaji. 2009. "Understanding and Using the Implicit Association Test: III. Meta-Analysis of Predictive Validity." *Journal of Personality and Social Psychology* 97 (1): 17-41. doi: 10.1037/a0015575.
Gregg, A. P., B. Siebt, and M. R. Banaji. 2006. "Easier Done than Undone: Asymmetries in the Malleability of Implicit Preferences." *Journal of Personality and Social Psychology* 90 (1): 1-20. doi: 10.1037/0022-3514.90.1.1.

Grondelaers, S., and T. Kristiansen. 2013. “On the Need to Access Deep Evaluations when Searching for the Motor of Standard Language Change.” In *Language (De)standardisations in Late Modern Europe: Experimental Studies*, edited by T. Kristiansen and S. Grondelaers, 9-52. Oslo: Novus Press.

Hickey, R. 2015. “The North of England and Northern English.” In *Researching Northern English*, edited by R. Hickey, 1-26. Amsterdam: John Benjamins.

Hofmann, W., B. Gawronski, T. Gschwender, H. Le, and M. Schmitt. 2005. “A Meta-analysis on the Correlation between the Implicit Association Test and Explicit Self-Report Measures.” *Personality and Social Psychology Bulletin* 31 (10): 1369-1385. doi: 10.1177/0146167205275613.

Jowell, R., M. Kaese, R. Fitzgerald, and G. Eva. 2007. “The European Social Survey as a Measurement Model.” In *Measuring Attitudes Cross-Nationally*, edited by R. Jowell, C. Roberts, R. Fitzgerald and G. Eva, 1-32. London: Sage.

Karpen, S. C., L. Jia, and R. J. Rydell. 2012. “Discrepancies between Implicit and Explicit Attitude Measures as an Indicator of Attitude Strength.” *European Journal of Social Psychology* 42 (1): 24-29. doi: 10.1002/ejsp.849.

Karpinski, A., and R. B. Steinman. 2006. “The Single Category Implicit Association Test as a Measure of Implicit Social Cognition.” *Journal of Personality and Social Psychology* 91(1): 16-32. doi: 10.1037/0022-3514.91.1.16.

Kristiansen, T. 2009. “The Macro-Social Meanings of Late-modern Danish Accents.” *Acta Linguistica Hafniensia* 41(1): 167-192. doi: 10.1080/03740460903364219.

Kristiansen, T. 2011. “Attitudes, Ideology and Awareness.” In *The Sage Handbook of Sociolinguistics*, edited by R. Wodak, B. Johnstone and P. Kerswill, 265-278. London: Sage.

Kristiansen, T. 2015. “The Primary Relevance of Subconsciously Offered Attitudes.” In *Responses to Language Varieties*, edited by A. Prikhodkine and D. R. Preston, 87-116. Amsterdam: John Benjamins.

McKenzie, R. M. 2008a. “The Role of Variety Recognition in Japanese University Students’ Attitudes towards English Speech Varieties.” *Journal of Multilingual and Multicultural Development* 18(1): 63-88. doi: 10.2167/jmmd565.0.

McKenzie, R. M. 2008b. “Social Factors and Non-native Attitudes towards Varieties of Spoken English.” *International Journal of Applied Linguistics* 18(1): 63-88. doi: 10.1111/j.1473-4192.2008.00179.x.

McKenzie, R. M. 2010. *The Social Psychology of English as a Global Language*. Dordrecht, Netherlands: Springer.

McKenzie, R. M. 2013. “Changing Perceptions? A Variationist Sociolinguistic Perspective on Native Speaker Ideologies and Standard English in Japan.” In *Native-Speakerism in Japan*, edited by S. A. Houghton and D. J. Rivers, 231-242. Bristol: Multilingual Matters.

McKenzie, R. M. 2015. “UK University Students’ Folk Perceptions of Spoken Variation in English: The Role of Explicit and Implicit Attitudes.” *International Journal of the Sociology of Language* 236: 31-53. doi: 10.1515/ijsl-2015-0020.

McKenzie, R. M., and A. Gilmore. 2017. “‘The People who are out of Right English’: Japanese University Students’ Evaluations of English Language Diversity.” *International Journal of Applied Linguistics* 27 (1): 152-175. doi: 10.1111/ijal.12110.

McKenzie, R. M., P. Kitikanan and P. Boriboon. 2016. ‘The Competence and Warmth of Thai Students’ Attitudes towards Varieties of English: The Effect of Gender and Perceptions of L1 Diversity’. *Journal of Multilingual and Multicultural Development* 37 (6): 536-550. doi: 10.1080/01434632.2015.1083573.

Milroy, J., and L. Milroy. 2012. *Authority in Language*. 2nd ed. London: Routledge.

Mugglestone, L. 2003. *Talking Proper*. 2nd ed. Oxford: Oxford University Press.
Nosek, B. A. 2007. "Implicit-Explicit Relations." *Current Directions in Psychological Science* 16 (2): 65-69. doi: 10.1111/J.1467-8821.2007.00477.x.
Nosek, B. A., F. L. Smyth, J. J. Hansen, T. Devos, N. M. Lindner, K. A. Ranganath, C. T. Smith, K. Olsen, D. Chugh, A. G. Greenwald, and M. R. Banaji. 2007. "Pervasiveness and Correlates of Implicit Attitudes and Stereotypes." *European Review of Social Psychology* 18 (1): 36-88. doi: 10.1080/10463280701489053.
Olsen, M. A., and R. H. Fazio. 2009. "Implicit and Explicit Measures of Attitudes: The Perspective of the MODE Model." In *Attitudes: Insights from The New Implicit Measures*, edited by R. E. Petty, R. H. Fazio, and P. Brinol, 19-64. Hove: Psychology Press.
Pantos, A. J., and A. W. Perkins. 2012. "Measuring Implicit and Explicit Attitudes toward Foreign Accented Speech." *Journal of Language and Social Psychology* 32 (1): 3-20. doi: 10.1177/0261927X12463005.
Payne, B. K. 2009. "Attitude Misattribution: Implications for Attitude Measurement and the Implicit-explicit Relationship." In *Attitudes: Insights from The New Implicit Measures*, edited by R. E. Petty, R. H. Fazio and P. Brinol, 459-484. Hove: Psychology Press.
Petty, R. E., Z. L. Tormala, P. Brinol, and W. B. G Jarvis. 2006. "Implicit Ambivalence from Attitude Change: An Exploration of the PAST Model." *Journal of Personality and Social Psychology* 90 (1): 21-41. doi: 10.1037/022-3514.90.1.21.
Phelps, E. A., K. J. O'Connor, W. A. Cunningham, E. S. Funayama, C. Gatenby, J. C. Gore, and M. R. Banaji. 2000. "Performance on Indirect Measures of Race Evaluation Predicts Amygdala Activation." *Journal of Cognitive Neuroscience* 12 (5): 729-738. doi: 10.1162/089892900562552.
Plichta, B., and D. R. Preston. 2005. "The /ay/s have It: The Perception of /ay/ as a North-South Stereotype in US English." *Acta Linguistica Hafniensia* 37 (1): 243-285. doi: 10.1080/03740463.2005.10416086.
Powesland, P., and H. Giles. 1975. "Persuasiveness and Accent-message Incompatibility." *Human Relations* 28 (1): 85-93. doi: 10.1177/001872677502800105.
Quillian, L. 2008. "Does Unconscious Racism Exist?" *Social Psychology Quarterly* 71 (1): 6-11. doi: 10.1177/019027250807100103.
Rakic, T., M. C. Steffens, and A. Mummendey. 2011. "When it Matters How you Pronounce it: The Influence of Regional Accents on Job Interview Outcome." *British Journal of Social Psychology* 102 (4): 868-883. doi: 10.1111/j.2044-8295.2011.02051.x.
Rudman, L. A., A. G. Greenwald, D. S. Mellott, and J. L. K. Schwartz. 1999. "Measuring the Automatic Components of Prejudice: Flexibility and Generality of the Implicit Association Test." *Social Cognition* 17 (4): 437-465. doi: 10.1521/soco.1999.17.4.437.
Rudman, L. A., and S. E. Kilianski. 2000. "Implicit and Explicit Attitudes toward Female Authority." *Personality and Social Psychology Bulletin* 26 (11): 1315-1328. doi: 10.1177/0146167200263001.
Rydell, R. J., and A. R. McConnell. 2006. "Understanding Implicit and Explicit Attitude Change: A Systems Reasoning Analysis." *Journal of Personality and Social Psychology* 91 (6), 995-1008. doi: 10.1037/0022-3514.91.6.995.
Sandøy, H. 2013. "Driving Forces in Language Change – in the Norwegian perspective." In *Language (De)standardisations in Late Modern Europe: Experimental Studies,* edited by T. Kristiansen and S. Grondelaers, 125-152. Oslo: Novus Press.
Seligman, C., G. Tucker, and W. Lambert. 1972. "The Effect of Speech Style and Other

Attributes on Teachers' Attitudes towards Pupils." *Language in Society* 1 (1): 131-142. doi: 10.1017/S004740450000659X.
Speelman, D., A. Spruyt, L. Impe, and D. Geeraerts. 2013. "Language Attitudes Revisited: Auditory Affective Priming." *Journal of Pragmatics* 52: 83-92. doi: 10.1016/j.pragma.2012.12.016.
Spence, A., and E. Townsend. 2008. "Spontaneous Evaluations: Similarities and Differences between the Affect Heuristic and Implicit Attitudes." *Cognition and Emotion* 22 (1): 83-93. doi: 10.1080/02699930701298432.
Stevens, S. S. 1971. "Issues in Psychosocial Measurement." *Psychological Review* 78 (5): 426-450. doi: 10.1037/h0031324.
Tagliamonte, S. A. 2013. *Roots of English: Exploring the History of English Dialects*. Cambridge: Cambridge University Press.
Todd, R. W., and P. Pojanapunya. 2009. "Implicit Attitudes towards Native and Non-native Speaker Teachers." *System* 37 (1): 23-33. doi: 10.1016/j.system.2008.08.002.
Trudgill, P. 1999. *The Dialects of England*. 2nd ed. Oxford: Blackwell.
Tucker-Smith, C., and B. A. Nosek. 2011. "Affective Focus Increases the Concordance between Implicit and Explicit Attitudes." *Social Psychology* 42 (4): 300-313. doi: 10.1027/1864-9335/a000072.
Verplanken, B., G. Hofstee, and H. J. W. Janssen. 1998. "Accessibility of Affective versus Cognitive Components of Attitudes." *European Journal of Social Psychology* 28 (1): 22-35. doi: 10.1002/(SICI)1099-0992(199801/02)28:1<23::AID-EJSP843>3.0.CO;2-Z.
Wales, K. 2006. *Northern English*. Cambridge: Cambridge University Press.
Wells, J. C. 1982. *Accents of English 2: The British Isles*. Cambridge: Cambridge University Press.
Wilson, T. D., S. Lindsey, and T. Y. Schooler. 2000. "A Model of Dual Attitudes." *Psychological Review* 107 (1): 101-126. doi: 10.4135/9781446263037.
Zimmer, K. E. 1964. "Affixal Negation in English and Other Languages: An Investigation of Restricted Productivity." *Word* 20: Monograph 5.

Appendices

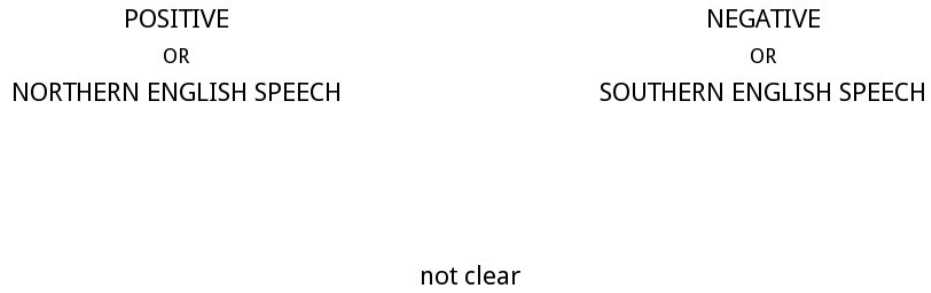
Appendix A. Implicit Association Test (IAT): Practice and test blocks

Block	No. of Trials	Function	Labels: left of screen (left key response)	Stimuli	Labels: right of screen (right key response)
1	20	Practice	Positive	* Evaluative Traits	Negative
2	20	Practice	Northern English speech	**Northern-Southern English cities	Southern English speech
3	40	Test	Positive + Northern English speech	Evaluative Traits + Northern-Southern English cities	Negative + Southern English speech
4	20	Practice	Southern English speech	Northern-Southern English cities	Northern English speech
5	40	Test	Negative + Northern English speech	Evaluative Traits + Northern-Southern English cities	Positive + Southern English speech

*Evaluative Dimensions:
Positive evaluative traits (correct, good, educated, clear, high status)
Negative evaluative traits (not correct, bad, not educated, not clear, low status)

**Attitude Object Dimensions:
Representative Northern English speech areas/cities (Newcastle, Liverpool, Manchester, Leeds, Sheffield)
Representative Southern English speech areas/cities (Cambridge, Oxford, London, Southampton, Brighton)

Appendix B. Screenshot: Example IAT categorisation task, test block 3



Appendix C. Screenshot: Participant instructions for IAT task, test block 3

Once again, you will be presented with a set of words to classify into groups.
However, now the four categories (POSITIVE, NEGATIVE, NORTHERN ENGLISH SPEECH, SOUTHERN ENGLISH SPEECH)
you saw separately, will be presented together.

POSITIVE	**correct, good, educated, clear, high status**
NEGATIVE	**not correct, bad, not educated, not clear, low status**
NORTHERN ENGLISH SPEECH	**Newcastle, Liverpool, Manchester, Sheffield, Leeds**
SOUTHERN ENGLISH SPEECH	**London, Cambridge, Oxford, Brighton, Southampton**

Please remember that each word will fall in ONLY ONE CATEGORY.
Four labels at the top will tell you which words go with each key.

Press Enter for further instructions.