Evaluations of accents can be used as a measure of prestige

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Abstract

Sociolinguistic studies have established that people make judgements about speakers based on accent. Standard and non-standard accents have differing levels of prestige and demonstrate variation across other attitudinal terms. Because prestige can increase the likelihood of information transmission, we explore variation in accent prestige to determine whether accent can be used as a measure of prestige in social transmission experiments. Participants (n=152 US; 142 UK) were presented with standardised recordings of a standard passage, containing lexical terms that highlight phonological differences between accents of English. Passages were spoken by middle-aged white male speakers representing a range of eight accents from the listener's country of residence and two from the alternative country. Participants rated the speakers on 24 different personal qualities including traits associated with prestige and friendliness. As predicted, participants rated the standard accents favourably for prestige across both locations. Participants perceived location-specific non-standard accents as having lower prestige, and accents deemed as having lower prestige as being friendlier. Accent indexes differential qualities for listeners, regardless of whether the concept is operationalised by the term "prestigious" or multiple terms related to 'prestige'. We assert that accent can be used as an indicator of prestige in the absence of other prestige information and demonstrate the importance of locally calibrating the accents used in prestige-based social transmission experiments.

Keywords: cultural evolution; sociolinguistics; prestige; language attitudes; accent; social transmission biases

1. Introduction

Prestige bias has been well-studied in the cultural evolution literature in evaluating the reasons why particular cultural traits are adopted over others. Here, we demonstrate how accent is a potential source of information bias in social learning, and this work is motivated by the need for a widely shared experimental mechanism of establishing prestige information. Although prestige can be indexed in many ways; experiments have tended to focus on attentional cues or deference as measures of prestige (Atkisson, Mesoudi, & O'Brien, 2012; Brand & Mesoudi, 2019; Chudek, Heller, Birch, & Henrich, 2012; Henrich & Gil-White, 2001; Jiménez & Mesoudi, 2019b). This is problematic because greater attention and deference are not just cues of prestige but a direct outcome. Accent, in contrast, is a relatively stable and accessible proxy for prestige across a broad range of speakers.

Accent is the variation in how speakers of a common language pronounce words and, beyond the specific language variety itself, can index a variety of social factors (e.g. age, gender, ethnicity, social class). Accents are typified by the proportion of specific linguistic variants expressed (e.g. the relative usage of phonemes [aː] and [æ] in 'bath' or 'trap'), and have been shown to be sufficiently varied to stimulate differences in social preferences for even preverbal infants (Kinzler, Dupoux, & Spelke, 2007).

As some accents are regionally bound (Alford & Strother, 1990; Clopper & Pisoni, 2006; Labov, Ash, & Boberg, 2005; Shackleton, 2007; Wells, 1982), accent can be used as a reliable marker of group identity. This is likely because accent is an honest signal; whilst some people can mimic other accents, it is difficult to maintain, especially when vernacular speech is elicited (Cohen, 2012). Accent can, therefore, be used to reliably infer social information about the speaker and can be used in transmission studies to make judgments about which individuals (models) to copy.

Many studies have demonstrated that accent can be used to determine different types of social information about individuals and also with whom we associate and trust (Harris & Corriveau, 2011; Kinzler, Corriveau, & Harris, 2011; Kinzler & DeJesus, 2013; Lev-Ari & Keysar, 2010). As one example, English-speaking children in the USA prioritise accent cues over visual cues of race when identifying others as in-group or not (Kinzler, Shutts, DeJesus, & Spelke, 2009).

Sociolinguists have demonstrated that people evaluate speakers by their accents for attitudinal qualities including prestige (Alford & Strother, 1990; Bayard, Weatherall, Gallois, & Pittam, 2001; Bishop, Coupland, & Garrett, 2005; Boucher, Hammock, McLaughlin, & Henry, 2013; Brown, Giles, & Thakerar, 1985; Callan & Gallois, 1987; Coupland & Bishop, 2007; Fuertes, Gottdiener, Martin, Gilbert, & Giles, 2012; Giles, 1970). In the sociolinguistic literature, accent-based prestige is often considered a population-level attribute and related to whether an accent is deemed a standard form or not, rather than being determined by an individual's success or expertise. Standard accents (e.g. "Received Pronunciation", "General American") are often considered to carry prestige and are not locality-specific (Morales, Scott, & Yorkston, 2012). These accents develop through a process of standardisation, usually at the establishment level, and are therefore deemed an ideological aspiration (Coupland, 2003; Coupland & Bishop, 2007). As such, the sociolinguistic literature distinguishes two types of prestige: (i) 'overt prestige', where listeners consciously ascribe positive status to a linguistic variable (i.e. accent difference) due to determinable attributes such as 'niceness'; and (ii) 'covert prestige', in which there is speaker movement toward linguistic variants that do not broadly have positive connotations (Meyerhoff, 2011). In this way, all accents (including non-standard, and foreign accents) can theoretically be afforded prestigious status (Hawkey, 2016).

Studies of accent perception have already been fruitfully applied in domains such as marketing (Laiwani, Lwin, & Li, 2005; Lwin & Wee, 1999; Morales et al., 2012; Tsalikis, Ortiz-Buonafina, & LaTour, 1992; Z. Wang, Arndt, Singh, Biernat, & Liu, 2013) and education (Eisenchlas & Tsurutani, 2011; Gill, 1994; Rubin & Smith, 1990; H. Wang & Heuven, 2004). Although taken together these studies have considered a range of global accents of English, accent perception is usually tested with a single population. It is therefore unclear whether these perceptions are stable across populations. We argue that accent is a potentially useful cue of prestige that can be employed in experimental studies of human behaviour, including those on cultural transmission and evolution. Previous experiments investigating a prestige effect have provided information about the individual model, or attentional and deferential cues (Atkisson et al., 2012; Brand & Mesoudi, 2019; Chudek et al., 2012; Henrich & Gil-White, 2001; Jiménez & Mesoudi, 2019a), but many instances of everyday social information

transmission employ spoken language (e.g. teaching). If we can establish the utility of using accent as a cue for prestige, we can expand the variety of experimental designs we use, and ground social transmission studies in increasingly realistic behaviour. By using accent as a proxy for prestige, we can use speech on its own as an experimental manipulation, and therefore remove the complex, contextual, and poorly understood confounds of visual cues of prestige (e.g. posture and clothing (Daloz, 2009; Fişek, Berger, & Norman, 2005)). Furthermore, we can attenuate the self-perpetuating aspects of prestige in the visual modality such as attention and deference: by paying attention to someone who others are paying attention to, we run the risk of contributing to their perceived prestige irrespective of whether initial attention is due to prestige.

The aims of this paper are twofold: a) to replicate previous language attitude studies to determine whether attitudes towards different accents of English are both stable and widely shared, and therefore, can act as a reliable source of social information bias; and b) to specifically investigate how those accents differ in prestige. Here, we present results from a language attitude survey where we presented a range of locally calibrated standard and nonstandard accents to participants. We expect that 1) accents are rated differentially on measures of prestige; 2) standard accents will have greater prestige; and 3) non-standard accents will be perceived as less prestigious.

2. Methods

2.1 Ethical statement

We obtained ethical approval from the University of Bristol Faculty of Arts Research Ethics Committee (protocols #31041 and #38323) and Colorado State University Institutional Review Board (protocol #014-16H).

2.2 Participants

We recruited participants for this task through online platforms Amazon Mechanical Turk and Turk Prime, and Prolific Academic for US (n = 152) and UK (n = 142) samples respectively. We compensated participants for their time at

rates above local minimum wages; rates were based on the time taken to complete the tasks.

2.3 Protocol

Participants from the US and the UK answered a short demographic questionnaire and were presented with ten recordings of differently-accented speakers reading the *Comma Gets a Cure* passage (Honorof, McCullough, & Somerville, 2000), a piece of text specifically written to discriminate between accents of English. Of the 10 recordings, eight were from the country in which the participant was based, and two were from the other country, providing a robustness check and a measure of how widespread accent perceptions are. Based on previous literature (Coupland & Bishop, 2007; Giles, 1970; Labov et al., 2005; Shackleton, 2007) we chose accents that represented both high and low prestige across both their own country and the other country. All speakers recited the same passage, so we presented participants with only the first paragraph of the passage (approximately 30 seconds) to shorten the overall length of the study and to ensure that participants' engagement with the task was not compromised due to attention loss. We informed participants that they would hear the same passage in each recording and were not required to pay attention to content, allowing them to focus on the voices. As they listened to each recording, participants rated the speakers on a seven-point Likert-type scale for 24 attitudinal variables.

2.4 Recordings

All but two recordings were sourced from the International Dialects of English Archive (IDEA: https://www.dialectsarchive.com/). This archive stores over one thousand samples of speech in English comprising recordings and interviews. For many of these recordings, phonetic transcripts are provided, as well as a detailed history of where the speakers have lived. We used recordings of white, male speakers between the ages of 31 and 59 years (mean age = 47.7 years), as a previous unpublished pilot study found that younger, female voices were deemed less prestigious overall. We also included speakers who fit the

demographic category with Colorado (American West) and Welsh accents who we recorded, diversifying our range of accents.

Table 1. Accents used from the UK and USA. Accents listed in bold were presented to both populations.

	UK Recordings	*US Recordings*
Standard	**Received Pronunciation**	**Colorado (West, urban)**
	SE England	Wyoming (West, rural)
		Oklahoma (Midland)
Non-standard	Ireland	Illinois (Inland North)
	NW England	New York City
	Scotland	**North Carolina (Inland South, blue collar)**
	SW England	
	Wales	North Carolina (Inland South, white collar)
	Yorkshire and the Humber	Pennsylvania (Mid-Atlantic)

Recordings from IDEA are categorised by location: the USA recordings are indexed by state, and the UK material are by broad geographic area. The recordings chosen were cross-referenced with dialect areas as defined by Labov et al. (2005) for USA accents and Shackleton (2007) for UK accents, providing both regional coverage and accent variation. As Labov et al. (2005) classify six regional accent areas in the USA (North, West, New England, New York City and Mid-Atlantic, Midland and South), two recordings representing the West and Inland South accent are included from speakers who differ in occupation. We did not test New England accents due to lack of quality recordings available for speakers with the desired demographic characteristics. The accents presented to both UK and US participants were representative of standard (UK: Received Pronunciation and Southeast English accents; USA: "General American" [West and Midland] accents) and non-standard variants (Cheshire, 1991; Trudgill & Hannah, 2008) (see Table 1).

Comma Gets a Cure is a passage containing terms from J.C. Wells' lexical set (1982). The first paragraph included the following words, which highlight phonological differences between accents: NURSE, HAPPY, START, NORTH, SQUARE, FACE, DRESS, FLEECE, and KIT. The variation in vowel space used for

these words is listed for RP and General American in this lexical set (Evans & Iverson, 2004), and can be diagnostic for different regional accents (Evans & Iverson, 2004). As such we expect these recordings demonstrate sufficient diversity for participants to either identify or make judgments based on different accents.

2.5. Attitudinal Variables

Table 2. Attitudinal variables evaluated by participants. Terms in bold are included in the Position-Reputation-Information scale of prestige (Berl, Samarasinghe, Jordan, & Gavin, 2019). Status, solidarity and dynamism dimensions taken from Fuertes et al. (2012).

Unclassified	*Status*	*Solidarity*	*Dynamism*
prestigious	**high social status**	(un)kind	hardworking
powerful	**wealthy**	good natured	friendly
reputable	**(un)intelligent**		aggressive
respected	**educated**		active
successful	(un)ambitious		confident
driven	talented		
skilled	clear		
warm			
comforting			
enthusiastic			

We selected attitudinal variables across domains of status, solidarity and dynamism based on the most common terms from previous language attitude studies (Fuertes et al., 2012). We also designed this experiment to test the Position-Reputation-Information (PRI) scale of individual prestige, the results of which we have presented and discussed in a separate paper (Berl et al., 2019) (see Table 2). We include PRI terms to capture aspects of prestige not previously considered in other language attitude studies (Brown et al., 1985; Callan & Gallois, 1987; Fuertes et al., 2012; Giles, 1970; Gill, 1994; Levin, Giles, & Garrett, 1994). We asked participants to rate accents for the terms in Table 2 where 1 was 'strongly agree' and 7 was 'strongly disagree'. The scale was reversed for some of the terms to ensure that participants' attention was held and to reduce response bias (Schriesheim & Hill, 1981). Negative forms of the intelligent,

ambitious and kind were used by supplying "un-" as a prefix. We randomised the order in which we asked participants about these terms for each accent recording. An additional artificial speech recording was included with instructions to rate all terms beginning with consonants a "7" and all terms beginning with vowel a "1" as an attention check.

2.6 Data Analysis

We prepared and analysed data using the *stringr*, *reshape*, *FactoMineR* and *base* R packages. Participants vary in how they use the Likert scale, so we calculated z-scores so that responses were comparable to the mean. Although we included the term "prestigious", previous research shows that 'prestige' is multifaceted and participants operationalise various definitions of prestige in experimental contexts (Berl et al., 2019). A Principal Component Analysis (PCA) was run to capture the majority of the data with a reduced number of variables. The PCA was conducted in the *FactoMineR* and *factoextra* packages, Welch's ANOVA was carried out using one way tests with all other statistical tests carried out in the *base R* package. Boxplots were created using *ggplot2*.

3. Results

To consolidate the number of variables, we ran a PCA on all respondents' data for their evaluative ratings on the different attitude variables (e.g. friendly, skilled) across accents. We find that attitudinal variables cluster. Five components have eigenvalues greater than 1, which accounts for 56.2% of the variation. Component 1 accounts for 28.5% of variance and terms here relate to status or prestige domains. Component 2 accounts for 13% of variance and corresponds to friendliness, or terms that we would expect in line with the solidarity and dynamism domains (Figure 1). We also compared these dimensions to how "prestigious" (Figure 2) and "friendly" (Figure 3) participants rated the different accents Components 3, 4 and 5 explains 5.7%, 5.3% and 3.8% of the variance, respectively. Component loadings for all attitudinal variables can be found in Table S1.

Attitudinal measures of "ambitious" (-0.54) and "clear" (-0.39) correlated negatively with the prestige dimension, a result which contradicts previous research arguing that both terms are status driven (Fuertes et al., 2012). In support of this finding, in our other work both of these terms also dropped out of the PRI scale of individual prestige due to clustering with other domains ("clear") or low salience for prestige with participants ("ambitious") (Berl et al., 2019). These results support the omission of these terms from status or prestige domains. However, the negative relationship between "kind" and the friendliness dimension is also unexpected. However, as "kind" was one of the reversed terms and presented to participants in the negative form "unkind", this may be due to participants losing attention. We found that participants were less inclined to rate reversed terms at extreme parts of the scale.

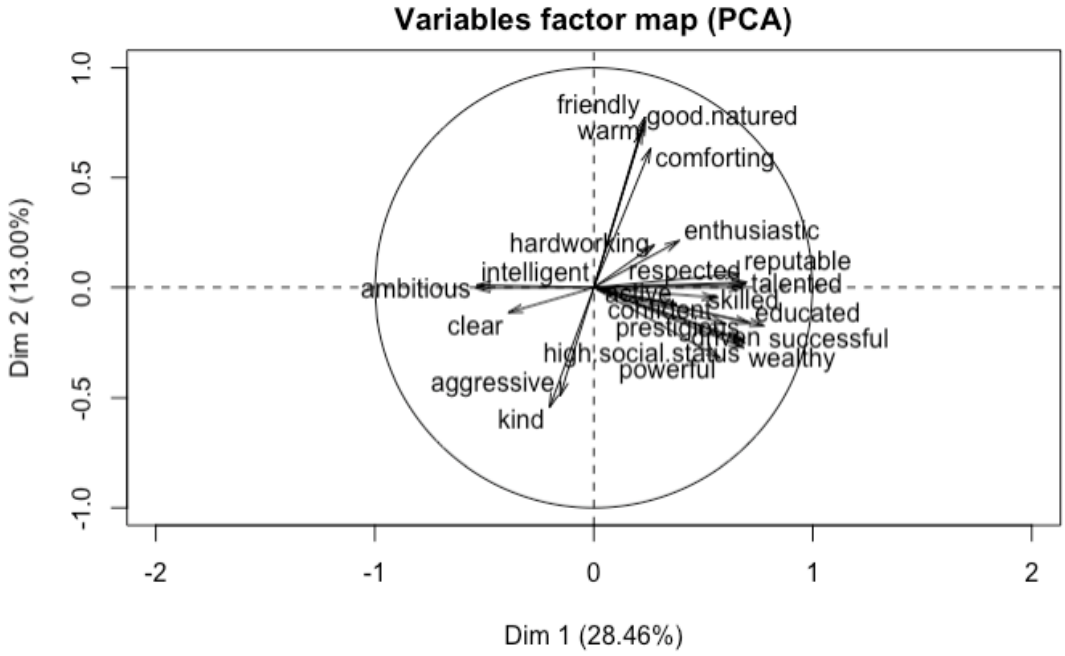

Figure 1. Principal Components Analysis (PCA) showing attitudinal variables along Prestige (Dim 1) and Friendliness (Dim 2) dimensions.

Assumptions for normality and homogeneity of variance were not met for the one-way ANOVAs for both prestige and friendliness; therefore, we deemed sample size sufficient for Welch's ANOVA. For the prestige dimension (Figure 2), we found a statistically significant difference between accents ($F(15) = 134.84$, $p < 0.001$). Pairwise comparisons using Wilcoxon rank sum tests using

the Benjamini and Hochberg (BH) p-value adjustment method found significant differences between participant's evaluations of prestige for the accents highlighted in Table S2. These results demonstrate variance in responses to accent prestige and are consistent with the hypothesis that standard accents (e.g. Received Pronunciation and General American accents) are rated more favourably for prestige over non-standard accents. Participants rated the Welsh accent favourably for prestige despite previous studies concluding that Welsh is usually ranked as middling for prestige and social attractiveness (Bishop et al., 2005; Coupland & Bishop, 2007; Giles, 1970), but, as this was recorded recently by the authors, this may be due to better sound quality.

For the friendliness dimension (Figure 3), Welch's ANOVA ($H(15) = 44.521$, $p < 0.001$) determined there was a statistically significant difference between groups. Pairwise comparisons using Wilcoxon rank sum tests (with the BH p-value adjustment method) showed that were significant differences between participant's evaluations of friendliness for the accents highlighted in Table S3.

Here, we find that Southeast England English is rated most highly for prestige by UK participants but ranked considerably lower for friendliness. Regional accents from the West of England are considered favourably for friendliness. USA participants rated Mid-Atlantic and Western accents (consistent with "General American" accents) highly for prestige but rated Received Pronunciation as the most prestigious accent. The Inland South accent was rated low for prestige but highly for friendliness.

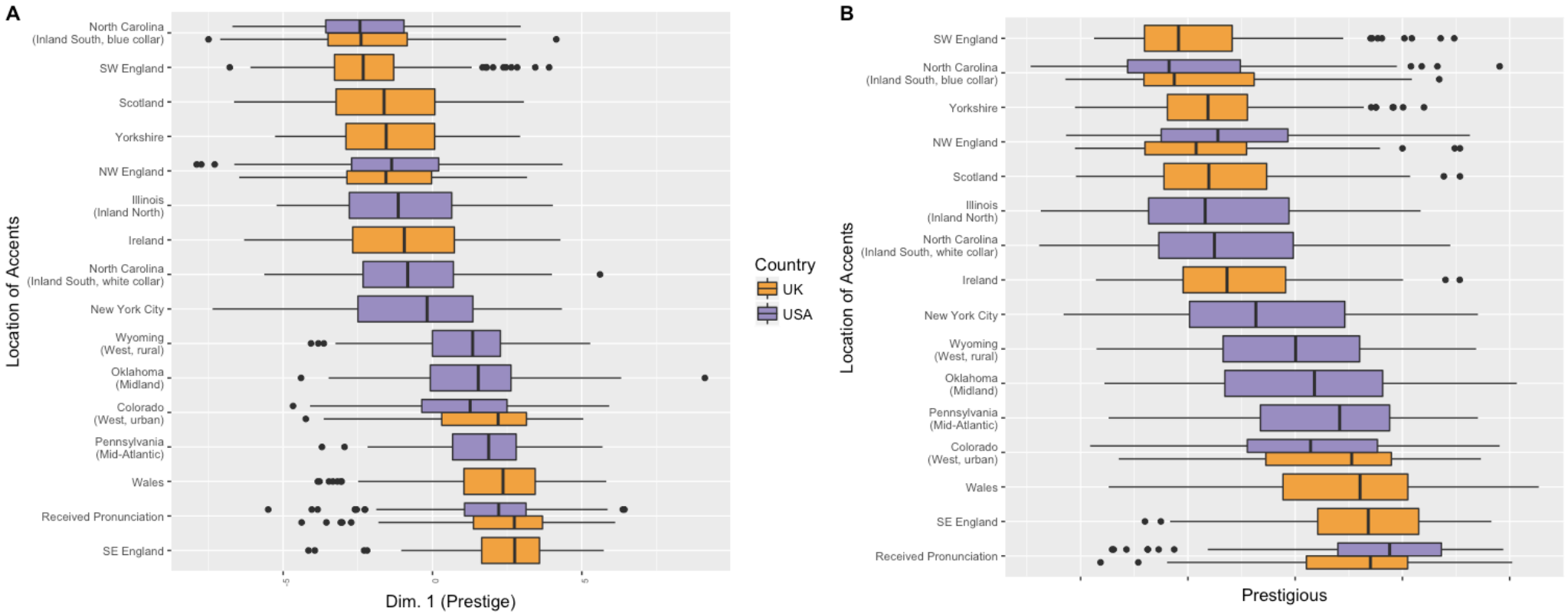

Figure.2. Perceived prestige of regional accents of English. Each boxplot represents the distribution of responses of participant scores for A) Dim. 1 (Prestige) and B) the variable "prestigious" where 0 is neutral after standardisation. The hinges correspond to the first and third quantiles and the central line represents the median. UK participants rated accents with orange boxplots and US participants rated accents with purple boxplots. Accents with two boxplots were presented to participants in both locations.

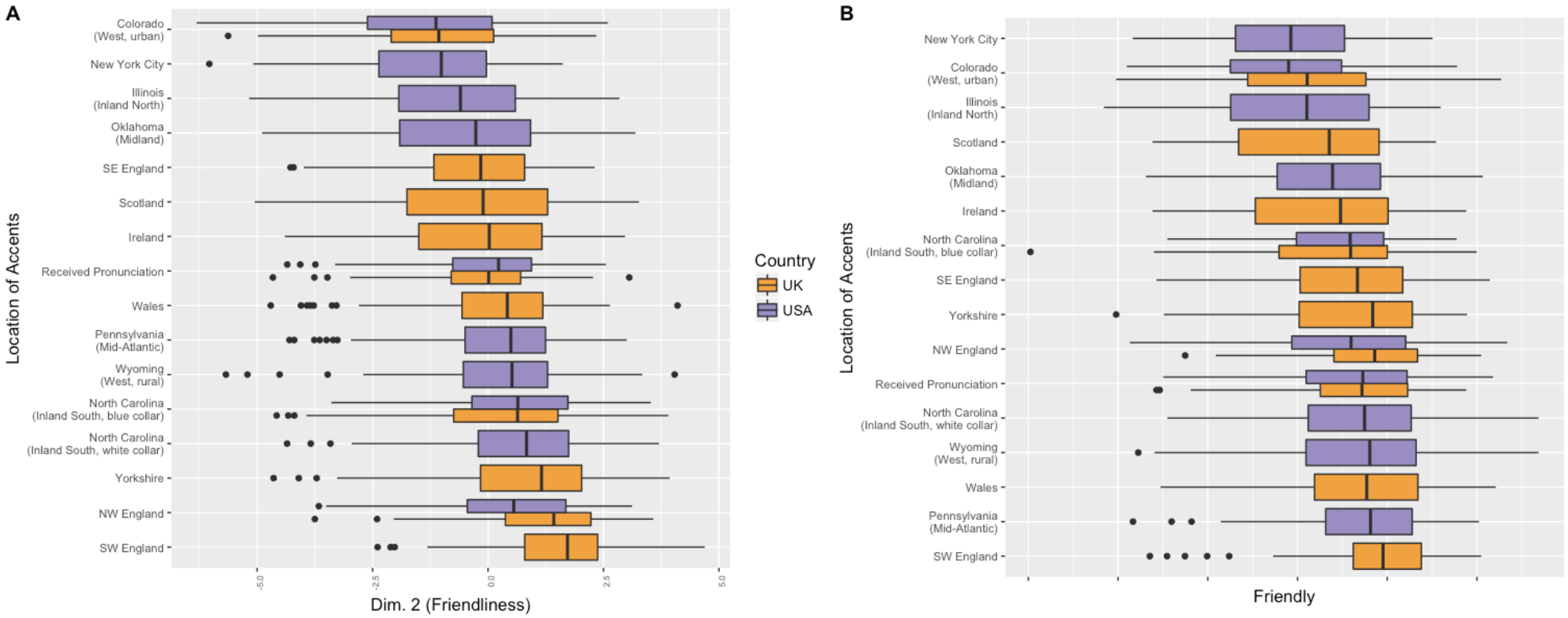

Figure 3. Perceived friendly of regional accents of English. Each boxplot represents the distribution of responses of participant scores for A) Dim. 2 (Friendliness) and B) the variable "friendly" where 0 is neutral after standardisation. The hinges correspond to the first and third quantiles and the central line represents the median. UK participants rated accents with orange boxplots and US participants rated accents with purple boxplots. Accents with two boxplots were presented to participants in both locations.

4. Discussion

4.1 Accents can be used to index social characteristics

Our results show that participants are able to make discriminatory judgments about the social characteristics of speakers based on accent alone. In the absence of any other information and provided with the same content, participants differentially rated speakers across many attitudinal variables (Figure S1). The results of our PCA suggest that attitudinal variables cluster along dimensions that might index prestige and friendliness. That these categories can be manifested through accent is potentially useful because these domains also broadly correspond to prestige and familiarity biases in the CE literature, which suggests that accent might be operationalised as a cue for these factors in CE experiments.

4.2 Accents demonstrate differential prestige

For British and American English speakers, accents show differential prestige (Figure 2). Participants rated the "General American" cluster of accents (West/Midlands) and RP–all standard forms of English–favourably for prestige across both locations. This finding contributes to a body of research suggesting that we associate prestige with standard varieties (Brown et al., 1985; Coupland, 2003; Coupland & Bishop, 2007; Giles, 1971, 1973; Giles & Sassoon, 1983; Milroy, 2007; Milroy & Milroy, 1999). However, participants in both countries rated RP highest for prestige, implying that the prestige of this particular variety is stable and widespread. This result has been found elsewhere, which is likely to be an artefact of the British colonial past (Stewart, Bouchard Ryan, & Giles, 1985). "General American" accents were also rated highly so our results are unlikely to be a case of cultural cringe, whereby participants are less favourable towards accents similar to their own (Bayard et al., 2001; Eisenchlas & Tsurutani, 2011; Pickles, 2011). We might expect that some level of in-group association in necessary for prestige to be relevant, however, here we show that prestige can be afforded to out-group members. As US participants rated RP as having the highest prestige, this suggests that we cannot make assumptions

about the relevancy of accents and should be testing and locally calibrating the accents used in accent-based studies.

4.3 Regional accents are perceived as friendlier

In line with previous studies (Coupland & Bishop, 2007; Giles, 1970; Kinzler & DeJesus, 2013), the top five friendliest accents (SW England, NW England, Yorkshire, blue collar North Carolina, white collar North Carolina) rated by our participants are regional/non-standard accents (see Figure 3). However, standard accents varied in their perceived friendliness. Prior research provides evidence to suggest that we associate stereotypes with location-specific accents (Boucher et al., 2013; Gluszek & Dovidio, 2010; Ladegaard & Sachdev, 2006), and so it may be more difficult to reconcile both positive and negative stereotypes with generalised accents. However, standard accents may still be deployed as an outgroup when considering solidarity-related biases because they are usually non-geographically specific. In this case it is difficult to form a shared identity based on accent alone.

4.4 Prestigious accents are less likely to be considered friendly

In general, participants perceived location-specific non-standard accents as having lower prestige. Conversely, of the four accents presented to both listeners in both locations, participants perceived those deemed as having lower prestige as being friendlier, which may suggest that a trade-off exists between being deemed prestigious or friendly (Coupland & Bishop, 2007; Kinzler & DeJesus, 2013; Laiwani et al., 2005; Morales et al., 2012; Stewart et al., 1985).

However, if we are to posit that non-standard regional accents are perceived as friendlier, RP might be considered a special case. Participants did not rate RP as unfriendly, despite its high prestige score, as expected for both UK and US participants. This outcome may be because RP has often been associated with the 'Queen's English,' which has variable connotations depending on the listener. For example, other language attitude surveys found older individuals and participants in Southeast England hold positive attitudes towards 'Queen's English', but this accent is deemed socially unattractive in Celtic fringe regions

such as Northern Ireland, Scotland and Wales, potentially a consequence of socio-political context (Bishop et al., 2005; Coupland & Bishop, 2007). As such, RP may index a specific socio-political context that may be deemed socially attractive internationally.

4.5 Accents as a robust proxy for prestige

Across both populations, participants' responses to the relevant standard and regional/non-standard accents were similar. Participants were also able to identify the accents from the alternative country as high or low prestige, and evaluated these accents in line with participants from the other country. This is an interesting finding because, although we might expect associations with accent to be based on familiarity, our results suggest that these two populations share attitudes toward accent notwithstanding group affiliation or lack thereof. This may be partially due to working with Global North populations only, who may have greater exposure to multiple accents of English in media. Nevertheless, for the populations studied, our results replicate previous language attitude surveys (Bishop et al., 2005; Boucher et al., 2013; Bresnahan, Ohashi, Nebashi, Liu, & Shearman, 2002; Giles, 1970; Kinzler & DeJesus, 2013; Ladegaard & Sachdev, 2006), suggesting that these attitudes are stable and widespread, and therefore can be effectively deployed as a cue for prestige, and potentially other social information.

Accent has not previously been used in social transmission experiments, and prestige has often been established through attentional cues or deference (Atkisson, Mesoudi and O'Brien, 2012; Chudek et al., 2012; Henrich and Gil-White, 2001; Jiménez and Mesoudi, 2019b). However, in any transmission event that relies upon the use of speech or verbal cues, accent prestige may be an additional confound that is unaccounted for. We suggest that researchers at the very least should consider the effects on their studies if accent is a carrier of social information cues.

Accent offers further potential benefits to the experimental study of prestige. Individuals can independently evaluate whether a person is prestigious based on their own information, without relying on cues from third parties.

Relatedly, attention/deference measures can only convey prestige to the individual receiving the attention, whereas accent prestige is a property of (multiple) individuals and groups, and allows for greater scope in exploring models of social information transmission. The variance in prestige across accents of English shows that accent can be used as an indicator of prestige in the absence of other prestige information, and, thus, could be used as a broadly-shared cue of prestige bias. Aspects of language (e.g. accent, prosody, gesture etc) beyond propositional content have been underexplored by social learning and cultural evolution researchers and we hope our results show that there is much to learn. Finally, further research to examine prestige evaluation effects in languages other than English would be valuable in establishing this phenomena more generally.

5. Acknowledgments

The recordings used in this project (with the exception of Colorado and Wales, which were recorded by the authors) are used by special permission of the International Dialects of English Archive, online at http://www.dialectsarchive.com. *Comma Gets a Cure* is copyright 2000 Douglas N. Honorof, Jill McCullough & Barbara Somerville, text available online at: http://www.dialectsarchive.com/comma-gets-a-cure. The Max Planck Institute for the Science of Human History funded the project.

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