Culture value on community life behavior of the phonetic and phonology

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Abstract---The research aimed to describe the culture value on community life behavior of the phonetic and phonology. The processes through on the values of cultural forms are formulated, maintained and communicated across social populations. A focus is the emergence and spread of a prestige register of spoken British English. It was called 'Received Pronunciation'. The number of characterological discourses of speech and accent that articulate the values of the register and bring them into circulation before particular audiences. The historical spread of the register was linked to the circulation of such discourses. We propose specific models for understanding the circulation of discourse across social populations and the means by which these values are recognized, maintained, and transformed.

Keywords---behavior, community, culture, phonetics, phonology.

Introduction

Children's speech production is even more notable than adult speech for its variability. Changes can be observed almost daily in the speech development of any child, and lexical items may be produced with a wide range of different forms by individual children. Much of this variability can be attributed to factors such as immature motor skills, imperfect mapping of adult targets, or carry-over effects from babbling preferences (Menn & Stoel-Gammon, 1995).

Variation in children's speech may also reflect different learning opportunities provided by different input patterns. Most obviously, a child learns a particular language or variety because it receives a predominance of input in that language or variety. A number of sociolinguistic studies have tracked the development of variety-specific features, or features subject to ongoing sound change, including Payne (1980), Roberts & Labov (1995), and Roberts (1997). Children seem to be capable of acquiring complex patterns of sociolinguistic variation at least as young as 3 years, although there is some evidence that across-the-board patterns are acquired more readily than those involving complex contextual or lexical constraints.

Roberts & Labov (1995), for example, focused on the acquisition of /a/ in Philadelphia. This vowel undergoes tensing in closed syllables, thus yielding a difference between plan.et (tense vowel) and Ja.net (lax). Children between 3;2 and 3;10 showed evidence of distinguishing such pairs in production, but the polarity emerged much more clearly for

children aged 3;11 to 4;11. Payne (1980) studied a number of variables in the speech of 34 children who were in-migrants to Philadelphia. Few children acquired the tensing pattern for /]/, whereas across-the-board patterns were learned within a year or two of arrival in the city.

Within a dialect community, subtle differences in input may yield subtle differences in children's own productions. Hewlett, Matthews, & Scobbie (1999) examined acquisition of the distinctive vowel length pattern found in most Scottish dialects of English. Their subjects were seven 6–9-year olds all of whom were judged to speak with a Scottish accent. In standard English, a vowel duration difference is found depending on whether the following consonant is phonologically voiced or voiceless: The vowels of brute and Bruce are shorter than those of brood or bruise. In Scottish dialects, the pattern is more complex, with short vowels also appearing before voiced stops. Brood, therefore, has a short vowel. Hewlett et al. found that the Scottish pattern was learned most readily by children who had at least one Scottish parent, presumably because their linguistic input contained consistent exemplification of the pattern. The pattern was less readily acquired by children of non-Scottish parents (Foulkes & Docherty, 2006; Johnson, 2006).

Data from Newcastle further suggest that variability in children's performance may be linked to individual variability in the input. Analysis of prepausal /t/ showed that children's use of variants correlated with that of their mothers. Fig. 10 summarizes variant usage by mothers and children in the form of a scatter plot. The horizontal axis represents the proportion of the children's tokens that were classified as aspirated. The vertical axis represents the mothers' use of preaspiration. Six mother-child pairs were removed from the overall sample because of low token counts by one or both speaker(s), leaving 33 pairs shown in Fig. 10. The overall correlation reaches significance at the 5% level (r ¼ :366, df ¼ 31), and is particularly clear if we ignore a number of apparent outliers (circled). Note that these are all children who used high rates of preaspiration but whose mothers did not. Perhaps of greatest interest, however, is that the reverse pattern was not found, suggesting that if the mother produces preaspiration the child is likely to follow suit (Agha, 2003; MacFarlane & Stuart-Smith, 2012; Floccia et al., 2012).

Applying the principles of the exemplar-based model leads to the prediction that knowledge of the sociophonetic dimensions conveyed within the speech signal will be present from an early stage of phonological acquisition. Assuming that children learn language via input from more than one individual, it follows that all tokens of all words will inherently contain a reference to individual talkers (Hoff, 2006; Verzijden et al., 2012; Labov, 1986). Within an exemplary model, it is reasonable to assume further that exemplars are likely to cluster relatively neatly as a result of stark and consistent phonetic differences across individual talkers. In the early stages of acquisition, when the child has only limited experience and a small exemplar store, it is conceivable that three basic groupings will emerge.

These three groups will consist of exemplars derived from adult males, adult females, and children, respectively, based on marked phonetic distinctions that are fundamentally driven by biological differences (f0, formant frequencies, etc.). In the first instance, the child may not be aware of the source of the clustering or the indexical meaning of the differences between the phonetic variants within the clusters, but it is the very presence of such clusters that permits indexical awareness to emerge.

Given this foundation, and sufficient maturity and experience, the child would begin to build an understanding of the correlations between clusters of exemplars and specific features of the immediate environment (Foster et al., 2005; Petitto et al., 2012). For example, recognition of an individual talker is likely to emerge first, in particular of the primary carer, who will be the source of the majority of the early input. Recognition of individual talkers should, in turn, give rise to recognition of groups of talkers, most readily perhaps the three basic groupings of adult male, adult female, and child. The child may

well begin by inferring that the difference resides on a dimension such as mother/father/sibling rather than the more abstract male/female/child, although at some point in developing more extensive experience with ambient phonological variability should enable generalizations to be made. Subsequent experience with structured variation, which yields further distinct clusters of exemplars, permits other indexical categories to emerge.

Discussion

The extent to which the development of awareness of the social-indexical value of phonetic variation is an explicit or implicit process is a matter on which investigators can only be agnostic at this stage. Within an exemplar-based account, associations between clusters of exemplars and particular environmental referents need not be explicit since they would arise as a direct consequence of the associative nature of the representation that is proposed. Nevertheless, adults, and even young children, do demonstrate an explicit awareness of at least some of these associations and can be observed to manipulate them within conversational interaction (*e.g.,* Sangster, 2002, illustrates young adults' explicit awareness and manipulation of the stereotypes associated with their own particular regional variety of English; likewise, Sachs & Devin, 1976, report on children's use of age-appropriate speech-styles in interactions with other children). However, the conditions that lead to the development of such explicit knowledge remain to be investigated experimentally.

Implicit social cognition

Dual systems models, common in cognitive and social psychology, propose that people have (at least) two different types of reasoning systems (for an overview, see Evans, 2008). While the details of dual systems theories differ, one type of reasoning is characterized as some combination of associative, automatic, low effort, rapid, domain-specific and/or unconscious while the other is propositional, controlled, effortful, general-purpose, relatively slow and/or available to conscious introspection. A full summary of the various systems and their strengths and weaknesses is beyond the scope of this paper, but language processing, particularly perception, has long been recognized as falling into the former category (e.g. Fodor, 1983). Over the past two decades, social cognition research has established that many forms of social reasoning can also occur rapidly and without conscious, deliberative control (Bargh & Chartrand, 1999).

Most relevant for the current discussion is impression formation, a specialized process for learning about other individuals (Asch, 1946; Kelley, 1950). By grouping information into trait-based clusters, this process leads to better subsequent recall than simple memorization, particularly for personality-relevant information, such as behavior at odds with known traits (Hamilton *et al.,* 1980, 1989). The system can be prompted by telling participants directly that the information they receive describes an individual and instructing them to form an impression of that person, but it can also be triggered through less direct means, by giving participants a task that primes words like impression and personality prior to presenting them with a list of behavioral information (Chartrand & Bargh, 1996; McCulloch *et al.,* 2007).

Further evidence for some automatic processes in person perception is provided by Bargh *et al.,* (2008), who show that activating particular templates of evaluation shows "spillover" effects in which another individual's rudeness is seen differently. In that study, participants asked to evaluate an actor as a potential reporter (a profession in which politeness might be less valued than others) showed higher likeability ratings of a different

actor who behaves somewhat rudely than those evaluating the original actor as a waiter and those told simply to observe a conversation. In contrast, the polite version of the "interrupter" actor showed no difference in ratings across the three conditions.

Such spillover effects may also be seen in more active social behaviors like interactional stances (Silverstein, 2003; Locke & Hauser, 1999). Experiment participants assigned the role of "helper" in an experimental task (deciphering ambiguous images) show more helpful qualities in irrelevant decisions (predicted alumni giving and experimental participation for no incentive) which are introduced in the middle of the setting, an effect which disappears when the tasks are introduced after the conclusion of the helping task (Bargh *et al.,* 2008). This suggests that even seemingly very choice-based social behaviors, such as deciding how much money one might donate to one's university in the future, are managed at least in part through automatic systems. If this is the case, it provides a solution to the question of how linguistic forms not available to social introspection can still correlate with seemingly agentive social goals.

It also provides a potential solution to the related speed problem, frequently raised by linguists in response to third-wave theories: namely, how can something as complex as social reasoning be integrated with something as fast as linguistic processing. The answer is that while social reasoning, like language, is indeed complex, parts of it, also like language, are accomplished through automatic systems (Berent, 2013; Simonet, 2010; Port, 2007).

A well-studied aspect of automatic social processing is the activation of stereotypes by group exemplars, even among individuals with motivation to counteract or conceal stereotyping (Blair & Banaji, 1996). Once activated, stereotypes not only influence perceptions of the members of stereotyped groups but also facilitate the identification of stereotype-relevant items including words (Wittenbrink *et al.,* 1997) and visual images like guns (Payne, 2006). Research on stereotypic associations has primarily used faces or names as prompts to represent examples of stereotyped groups, but in interaction socially meaningful variation is a common method of identifying group membership, making stereotype activation by linguistic forms a key issue for both sociolinguists and social psychologists.

The sociolinguistic activation of stereotypes and other social information also has important implications for linguists generally, given that social processes, including person perception and goal pursuit, often take place simultaneously with language production and perception. The sociolinguistic literature as a whole testifies to the many connections between social and linguistic knowledge, involving all linguistic levels of structure. The sociophonetic work outlined above documents a handful of known connections between social and linguistic cognition. The extent and character of these connections can offer valuable insight into the workings of both types of processes. The current study approaches this question by asking whether and how socially meaningful linguistic forms participate in associative networks of social information, using the Implicit Association Test.

A new and rather different approach to the modality problem is to ask if there is something about the vocal channel that contributes to fitness in other primates. That is to say, an examination of the vocalization patterns of nonhuman primates may offer insights into social or other benefits associated with communication in that modality. For reasons that will become evident shortly, an opening wedge relates to the frequency with which individuals vocalize, that is, to their volubility.

Volubility refers to the amount of time individuals vocalize or speak or the number of vocal or speech events per unit of time. Research in the last half-century suggests three generalizations that relate to volubility. The first generalization relates to sex. Females are

typically more voluble than males when speaking with a same-sex conversational partner of their own choosing (Dabbs & Ruback 1984; Ickes & Barnes 1977; Street & Murphy 1987). Exceptions to this, where they have occurred (Frances 1979; Mulac 1989; Simkins-Bullock & Wildman 1991), generally have involved time- and topic-constrained interactions. Pre-adult females also tend to talk more often than their male counterparts (Jormakka 1976; Larson *et al.,* 1996; Raffaelli & Duckett 1989; Smith & Connolly 1972).

A second generalization relates to social class. Infants reared by parents whose education and income place them at the upper end of the socioeconomic scale (SES) are more voluble than lower-SES infants (Oller *et al.,* 1994). Later in development, there is evidence that middle-SES children talk more than children farther down the SES (Young, 1941). There is also a tendency for middle-SES parents to talk more to their children than lower-SES parents (Hart & Risley 1992; Heath 1983; Lawrence & Shipley 1996; Ninio 1980; Snow *et al.,* 1976).

The third generalization about volubility concerns rate of language development. Several investigators observed a relationship between the number of utterances in recording sessions and measures of linguistic progress, both in infants (D'Odorico 1996; Nelson 1973) and older children (Landon & Sommers 1979; van Kleeck &Street 1982). Moreover, children who are lexically delayed at the end of the second year of life tend to be less voluble than children whose vocabularies are developing on schedule (Paul & Jennings 1992; Rescorla & Ratner 1996; Thal *et al.,* 1995). When language-delayed children reach adulthood, they remain less voluble—and in subtle ways linguistically less competent— than adults who acquired their native language at a normal rate (Tomblin et al. 1992).

Several of the factors that relate to volubility may be interconnected, of course, suggesting that volubility contributes indirectly to vocal communication and language. The direction of any causality is less clear. One reason for suspecting that volubility—or a factor that is associated with volubility—facilitates the development of language, however, stems from the fact that, in most of the developmental studies, any vocalization or speech attempt was counted, regardless of its linguistic status or level of complexity.

Linguistic structure and function reflect a variety of biological biases and constraints. These have been demonstrated at the phonetic and phonological levels of language (Locke 1983) and in the ontogenetic processes by which linguistic competence develops (Lenneberg 1967; Locke 1993; Studdert-Kennedy, 1991).

Variation, social meaning and identity

Phonetic and social information are linked in complex ways. Speech sounds seem to hold social information for listeners; social information which can vary across time and place. Campbell-Kibler (2007, 2009), for example, looked at the social meanings of (ING) in college campuses. Her findings show a range of meanings for (ING), with listener perceptions of –ing and –in varying by whether the listener perceived the speaker as a southerner, as educated or working class. She argues that (ING) itself has no fixed correlation to a social factor, but merely indexes certain relationships or 'inhabits an indexical field of related meanings' (see Eckert, 2008 for a discussion of the indexical field). In thinking about the link between the social situation of the speaker, and their speech behavior, it is crucial to consider their social practices.

Eckert (2008) uses the term personae to refer not to different people, but to the same individual in a variety of situations. We have used this term in our study to refer to the two

fantasy males we created for the same reason; the males are not intended to be heavily drawn caricatures of e.g. the poor man vs. the rich man, but particular personae as might be assumed by someone in a social space. The movement of people through their social terrain is put best by Eckert who writes: "It is in the links between the individual and the macro-sociological category that we must seek the social practices in which people fashion their ways of speaking, moving their styles this way or that as they move their personae through situations from moment to moment, from day to day, and through the life course".

Looking at the social meaning of specific variants, and the potential for the meaning to change has become a task of what is now referred to as the 'third wave' of variationist studies (see Eckert, 2005 for a discussion of the 1st, 2nd and 3rd wave approaches). The approach taken by third-wave researchers, including Penelope Eckert, Kathryn Campbell-Kibler, and Mary Bucholtz, to name a few, looks not only at whatever meaning the variable indexes but also at the social meanings it constructs (Dyer, 2007), and, as Tagliamonte (2012) notes, looks at variation with particular reference to styles and identity categories. Examples are: (ING) and its potential social meanings in different United States college campuses (Campbell-Kibler, 2007); the vocalic variable (aw) in e.g. house in the creation and indexing of identity in Pittsburgh (Johnstone & Kiesling, 2008); and the use of 'smooth operator', 'alley saunterer' and 'cosmopolitan' variables in the construction of a yuppie identity in Beijing (Zhang, 2005). All of these studies rely on people having a particular idea of their own identity, and the identity of others. Identity is somewhat meaningless outside of our social world; it becomes meaningful when we have some other identity to compare it too, just as with phonetic variation. But what characteristics of the identity do we compare? One of the ways we see ourselves and others is as consumers, and consumption is signaled by brands.

Social stereotypes and brand logos

We create meaning from our surroundings, and in making sense of the world we develop mental shortcuts, heuristics and stereotypes to get around the complexity (Fiske *et al.,* 2010). This is put clearly by Fiske, who writes "essential for efficient functioning is the ability to quickly and effectively sort out different objects". We introduced the notion that phonetic information and social information are indexical of each other, and depend on part in the social situations they occur in.

These social situations can, in turn, be thought of as indexes of larger stereotypes. Basketball indexes sporty, chess club indexes geek, golf club indexes preppy, and so on. This series of linkages – speech indexing social personae, social personae indexing a larger social stereotype, and stereotypes indexing certain schematic representations – all work to aid the listener in navigating their social world, and also help the speaker to place themselves in this world. In this sense, the dominance of one stereotype over another, and the context within which it functions influences exactly what function the variable performs, a point which we return to in our discussion. For example, Casper et al. (2010) primed participants with 39 category primes (e.g. Arab) matched with 39 context primes (e.g. airport), and then presented participants with a lexical decision task, where they had to decide if the word presented (e.g. terrorist) was real or a non-word.

The processing of the stereotypic word was aided by categories only if context was present, and matched to the category, leading them to conclude that context is a crucial factor in the automatic activation of stereotypes. Forehand *et al.* (2002) also talk about one's social self-schema as the 'sum total of his or her social identities' and in their study found that identity priming, i.e. activating a particular identity of a person, can influence their performance in a certain task.

Taylor & Crocker (1981) note in their useful discussion on the different types of schemas, the function of the schema is to "provide hypotheses about incoming stimuli, which

includes plans for interpreting and gathering scheme-related information". A helpful way to think about schemas is to analogize them to maps. Just as maps show the general characteristics of an area, and the main features one might find there (e.g. we notice that a large river cuts it in half; it has a grand cathedral with a majestic, domed roof and a large revolving wheel that people ride on sits by the river: by now we can be reasonably sure we are in London) the schema does something similar for individuals and groups.

With these approaches to identity in mind, we investigate whether social practices, loosely represented by brand logos (which themselves loosely represent two of many Glasgow male personae) can be an effective crutch in directing social schemas and stereotypes to categorize fine-phonetic variation.

We were interested in testing the usefulness of using a novel method of abstract social stimuli – brand logos – to aid listeners in their evaluation of phonetic variation, and what this might tell us about how people categorize aspects of their social worlds and make associations with abstract aspects of sound structure. Fournier's (1998) agenda-setting paper on brand relationships started a new way of approaching brands, one that fore-grounded the brand's social meaning and how consumers adopt brands into perceptions of themselves. In the following statement, readers will note a striking resemblance in Fournier's conception of brands, and the conception of the phonetic variant by recent sociolinguistic researchers, e.g. as mentioned above.

She writes that brands have been "shown to serve as powerful repositories of meaning purposively and differentially employed in the substantiation, creation and (re) production of concepts of self...". This approach has been taken forward by social psychologists who have sought to understand how people perceive brands at a more fundamental level. Kervyn et al. (in press), using the Stereotype Content Model (Fiske *et al.,* 2002, 2007), found that people categorize brands on largely the same dimensions (warmth and competence) as they categorize other people. They conclude their work by stating that "consumers perceive, feel, and behave toward brands in ways that are similar to their interactions with other people and social groups" (in press).

From a more socio-anthropological perspective, Douglas & Isherwood (1996) speak of brands, and the choice to buy one brand over another, as an active form of protest against other competing styles of life. They state that "Social life is a matter of alignments, for and against, and for signaling alignments goods are like flags" (Douglas & Isherwood, 1996). Our brand logos represent more than just a quick stereotype drawn from our schemas. They are pieces of a jigsaw of social life, where one brand logo represents a battle against another.

How this relates to phonological variation should be clear: just as we stake our territory with our choice of clothing, so too do our phonological choices, albeit usually at a much less accessible level of consciousness. We do not so much signal our identity with our phonological repertoire but create it (see Eckert's 2008 discussion of the construction of social personae through social and linguistic practices). As an aside, it is a curiosity of identity that people are content to manage their identities according to situation and the passage of time with material goods (whole industries and academic disciplines, e.g. marketing are testaments to this), but to do this with phonetic variation can meet with scorn as the following quote shows. It is taken from the website www.nightb4.com, a website dedicated to pubbing and clubbing in the UK.

We argue that the concept of patterned practice can be key in unpacking the 'effects of culture on the brain'. The concept of patterned practice groups people by establishing through empirical work that participants interact, thereby actualizing concrete, shared material-discursive environments. This takes up the basic insight that any action is embedded in three heuristically different "environments" — normative orders, social dynamics and material conditions (Parsons, 1937) where actors are confronted with the challenge to interactively with others interpret, understand, and strategize in concrete situations to solve practical problems (Alexander, 1988).

The concept of patterned practices in domain-specific material-discursive environments stresses that actors participate in particular ways of doing things in these joint activities, for example praying regularly in particular ways (Schjodt, Stodkilde-Jorgensen, Geertz, & Roepstorff, 2008; Schjoedt, Stodkilde-Jorgensen, Geertz, & Roepstorff, 2009) or spending hours listening to and producing music (Vuust, Ostergaard, Pallesen, Bailey, & Roepstorff, 2009; Vuust & Roepstorff, 2008). A patterned practice approach assumes that regular, patterned activities shape the human mind and body through embodiment and internalization. Vice versa, enacting practices shape and re-shape norms, processes, institutions, and forms of sociality. Culture gets under the skin and skull if you will, and it is remade gradually through collective instances of actualization (Beck, 2007; Niewöhner, Kehl, & Beck, 2008).

The overarching claim of this paper is thus: Patterns of practice at the level of social interaction correlate in relevant ways with neural and psychophysical patterns, and in the same way that social practice forms patterns, large-scale brain signals as well as other psychophysical signals generated during particular task performances can be analyzed to expose significant patterning (Kahnt, Heinzle, Park, & Haynes, 2010). This leads to a specific approach: employ social patterns of practice instead of an abstract notion of culture to inform the experimental design and participant recruitment.

Conclusion

If acquiring knowledge of the social-indexical value of phonetic variability is a routine part of the phonological acquisition, then a further hypothesis arising from the exemplar-based approach is that awareness of some types of indexical knowledge could emerge more readily than others. Biologically-conditioned phonetic variation is consistent, fairly discrete and pervades many lexical items, which should lead to early awareness of male/female/child differences. Once these differences have been identified and their indexical values learned it is a reasonably short step to identifying those socially-constructed categories for which the linguistic cues overlap those of biologically-determined categories.

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