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Phonetics, phonology and social meaning

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Linguistic variation has consistently been found to have social meaning in its association with the status and stance of speakers in the context of interaction. This indexical function of variation can contribute to the advancement of ongoing linguistic change. Style shifting in individual sociolinguistic interviews is an indirect indication of social meaning, but the clearest demonstrations are found in studies of speakers in a range of social contexts. We explore and clarify the nature of social meaning in variation, and its relation to linguistic change. Phonological variables are most readily adapted to convey social meaning by their frequency, flexibility and freedom from referential functions. After providing several kinds of evidence of social meaning in phonological variation, we argue that meaning accrues specifically to concrete sounds – to phonetic elements – and not to the phonological structures in which those sounds participate. Mergers, near mergers, splits, chain shifts and parallel shifts are not generally objects of social perception, conscious or unconscious, and are motivated by more abstract principles of change.

On trouve régulièrement que la variation linguistique a une signification sociale, ce qui est fondée dans son association avec le groupe sociale et la position du locuteur dans le contexte de l'interaction. Cette fonction indexicale de la variation peut contribuer à l'avancement des changements linguistiques. La variation stylistique dans les interviews sociolinguistiques est une indication indirecte de la signification sociale, mais les manifestations les plus claires se trouvent dans les études de locuteurs dans une variété de contextes sociaux. On explore et clarifie la nature de la signification sociale, et sa relation avec les changements linguistiques. Les variables phonologiques sont les mieux adaptées à communiquer la signification sociale grâce à leur fréquence, leur flexibilité et leur manque de fonctions référentielles. Le porteur typique de signification sociale est l'usage d'un allophone donné dans son contexte phonémique; des structures phonologiques plus complexes sont moins disponibles à servir cette fonction. On suggère que ce sont les sons eux-mêmes – les éléments phonétiques – et pas les structures phonologiques qui portent la signification sociale. Les confusions, les quasi-confusions, les scissions, les changements en chaîne et les changements parallèles ne sont pas normalement des objets de perception sociale, soit consciente ou inconsciente, car ils sont motivés par des principes de changement plus abstraits. [French]

KEYWORDS: Variation, social meaning, phonological structure, sound change

FOREWORD

The authors of this article approach the study of social meaning from a joint background in the approach to linguistic variation as 'orderly heterogeneity,' reflecting the influence of Uriel Weinreich at Columbia University in the 1960s. We both spent our youth immersed in the sociolinguistic currents of New Jersey's Bergen County, where we learned early that the exponents of social class were realized as distance from local phonology, and where we experienced similar day-to-day interaction with socially distinctive and class-related character types. In the years that followed, Labov has studied the larger structure of variation with a focus on linguistic change, as evidenced by studies of random samples, neighborhoods, and small group interaction. Eckert's focus, based on long-term ethnographic studies, has been on meaning as evidenced in the use of a wide range of variables in the stylistic construction of socially located personae. The variables we consider in this paper are those that coincide in our work – variables that have been found to show both clear macro-social patterns and stylistic sensitivity to interpersonal context, particularly sound changes in progress. And while the authors continue to debate issues of awareness and agency in this process, our differences are independent of the observations that follow.

INTRODUCTION

Over the past six decades, sociolinguistic research has correlated linguistic variation with many aspects of social behavior: characteristics of the speakers, of interaction with the listeners, and with the speech situation more generally. This systematic social variability of form is generally said to have social meaning, hence to be available for social expression. The first quantitative study of a sound change (Labov 1963) showed that locally-constructed social meaning, furthermore, can serve as motivation for sound change. With the accumulation of survey, ethnographic, and case-study evidence, and with the increasing diversity and sophistication of experimental and statistical methods, the study of sociolinguistic variation is engaging ever more deeply with social meaning. Our aim in this paper is to explore and clarify the notion of social meaning in variation, its role in phonological change, and its locus in the phonological system. We argue that social meaning accrues to concrete sounds – to phonetic elements – and not to the phonological structures in which those sounds participate.

For the purposes of this discussion, we define meaning as the conventional association of distinctions in the world with distinctions in linguistic form. In other words, variables are signs. Peirce (1931–1935) distinguishes three kinds of signs on the basis of the relation between form and content: *symbols* by pure convention, *icons* by resemblance, and *indexes* by association in fact. The indexical realm is based in contiguity within the speech situation, as form 'points to' the immediate context from the speaker's perspective. While this pointing may serve a referential function, as in the case of spatial and temporal deictics, sociolinguistic variables have no referential function.[1] In the case of morpho-syntactic variables (e.g. negative concord), the presence of negation is referential, but variation in the number of negative particles is used as an intensifier; that is, the degree of investment the speaker is making for this proposition (Labov 1984b). In this case, variation imbues a referential sign with additional, indexical, meaning. In the case of some lexico-pragmatic variables, such as the use of *totally* with non-gradable predicates, the semantics of the sign may actually contribute to its indexical potential (Acton and Potts 2014; Beltrama 2016). In this paper, we deal exclusively with phonological variation, whose indexicality is entirely independent of reference. The double articulation of language (Hockett 1960; Martinet 1968), in which phonology provides meaningless elements to combine to yield meaningful elements, leaves phonological units free to register distinctions in the collective co-existence that is the social world.

We commonly refer to the meaning of variation as 'social meaning.' But in an important sense, all meaning is social inasmuch as it is constructed for the purposes of, and in the course of, social exchange. The distinction between *child* and *adult* is based on conventional notions of what makes someone a child or an adult – notions based in shared understandings of age and development.[2] Even the distinction between a table and a bench is social inasmuch as it is based in conventional understandings of the differential characteristics and uses of these objects. These conventions will change over time as our needs, activities etc. affect the distinctions we live by.

While all symbols are social in this sense that they are socially constructed, the meaning of variation is purely social. It has no reference – it does nothing but index something about the speaker as a social actor in the speech situation. It is this indexical association that we refer to when we speak of social meaning. There can be variation without social meaning – a difference in form becomes a sign through a process of enregisterment, as it becomes conventionally associated with some social distinction. The term 'enregisterment,' as introduced by Agha (2003) in the context of the emergence of RP, is most commonly associated with a higher level sign – a register (e.g. Johnstone, Andrus and Danielson 2006). Variables become enregistered in the give and take of discourse, as hearers construe a relation between form and some aspect of the speaker in the situation, such as stance (Kiesling 2005) or qualities (Eckert 2016). Macro-social correlations (i.e. class,

age, gender, ethnicity, geography) are not in themselves indications of social meaning, inasmuch as it is possible for such correlations to be well below the level of social awareness (see, e.g., Tamminga 2016). But they do indicate a probability that such meaning is at work at the local level. For example, gender correlations on a macro-social scale point to the culturally central male-female distinction, which in turn abstracts over a range of globally constrained but locally constructed practices and potentials. Thus, correlation of a variable with a gender category is likely to index that category only indirectly (Ochs 1991), in virtue of some immediately salient quality that is commonly associated with that gender category, such as refinement, toughness, emotionality or trendiness. It is at the level of salient qualities that variation is put to use and takes on meaning, and one could even say that the use of a variable to index a quality plays a role in making that quality salient.

The meaning of a variable emerges not simply in the speaker's production, but in the hearer's interpretation in the moment. Working with the highly enregistered and robustly studied (ING) variable, Kathryn Campbell-Kibler has shown that hearers do not interpret the coronal and dorsal variants of (ING) in the same way on every hearing. Rather, their interpretation in the moment is a function of their mood and of their social perception of the speaker (Campbell-Kibler 2008). It is in this process of interpretation that variation takes on meaning, and that this meaning can change.

Like reference, the indexicality of a variable emerges in use and can change over time, along with changes in the social distinctions it picks out. The potential for continual change in meaning is specifically related to variation in Silverstein's (2003) notion of orders of indexicality, through which a variable can progress from indexing a social position (e.g. with a region, a class position, an ethnic group) to indexing some quality apparently associated with the people occupying that social position. Indexical order primarily concerns change in social meaning. It is related to levels of awareness, but in a different way from the indicator, marker, stereotype taxonomy which is based on the behavior of speakers in the interview context (Labov 1971). Both approaches register theoretical points in a continuum of awareness through which variables may progress as they become increasingly enregistered (Agha 2003). We become aware of indexical orders as variables achieve marker status, but how much awareness is required for a speaker to exercise agency in this process remains an empirical question.

This report will begin by reviewing the evidence for the social meaning of phonological variation, before considering the extent of its intersection with linguistic structure and its role as a driving force in changes within that structure. It will appear that socially meaningful variation is not equally distributed over all phases of language structure, and that the more abstract categories and processes may not be socially evaluated by users of the language. We will explore the most characteristic and vigorous domains of

social evaluation, yet show how the impact of social meaning can reach beyond its normal limits in the most favorable situations.

FIELDS OF EVIDENCE FOR SOCIAL MEANING

Since meaning is constructed in the interaction between speaker and hearer, evidence of social meaning ultimately must be sought by bringing together data on production and perception. Over the years, work on perception from the earliest matched guise tests (Lambert et al. 1960) has shown that hearers use phonetic cues to place speakers in the social order, and that those perceived placements evoke a range of social evaluations. When these placements correspond to production facts (e.g. Labov 2006 [1966]), there is potential for social meaning. But if the evaluations associated with those placements are evidence of social meaning, they must be reflected in speakers' situated use of the variation. Because the meanings of variables are not fixed but constitute something like an indexical field (Eckert 2008a), the study of perception must find a way to get at situated meaning. More recent work on perception (e.g. Campbell-Kibler 2008; Podesva et al. 2015) has shown that hearers perceive meanings as a function of their perceptions of the context of utterance. This work is extremely promising, but in its early stages. In what follows, we will focus on evidence of social meaning in production only.

We take as evidence of social meaning a patterning of variation along some aspect of differentiation in the local social context. Thus, we find social meaning where variables shift significantly across local social settings and situations, across different communities of practice, and in the speech of individuals who stand out as exceptional or prototypical.

The same individual in varying social settings

The original studies of the speech community focused on random samples of single speakers, each in a similar social setting – the sociolinguistic interview. In the interview, the degree of formality is deliberately varied, in order to vary the amount of attention the interviewee pays to his or her speech (Labov 1984a). The resulting shift of stylistically sensitive variables gives an indirect indication of how they may operate in community interaction. In actual practice, formality will be only one of a variety of factors giving rise to variability, as will attention to speech. A direct view of how speakers change their variable resources from one social context to another has been obtained in several studies in which unobtrusive recordings were made of a given individual in changing social settings.

Coupland (1980) recorded the speech of a travel agent in Cardiff over five days at work, talking with friends and work-associates, clients and tour operators, in person and over the telephone. He examined the shifts of five phonological variables with the status of Cardiff markers across these social

contexts, and found that while the topic of conversation was not important in style shifting, channel, friendship status and work relations were. The speaker's use of the Cardiff variants decreased from casual chat to informal work-related conversation to talk with clients, and finally to doing business on the telephone. Coupland also noted that these variables did not all vary in the same way – that the more highly stigmatized stereotypes (h-dropping, intervocalic /t/ flapping, and word-final cluster reduction) appeared regularly in informal speech with her office mates, but quite rarely with clients or on the phone, while the remaining variables showed a more gradual variability across all situations.

In the early stages of the study of Linguistic Change and Variation (henceforward LCV) in Philadelphia (Labov 1980, 2001), Arvilla Payne recorded 'Carol Meyers' (CM), a 48-year-old Philadelphia woman whom she knew intimately, over a two-day period. These recordings took place in three social contexts: in the travel agency where Carol worked (*Office:O*); at dinner with CM's family (*Home:H*); and at a weekly bridge session, featuring lively interaction among four close female friends (*Game:G*). Hindle (1979) analyzed the shifts of CM's vowel system across these three social contexts, using the LPC analyses then available to the LCV project. The FAVE program (Rosenfelder et al. 2011) has allowed us to complete the analysis for 18,352 vowels.[3] Figure 1, publishing this reanalysis for the first time, shows the values of normalized F1 and F2 in the three social contexts for the back upgliding vowels of Philadelphia.

- (aw): the raising of /aw/ (*down*, *out*)
- (owC): the fronting of /ow/ in non-final position (*boat*, *road*, *lower*)
- (owF): the fronting of /ow/ in final position (*go*, *snow*)
- (Tuw): the fronting of /uw/ after coronals (*two*, *noon*)
- (Kuw): the fronting of /uw/ after non-coronals (*move*, *who*)

Table 1 shows the results of regression analysis of the effect of social setting on the fronting of these vowels with stress and duration taken into account. This single speaker's contextual shifting takes place against the background of a community pattern in apparent time, where all Vw vowels are fronting and /aw/ is raising (Labov 2001: Ch. 5). For each vowel, the Game context is at the forefront of the change in progress and the Home context is the most conservative. We also find that for these Philadelphia shifts, as for most sound changes, women are in the lead (Labov 1990, 2001). Thus, Hindle (1979: 142) notes that CM's pronunciation of these vowels in the Game context contributes to a particular female and perhaps youthful persona that she assumes in intimate and lively interaction with peers.

Before proceeding, it can be noted that an alternative interpretation of these data looks to the character of CM's behavior in terms of the phonetic gestures involved. In four vowels of Figure 1, the Game setting is shifted further front. Gordon and Heath (1998) have argued that the frequency code (Ohala 1994),

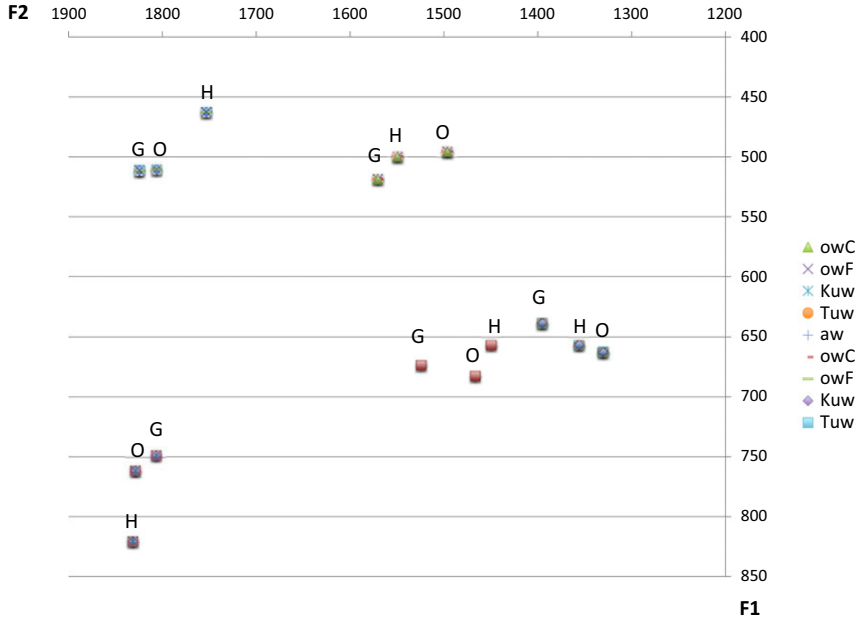

Figure 1: Mean values of five vowels of Carol Meyers in three social settings: Bridge Game (G); Home (H); Office (O).

Table 1: Mixed level analysis of effect of social setting on realization of back upgliding allophones of Carol Meyers

	Vowel			
Social setting	**/owF/**	**/owC/**	**/uwC/**	**/aw/**
Dependent variable	F2	F2	F2	F1
Bridge Game	66	45	87	-28
Travel agency	4	1	3	9
Dinner at home	-70	-43	-84	18
n	490	934	115	422
p	.0002	0004	.0002	.0006

Not significant: stress, duration.

by which high and low acoustic frequency are associated with small and large size respectively, leads female speakers to lead in vowel fronting. If this is so, one would expect it to hold regardless of the direction of the change. Thus, we might have expected CM to front (aw) in the Game setting, but she instead emphasizes the raising component of the change. We note also that the

centralization of (ay) is male-dominated in one community (Philadelphia, Labov 1990) and female-dominated in another (Detroit, Eckert 2000). This is not to say that the frequency code plays no role in variation (see below), but it is unlikely to explain gender on its own. If the frequency code is at work in the construction of gender, it is based on an embodied experience of relative smallness – or of desired smallness. And while smallness plays a role in hegemonic ideologies of femininity, it does not figure in all feminine expression (e.g. Mendoza-Denton 1996, 2008). Thus, one can expect the frequency code to actually differentiate among women.

A parallel investigation of the effect of social setting on speech style is reported in Podesva (2011), comparing the speech of Regan, a young Asian American gay man, in three settings that vary along dimensions similar to the CM study: a meeting with his supervisor at work; dinner with a close friend; and 'Boys' Night Out,' a weekly gathering of friends for dinner, drinks, and dancing. Podesva emphasizes that Regan's linguistic style in the Night Out situation is part of a 'partier' persona, quite possibly analogous to CM's card game persona.

Podesva analyzed Regan's vowels in these three settings in relation to the California Vowel Shift (CVS), one of the objects of study by the Voices of California group.[4]

- incrementation of the nasal system, increasing the distance between short-a before nasals (BAN) and elsewhere (BAT) (Eckert 2008b);
- a chain shift involving the low back merger of BOT and BOUGHT, backing of /æ/ (BAT) and lowering and backing of /e/ (BET) (D'Onofrio 2015; D'Onofrio et al. in press);
- the parallel fronting of /ow/ after coronals (TOE) and non-coronals (BOAT) and of /uw/ after coronals (TOO) and non-coronals (BOOT) (Eckert 2011b; Podesva et al. 2015).

Figure 2 shows mean values of F1 and F2 for eight vowels in the three social settings. Three of the CVS shifts are more advanced in the Night Out setting. It is evident that BAN is much more different from BAT in the Night Out than in the other settings, and the shifts of BOAT and BOOT and are most fronted in that setting[5] (thus closing the gap between vowels with non-coronal onsets and the TOO, TOE vowels with coronal onsets).

At this point we must note the aspect of Figure 2 that is parallel to the gestural interpretation of Figure 1, more general than the configuration of specific vowels. For all eight of Regan's vowels, F1 is clearly highest for the Night Out setting, indicating greater sonority. For the high and mid vowels, F1 values for the Friend setting are intermediate between Night Out and Supervisor. Podesva also observes Regan's use of falsetto intonation: frequent in Night Out, intermediate in Friend and rare in Supervisor. Thus, we observe global shifts of articulation in the construction of a social persona,

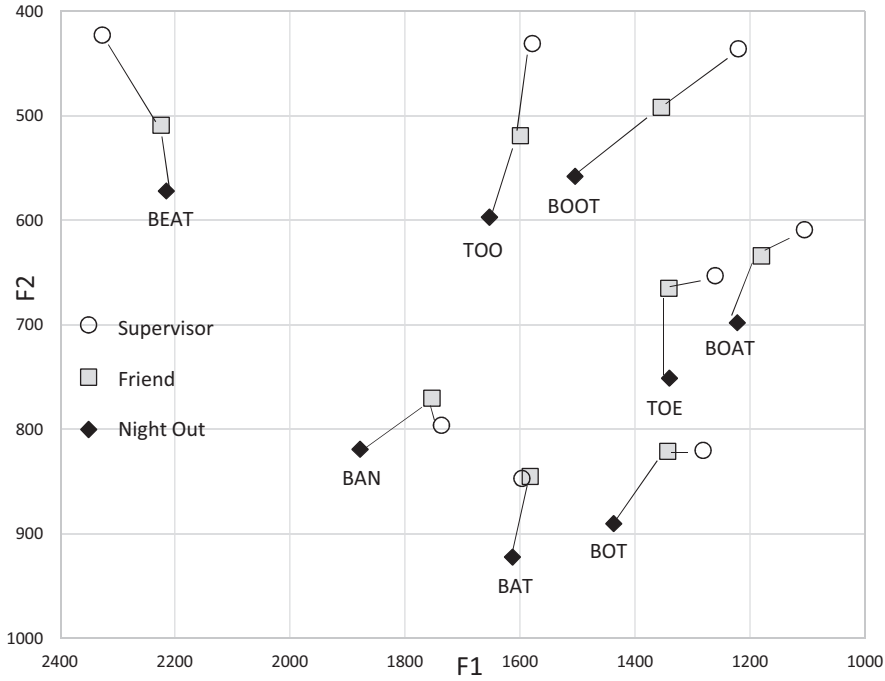

Figure 2: Mean F1 and F2 values for Regan in three social settings (based on the Appendix to Podesva 2011)

while reflections of linguistic change in progress are embedded in these shifts in the relative positions of particular vowels.

Situations can also differ in affective key. The merged low back vowel in California is in the process of backing and raising as part of the California Shift (D'Onofrio et al. in press), commonly replaced by /æ/ as the lowest vowel in the system. Backed variants of this vowel emerge frequently in negative expressive uses of particular lexical items and perhaps particularly exclamatives (e.g. *gosh*, *oh my God*). But it emerges as well in longer affective stretches. Eckert (2011a) compared the realization of this vowel in the speech of a preadolescent girl, 'Colette,' in two conversations with different affective keys: one in which Colette presented herself as a happy-go-lucky girl, talking about the things she liked to do, and one in which she complained at some length about what jerks boys are. Her merged /o~oh/ vowel was significantly higher and further back (F1 $p<.001$; F2 $p<.025$) in the negative conversation than in the positive one, as was the nucleus of (ay) (F1 $p<.025$; F2 $p<.001$). Affect in and of itself is eminently social, but in addition, it is clear that Colette

considers her negative affect in this conversation to be indicative of her emerging status as a teenager – as having boys to complain about.

The affective use of vowel fronting and backing conforms to the frequency code mentioned above, and corresponds closely to Silverstein's (1994) finding in Wasco Wishram of an association between positive and negative judgment and vowel fronting and backing. This raises broader issues of phonetic processes and even embodiment, which we return to below.

The studies discussed above each focus on a single individual, but they bear crucially upon the social patterns that emerge in the larger community studies. As mentioned in the introduction, the demographic patterns found in large survey studies abstract over a variety of adaptations of semiotic resources to specific situations. The individual's use of variation animates distinctions found in the patterns of increasingly broader communities. Intermediate between individuals such as those discussed above and the macro-social structure are local social networks and communities of practice.

Social networks and communities of practice

Linguistic change flows through networks of contacts between and among individuals. These contacts cluster, and they cluster differently depending on the nature of the tie on which the network is based. Each individual's social network will include a variety of clusters – a friendship group, a neighborhood, an office, a garage band. These clusters arise in response to the conditions of life encountered jointly in institutions, regions, social classes, etc., and constitute communities of practice (Lave and Wenger 1991; Eckert and McConnell-Ginet 1992). The network outlines individual contacts, which underlie the mechanics of spread. But while the mechanism of some innovations may be mechanical, most innovations are adopted in the service of the joint meaning-making enterprise that constitutes practice, and that is central to the construction of communities of practice. The situational shifting discussed in the previous section in some cases commonly involves individuals' movement among multiple communities of practice. In this section, we will take up the community of practice as a locus of social meaning.

In an ethnographic study in the all-white high schools of the Detroit suburbs, Eckert (2000) found a hegemonic opposition between two class-based communities of practice – the Jocks, a middle-class, institution-based suburban culture; and the Burnouts, a working-class, neighborhood-based and urban-oriented one. While the Jocks avoid the urban area, the Burnouts frequent the parks and strip malls of the urban periphery, and seek out contact with their more urban peers, whose toughness and street smarts they admire. Comparisons of schools across the suburban area (Eckert 2000) show that three sound changes – the backing of (ʌ) and (e) and the backing and raising of the nucleus of (ay) – are spreading outwards from the urban periphery, giving them the potential to index urban status and the qualities that go with that

status.[6] As shown in Figure 3, the Burnouts' urban orientation shows up in their lead in the use of all three of these changes.

While the correlation of the urban variants with these two communities of practice is evidence of their indexical value, further evidence emerges when we look to the more general school population, including those who affiliate with neither the Jocks nor the Burnouts, and who commonly refer to themselves as 'In-Betweens.' People across the school population who engage in the practice of urban cruising (driving repeatedly along designated urban strips) use the urban variants significantly more than those who do not (Figure 4).

In their ethnographic work on Ocracoke Island, Wolfram and Schilling Estes (1995) identified a community of practice in the 'Poker Players,' a group of men who engaged in a regular poker game several times a week. They also socialized in other contexts, worked in marine-related jobs, and shared strong ideologies about maintaining the traditional island life in the face of tourism and migration from the mainland. These men stood out significantly from their peers in their retention of the conservative mid back [ɔy] pronunciation of (ay), as stereotyped in the designation of islanders as *hoi toiders* (high tiders). This case is strikingly similar to Labov's (1963) findings on Martha's Vineyard, where the use of the conservative central nucleus of (ay) and (aw) indexed an

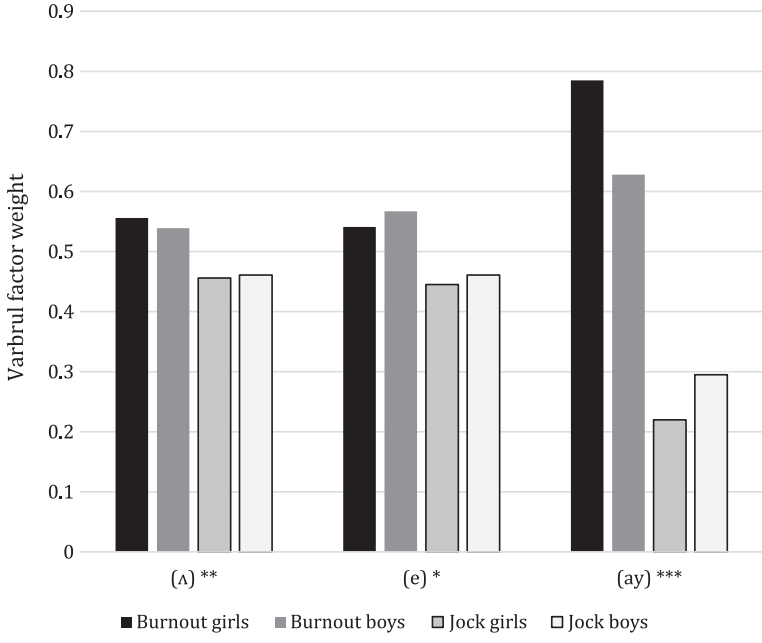

Figure 3: Urban variables in Belten High by gender and community of practice (p values: ****< .0001; *** < .001; **<.01; * < .05)

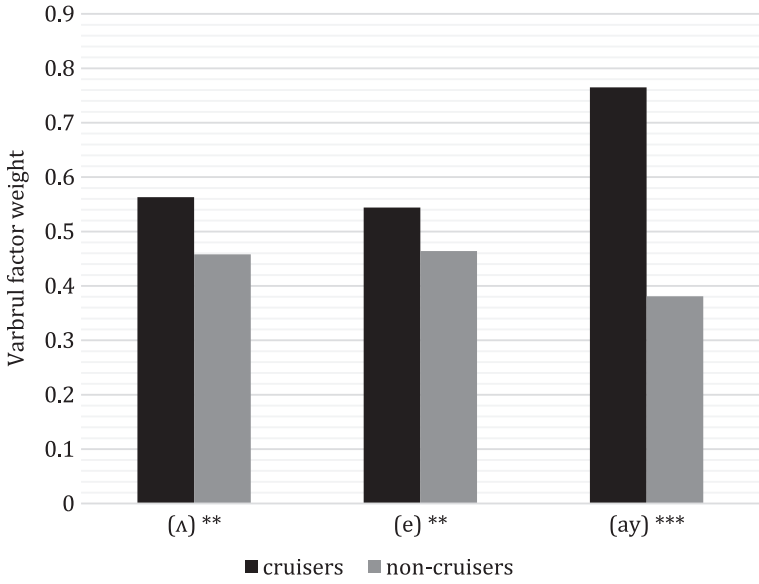

Figure 4: Correlation of urban variables with cruising in the general Belten High population (p values: ****< .0001; *** < .001; **<.01; * < .05)

emerging local ideological alignment against the threat of mainland economic incursion. There, also, it was those engaged in the traditional local fishing economy who were most opposed to this incursion and who led in the reversal of the lowering. Thus, the original centralized form, a first order index of island-born status, was recruited to create a new ('second order') index of island-based ideology.

Prototypical and exceptional individuals

If variables had no social meaning, we would expect speakers to conform linguistically to those around them, with differences between individuals predictable purely on the basis of density of contact. We find, though, that some speakers stand out from their linguistic surroundings as exceptional in a way that indicates a meaningful use of variables.

Nathan B. A striking linguistic standout is Nathan B., discussed in Labov (2006 [1966]: 157–161). An upper-middle-class and highly educated man from New York's Lower East Side, Nathan B. stood out starkly from the other speakers in his socio-economic stratum, with a use of stopped variants of (th) and (dh) that matched that of lower or working-class speakers. Whatever the cause of the pattern, it had clear social meaning for those around him, for it

was sufficient to bar him from an academic position. He was told that continuing at the university would be contingent on improving his speech – something he was unwilling or unable to do.

Variation works in an analog fashion. The augmentation of a variable can intensify its social meaning. This intensification can be achieved through increased frequency of use, and through phonetic intensification as well. In the case of sound change, it can be an exaggerated movement in the direction of variation – or away from it. By intensifying her use of female-led sound changes in her bridge game with 'the girls,' Carol Meyers (Figure 1) achieved heightened expressivity appropriate to that particular context. Some speakers are particularly prone to stylizing more generally, and consequently become outliers in the use of variables. These speakers, whom we've referred to as 'linguistic icons,' (e.g. Eckert 2000) have been pinpointed as leaders of linguistic change.

Celeste S. The study of linguistic change and variation in Philadelphia focused on ten socially stratified neighborhoods. Celeste S. was a central figure in Clark Street, studied by Anne Bower, who was introduced to leading members of the neighborhood social networks at the weekly coffee hour at Celeste's home. Social network analysis showed Celeste to have the highest index of interaction within the neighborhood (Labov 2001: Ch. 12). She was also the most advanced in the raising and fronting of (eyC) in *made, pain* and (aw) in *out, down*. Celeste was not only a prototypical exponent of Philadelphia phonology; she exemplified the social ethos of the working-class community in her insistence on correcting violations of the social order. This often led to violations of correct and polite behavior on her part, echoing another aspect of her linguistic pattern, a relatively high use of stops in the (dh) variable (but not as high as that of Nathan B.).

Celeste's life pattern supports the general conclusion of the Philadelphia study that the leaders of linguistic change were among the highest status persons in their local neighborhoods. Her position as a social leader was doubtless enhanced by her moral strength and powerful stances. These characteristics show a striking parallel with Haeri's description of the leaders of linguistic change in Cairene Arabic, women who refuse to conform to the conventions of proper behavior and denounce those conventions when they recognize them as unjust (Haeri 1996; Labov 2001: 409). In this respect, we can see some connection with the adolescent patterns of rebellion from established norms in the next case to be considered.

The Burned-out Burnouts. The Jocks and Burnouts are distinguished by multiple ethnographic means, from their membership in distinct clusters in the school's social network to their practices to what they even call themselves. They mark the two extremes in the school's culture. But they are, nonetheless, grouped speakers, and just as the rest of the school's population falls between

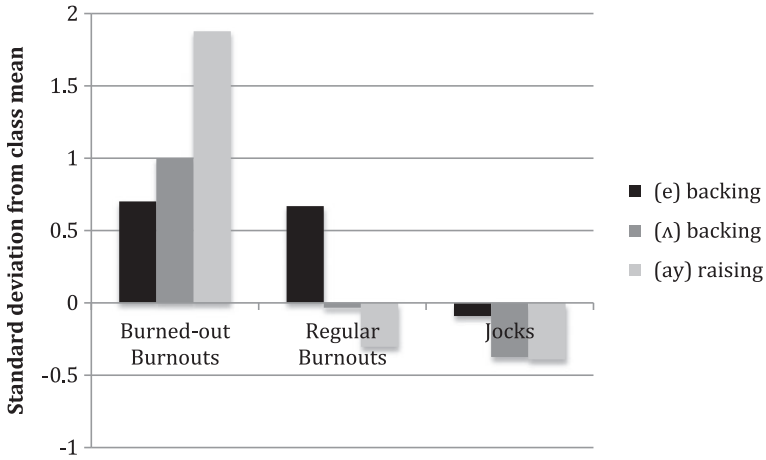

Figure 5: Burned-out Burnouts' use of urban variables

them, there are differences within the two polar categories. Most particularly, the Burnout girls constitute two distinct network clusters. The majority of the Burnout girls, commonly referred to as the 'Regular Burnouts,' identify as Burnouts primarily on the basis of ideologies related to friendship and school participation, and they are connected loosely to the rest of the school population. There is also a small cluster of girls commonly referred to as the 'Burned-out Burnouts.' These girls are at the edge of the Burnout cluster, connected not to Jocks or In-Betweens, but to people outside the school. They pride themselves on being the 'biggest Burnouts,' on being 'wilder,' and on being quite separate from the other Burnouts. The Burned-out Burnouts lead the entire school, including the other Burnouts, in their use of the urban variants of (ay), (e) and (ʌ). Since there is no similar distinction among male Burnouts, Figure 5 shows the relation of the Burned-out Burnouts to other girls – Regular Burnouts and Jocks. One of the Burned-out Burnouts, Judy, stands out in the school as a clear stylistic icon as THE most Burned-out Burnout. She leads all speakers in all categories in the raising of (ay) and the backing of (ʌ).

WHAT KINDS OF PHONOLOGICAL STRUCTURES TAKE ON SOCIAL MEANING?

We then approach the central question of this report: what types of phonological structures carry social meaning? In the case studies considered so far, social meaning accrues to variables that are composed of alternate realizations of particular phonological objects. But the nature of linguistic objects is to combine with other objects in hierarchical levels of abstract

relations. This raises the issue of the level of abstraction at which linguistic variation is identified and social meaning assigned.

First, it may be pointed out that the socially meaningful variants we have been discussing are not the physical sounds that are subject to measurement. People frequently say, in rejecting a certain social variant, that it 'sounds so ugly.' However, it is not the sound that is so evaluated, but rather the use of that sound as the particular allophone representing a certain phoneme. Thus, the use of high ingliding [iːə] in *man* or *bad* is stigmatized in the Middle Atlantic States, but no one reacts in the same way to the use of the same sound in *idea*. The use of a medial voiced flap in *brother* as [brʌɾɚ] is widely rejected as uneducated and vulgar speech, but the same sound in *utter* is accepted as normal or as a regional variant. In other words, social meaning is assigned to sounds at a first level of abstraction from concrete production. The variables we have considered so far are changes in the range and frequency of allophones of a given phoneme.

We have seen that such sound changes take on social meaning as they move through communities. In English, continuous variation in the phonetic realization of vowel allophones is the most heavily employed resource for the construction of social meaning. Having no referential function, a phonological variable is free to take on purely contextual meaning as it ranges within the limits set by neighboring phonemes. Furthermore, the high frequency of occurrence of most phonological variables in discourse offers a potential for the construction of social meaning through momentary situated use.

While phonological variables seem well designed to take on social meaning, the same may not be true for more abstract structures, inferred from relations among phonological entities. For these, the evidence for the absence or presence of social meaning needs to be examined separately. Variables take on social meaning in the fast give and take of interaction, as people associate what they articulate and what they hear with aspects of the context. It follows that social meaning attaches to forms close to the surface, and not to the structural relations behind those forms. While these structural relations may in some cases achieve meta-discursive status – usually in the very late stages of change – they do not play a role in the actual use of variables. In this section, we consider a variety of structural relations that play an important role in sound change, beginning with the simplest structural change: the opposition of two distinct phonemes to a single merged one.

Mergers

Major factors differentiating North American dialects have to do with the inventory of phonological categories. The records of dialect geography show some sixteen mergers in North America (Kurath and McDavid 1961; Labov, Ash and Boberg 2006) – all but one are conditioned mergers, and all but one concern vowels:

- The merger of /hw/ and /w/ in *which* and *witch*
- The merger of /ohr/ and /ɔhr/ in *four* and *for*
- The merger of /iw/ and /uw/ in *dew* and *do*
- The merger of /eyr/ and /er/ in *Mary* and *merry*
- The merger of /er/ and /ær/ in *merry* and *marry*
- The merger of /iyr/ and /eyr/ in *fear* and *fair*
- The merger of /iyrV/ and /irV/ in *nearer* and *mirror*
- The merger of /o/ and /oh/ in *cot* and *caught*
- The merger of /uwr/ and /owr/ in *moor* and *more*
- The merger of /in/ and /en/ in *pin* and *pen*
- The merger of /iyl/ and /il/ in *feel* and *fill*
- The merger of /uwl/ and /ul/ in *fool* and *full*
- The merger of /owl/ and /ʌl/ in *goal* and *gull*
- The merger of /ahr/ and /ohr/ in *far* and *for*
- The merger of /owl/ and /ul/ in *pole* and *pull*
- The merger of /iyg/ and /ig/ in *big* and *league*
- The merger of /æg/ and /eyg/ in *haggle* and *Hegel*

Evidence for the presence or absence of a merger is quite different from the quantitative measures of the stream of speech we have been considering so far. Mergers are detected by paratactic examination of the phonemic inventory, most commonly by metalinguistic discourse (minimal pairs or commutation tests). This does not form a part of ordinary discourse, even when it focuses on the use of language. In fact, these have one feature in common: their invisibility to social observation, comment or pressure. Whether we are dealing with nearly completed mergers like /w/ and /hw/ or incipient mergers like /*owl*/ and /*ʌl*/, the structural facts are equally immune to the acquisition of social meaning. This is not to say that the movement of either of the variants in the accomplishment of merger is socially meaningless. The merger of /i/ and /e/ before nasals in California, for example, is clearly associated with an 'outdoorsy' lifestyle (Geenberg 2014) and is often the subject of comment. But when social comment about a merger does arise, it focuses on the pronunciation of the more common of two words rather than on the absence of the distinction. Thus, the merger of /i/ and /e/ before nasals is more likely to be noted as 'He says *pin* for *pen*,' than 'He says *pin* and *pen* the same.'[7]

Mergers are sometimes perceived as reversals. The merger of /ahr/ and /ohr/ in Utah and St. Louis has been encapsulated in the stereotyped phrase, 'Put the harse in the born,' indicating some degree of social awareness (Labov, Yaeger and Steiner 1972: 267). The merger of *oil* and *Earl* in New York City is often reported by outsiders as 'He says *oil* for *Earl* and *Earl* for *oil*' (Labov 1972b: 316).

The social invisibility of mergers may be related to the kinds of paradigmatic inspection required to detect their presence or absence. But frequency, cited so often in our discussion of sociolinguistic variables, is also involved. Consider

the frequencies involved in the style shifting of final /ow/ by Carol Meyers in Figure 1. In the three hours and 27 minutes of the three recorded sessions, she used 10,389 measurable vowels. The fronting of final /ow/ in the Bridge Game is based on 137 tokens; the values for the Office on 203, and for Home, on 70. In the course of these three conversations, listeners were subjected to a stream of 400 of Carol Meyers' productions of *know*, *go*, *so*, *no*, etc., at approximately the rate of one a minute.

Let us suppose that we wanted to use the same data to detect the state of a potential merger in Carol Meyers' speech. One candidate is the merger of /uw/ and /ow/ before /r/. This is the result of a long-standing chain shift in Philadelphia, the backing of *car*, *mar*, *bar* towards *core*, *more*, *bore* and the raising of those allophones towards *Coor*, *moor*, *boor.* Since most speakers do not front the high back vowel /uw/ before /r/, this can lead to a merger of *Coor* and *core*, *moor* and *more*, *boor* and *bore.*

In the Carol Meyers data, the most common words in the /uwr/ class are *sure*, *you're* and *your.* These do occur in small numbers in the Bridge Game and Office, where we also find *brochure* and they are considerably fronted from the /owr/ class. But that fronting effect must be ascribed to the palatal onsets /y, ʃ/ unless we can contrast it with *shore* or *chore*, which are not present in the data set. The only hard evidence for a contrast between /uwr/ and /owr/ is seen in Figure 6, based on two pronunciations of *tour* in the Office as against /owr/ in *door*, *store* and *torn.* The contrast is marginal. But even if the listener came to a conclusion about the state of Carol Meyers' system in the Office, there is no basis for contrast with the other discourse settings. We conclude that low frequency and sparse distribution prevent most of these potential mergers from developing social meaning.

The one unconditioned merger in our list of mergers is an exception to the low frequency feature and may therefore show that mergers in general may have the potential for carrying social meaning. The low back merger of /o/ and

Figure 6: Data on /uwr/ and /owr/ in the Office recording of Carol Meyers

/oh/ in *cot* and *caught*, *hock* and *Hawk*, *Don* and *dawn*, etc., involves much higher frequencies of the vocabulary involved but also illustrates the social invisibility of a major language division. Merged areas now cover half of North America (eastern New England, western Pennsylvania, Canada, the West) and the process is advancing in every boundary area. But this ongoing process has never taken on the traits of a sociolinguistic variable in the way of style shifting, gender construction, or association with a community of practice.[8] Moreover, the literature has yet to record a single case of speakers being reprimanded, ridiculed, or corrected for their failure to distinguish *cot* from *caught*, *don* from *dawn*. Rather, social meaning attaches to the individual shifts that bring about the merger.[9]

The evidence for the absence of social significance of mergers is necessarily negative but it is extensive (see Labov 1994: 343–353). We have seen that the actual events that identify mergers – misunderstandings where one word class is wrongly identified as another – are of too low a frequency to play a part in the exchange of social meanings in daily interaction. We find evidence for this in a collection of 923 misunderstandings in everyday life recorded by linguistically trained observers (Labov 2010: Ch. 2). Of these, 53 can be specifically attributed to phonological mergers, and 27 to the low back merger. Many do not include strictly minimal pairs; one of the most common confusions is between *copy* and *coffee* (11 instances). The rounded allophone before /p/ of the merged dialect is mistaken for the back rounded /oh/ of the unmerged dialect, and the /p ~ f/ opposition does little to prevent the confusion.

> David Sankoff (Montreal): It's time to make the copies.
>
> William Labov (northern New Jersey): But I've already had my coffee.

This misunderstanding was repeated several times during the 1988 NWAV meeting in Montreal. Traveling in the West, Ohioan Kyle Gorman reports:

> I am currently at a cafe in Portland, OR. The barista, who was born and raised in Oregon, asked me if I'd like a 'copy [of] the receipt.' I heard 'coffee with the receipt,' though I recovered from the misunderstanding a second later.

What is startling about these reports is that they reflect repeated misunderstandings on the part of individuals who are fully informed of the linguistic situation, yet continue to process language as if they knew nothing about it. This is quite different from someone who reacts negatively to an advanced allophone [iːə] in *bad* but correctly identifies it with the phoneme /æ/.

One exceptional case of merger reversal has appeared in the sociolinguistic record: the unmerger of *fear* and *fair*, *beer* and *bare* in Charleston, South Carolina, a case that defies Garde's principle on the irreversibility of mergers. Baranowski (2007: Fig. 5.27) shows that the restoration of contrast follows an

s-shaped curve, decade by decade, without any social class differentiation. He also points out that this rare reversal is subject to some comment in the community. From an upper-class lawyer, John M.:

> When I was in the Navy, I would say I want a brew, in order to avoid the usual laughter and good-natured teasing I got about the way that I pronounced the word, and I tried to learn to say BEER [high vowel]. (Baranowski 2007: 236)

Such comments are as unusual as the reversal of the merger itself.[10]

While the realization of a phonological variable is a short (and frequent) event in a syntactic series of events, merger is a paratactic phenomenon whose location in time is not a particular event in the chain of speech. We pointed to the high frequency of phonological variables as a factor in their acquisition and transfer of social meaning. The listener's search for evidence for or against merger must extend over a considerable period of time given the rarity of the critical data cited above – minimal pairs in ambiguous contexts.

The spread of mergers

When a community shows a variable merger, one can expect that it will expand in a unidirectional manner at the expense of distinctions (Herzog's principle; Labov 1994: Part C). This holds true for all of the regional mergers studied in *The Atlas of North American English* (ANAE; Labov, Ash and Boberg 2006: Ch. 8, 9). This expansion is normally complete in a single generation (Herold 1990; Johnson 2007). Johnson attributes the expansion of the low back merger of *Don* and *dawn* in Seekonk to the in-migration of families from the Boston area, where the merger is complete. One might project a scenario in which the prestige of the great metropolis is associated with the merger. However, Yang (n.d.) calculates the likelihood of the merger being adopted by word frequency and vowel confusability of the two classes, with a minimum of 21.7 percent of the population using the merged system, and this figure corresponds closely to the percent of in-migrants in the schools studied by Johnson. In this case, no further contribution of social meaning is required.

Near mergers

The traditional evidence for phonemic contrast is provided by minimal pair tests, and this is expected to correspond to statistically significant differences in production as heard or measured. This agreement in production and perception is shown in Table 2 as cases 1 and 4. Cases 1 and 4 show the expected agreement of production and perception. Case 2, where speakers pronounce the pairs in the same way but judge them to be different is a common result of orthographic differences, and is of little linguistic interest. But case 3, where speakers make a difference that they cannot hear, was until

Table 2: The four possible outcomes of a minimal pair test

	Judgment	
Production	Same	Different
Same	1	2
Different	3	4

recently thought to be empty; for how could speakers learn to produce a difference that they cannot hear? But beginning in 1972, sociolinguistic studies of vowel systems found an increasing number of such *near-mergers*:

- r-less *source* vs. *sauce* in New York City (Labov, Yaeger and Steiner 1972);
- *fool* vs. *full* in Salt Lake City (Di Paolo and Faber 1990);
- palatalized Russian consonants (Diehm and Johnson 1997);
- voicing contrasts in German final obstruents (Dinnsen 1985);
- *ferry* vs. *furry* in Philadelphia (Labov, Karen and Miller 1991).

It should be clear that the 'same' judgments made in minimal pair tests do not represent an absence of perception so much as a suspension of the labeling function.[11]

From the point of view of our present inquiry, the near-mergers present the clearest case of the divergence between social meaning and linguistic structure. When we try to direct speakers' attention to the difference, they cannot find it. But it is not only the absence of the labeling function that removes these contrasts from social meaning. Every case found so far shows idiosyncratic social distributions. In the case of Philadelphia *ferry* vs. *furry*, about one third of the subjects showed a clear distinction, one third a complete merger, and one third the near-merger in question. This might be considered the opposite of enregisterment: let us say *deregisterment*.

Splits

Throughout the Mid-Atlantic States, the short-a word class undergoes a split into tense and lax forms which may be described by a lexically conditioned rule (Kiparsky 1995). These are if anything less visible than mergers. In both New York City (Trager 1930; Labov 2006 [1966]) and Philadelphia (Ferguson 1975; Labov 1989), such structural developments involve lexical and grammatical irregularities that in themselves carry no social meaning, do not vary with social situations, and are never the topic of comment in meta-discourse. Thus, the traditional Philadelphia pattern has:

- Tense *mad*, *bad*, *glad* but lax in *sad*, *brad*, *lad*, *cad*, *had* and all other words with /d/ codas.

- Tense *man*, *hand*, *ham*, *slam* but lax in the irregular verbs *ran*, *swam*, *began.*
- Tense *pan*, *pants*, *panning* but lax in open syllable words like *panel.*
- Tense *ask* but lax in the polysyllables *asterisk*, *aspirin.*
- Tense *aunt*, *ant*, *can't*, *[tin] can* but lax in the function words *and*, *am*, *[I] can.*

There is nothing here comparable to the social meaning of the lexical distribution of the British 'broad a' class, an essential feature of Received Pronunciation, which specifies /ah/ in *answer* but not in *cancer*, in *grass* but not in *lass.* The Philadelphia distributions are invisible to social observation, which focuses only on the height of the tense vowel rather than on the distribution of tense and lax.

Recently, a new system has arisen in competition with this, among a rather large population of young speakers oriented to higher education (in non-Catholic schools with special admission requirements; Labov et al. in press). This is the *nasal system*, rather similar to that found with increasing frequency in many parts of the U.S. It is easy to describe:

Tense all and only all vowels before nasal consonants.

But to shift from the traditional Philadelphia to the nasal system requires a number of opposing moves:

a. Tense /æ/ before intervocalic nasals (*Spanish, Miami, damage*).
b. Tense /æ/ before velar nasals (*bank, bang, hang*).
c. Tense /æ/ in function words with nasal codas (*can, am, an*).
d. Lax all other /æ/.

In tracing this development across the last two decades, we find that steps (a)–(d) occur simultaneously. It is not a step-by-step conversion that terminates in the nasal system but rather a single shift from traditional to nasal. The new nasal system is well defined in macro-social terms. It remains to be seen if its use fluctuates with changing social context in a way comparable to the linguistic variables in the studies of Carol Meyers and Regan, above.

Some lexical splits are triggered by the opacity of a phonological rule, the result of a separate following process. Thus, the Philadelphia raising of /ay/ before voiceless obstruents became opaque when intervocalic /t/ was voiced to a flap. Then *Snyder* and *tiger* were raised, joining *bike* and *right* (Fruehwald 2007). Though the raising has been referred to in recent popular videos of 'Philly Tawk' as *buyght* and *ruyght*, any public recognition is limited to the original core group of words with underlying voiceless consonants.

The origins of lexical splits are obscure but challenging. In Old English, short-a underwent a backing to short-o before nasals which was almost complete in the Durham region of England, except for Class III preterit strong verbs. The sole surviving members of this class are *ran*, *swam* and *began*, which are sole exceptions to the tensing of short-a before front nasals in Philadelphia.

Whatever factor has led to a similar partitioning of the short-a word class after a millennium is not likely to be an object of social perception.

Chain shifts

The obverse of a merger is a chain shift, which rotates two or more vowels in a way that preserves their capacity to signal referential meaning. This end result is not visible to the speakers involved in the rotation of the system: the chain shift as a whole is not an object of social perception.

The Northern Cities Shift is a set of five intimately related vowel shifts (Figure 7). It is one of the most complex configurations that have been recognized in the study of chain shifts, past and present. Labov traced the progress of the first four stages in a vast area from western New York State to the Great Lakes Region (Labov, Yaeger and Steiner 1972; Labov, Ash and Boberg 2006). The final link, the backing of /ʌ/, emerged in Eckert's study of Belten High in the suburbs of Detroit.[12] Our question is whether this complex phenomenon itself has social meaning.

Stages 4 and 5 (Figure 7), the backing of (ʌ) and (e), have been traced in the discussion of social meaning in Figures 3, 4 and 5. In the Detroit area, they are still spreading outwards from the urban periphery, while the older changes show less geographic differentiation. And while the older changes show only or primarily a gender difference with girls leading, these 'urban' changes show Burnouts leading with few gender differences.

This is evident in Figure 8 for the five stages of the Northern Cities Shift: the three black lines follow a completely different pattern from the two grey lines. The first two stages of the Northern Cities Shift are correlated primarily with gender, while the later three are associated primarily with the Jock/Burnout opposition. Yet it is also evident here that two adjacent components of a chain can share social meaning. The backing of (e) and (ʌ) in the Detroit suburbs co-vary, but neither of them shares social meaning with earlier stages of the shift

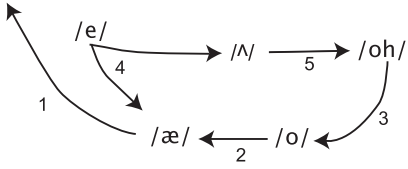

Figure 7: Five components of the Northern Cities Shift in the notation of Atlas of North American English. Numbers represent relative ordering in time.

1. Raising and fronting of short-a, (æ) in *bat*, *ban*, etc.
2. Fronting and unrounding of short-o, (o) in *bot*, *don*, etc.
3. Lowering and fronting of long open-o, (oh) in *bought*, *dawn*, etc.
4. Backing of short-e, (e) in *bet*, *bend*, etc.
5. Backing of short-u, (ʌ) in *but*, *bun*, etc.

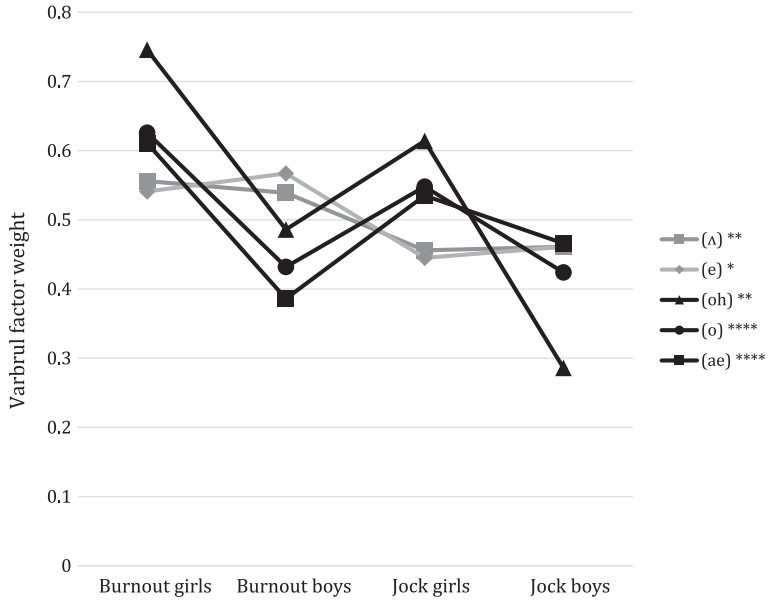

Figure 8: Northern Cities Shift in Belten High (p values: ****< .0001; *** < .001; **<.01; * < .05)

(e.g. the fronting of (ae) and (o)). The lowering and fronting of (oh), furthermore, combines the social constraints of the backing and fronting portions of the shift, led by both girls and Burnouts. The internal correlations of the Northern Cities Shift across the entire Northern region in the ANAE data confirm this view of its bipartite character. The two highest correlations among the vowel shifts of Figure 7 are found for:

- the fronting of /æ/ and the fronting of /o/ (.46); and
- the backing of /e/ and the backing of /ʌ/ (.42).

We conclude that it is possible that two adjacent members of a shift can share social meaning, but more complex chains do not seem to be objects of social perception.

Parallel shifts

Some sequences of vowel shifts may appear as the generalization of a single phonological process. Thus, the raising of *car* and the raising of *core* may be seen as a general raising of back vowels before /r/, rather than a structurally motivated sequence. And social meaning might be attributed to this general raising.

The social evaluation of parallel shifts appears in the series of sociolinguistic changes that took place in the Philadelphia Neighborhood Corpus following

the study of Carol Myers in Figure 1. The first two-thirds of the century showed a steady fronting of /aw, ow, uw/, with women in the lead (Labov, Rosenfelder and Fruehwald 2013: Fig. 14). Beginning with speakers born in 1950, this movement was reversed. This phenomenon was attributed to the general recession of Southern dialect features under the pressure of the negative social evaluation that has been documented in recent years (Preston 1996). The social motivation of the Philadelphia reversal is further indicated by the fact that it is confined to the female component of the Philadelphia Neighborhood Corpus: men preserve their lower values until they converge with women in the most recent period. Speakers with higher education are also seen to lead in this reversal of Vw.

A good part of the motivation for parallel shifts must be attributed to the general tendency of rules to expand their domain of application and so simplify their form. Thus, the generalization of the fronting of /uw/ to include /ow/ and /aw/ may be represented by

$$[+\text{high}] \text{ -> } [-\text{back}]/\_\_\_\_\_\text{w} \quad \rightarrow \quad [\quad] \text{ -> } [-\text{back}]/\_\_\_\_\_$$

The addition of social motivation to this generalizing process cannot easily be motivated by the social evaluation of structure at this level. It may seem more plausible to argue that the degree of fronting of the nuclei of /aw/, /ow/ and /uw/ are evaluated independently. This seems more likely in the light of the fact that, in Philadelphia, /uw/ after coronals is exempted from the general reversal. While the general fronting of /Vw/ vowels has long been characteristic of the South, the fronting of /uw/ after coronals is now found throughout North America (Labov, Ash and Boberg 2006: Ch. 12). Though Figure 1 and Table 1 show parallel response of Vw allophones to changes of social setting, there is no evidence that such parallel shift of allophones has a social meaning in addition to the general tendency of rules to expand their application and so be simplified.

The analysis of parallel shifts is not easily separated from the analysis of chain shifts. In place of the tendency towards maximal dispersion, stages 4 and 5 of the Northern Cities Shift may be considered as a generalized backing of short mid vowels. However, this argument cannot be applied to all five stages as a whole: there is no generalized feature adjustment that will produce this pattern. Following through, we can suggest that social meaning may be assigned to those portions of a chain shift that can be analyzed as a parallel shift but not to the maximal dispersion of vowels within a single subsystem. The question, then, is what are the limitations on the generalization of social meaning to more than one variable?

Eckert (2011b) found that the same local use was made of the fronting of /ow/ and /uw/ among Northern California preadolescents. And evidence of sound symbolism, as in the case of the frequency code discussed above, leads us to consider that some parallel shifts may be a generalization of a phonetic

gesture that in itself has some potential meaning. Eckert (2011a) found the frequency code at work in both (o) and (ay), indexing positive and negative affect among preadolescents in Northern California, with anecdotal evidence that it is also at work in /ow/. Silverstein (1994) found the frequency code at work also indexing affect in multiple vowels in Wasco Wishram as well. Eckert (2008a) has suggested that the use of stop release to express emphasis and even anger and impatience could be based in the iconization (Irvine and Gal 2000) of fortition – the association of fortis consonants with physical and affective force, and that the process of fortition could itself take on meaning, generalizing to other consonants. Sound symbolism would build on both acoustics and proprioception. Bourdieu (1990: 63) has described the habitus as 'society written into the body,' and equates class with articulatory setting, based in norms of how to use the mouth more generally (eating, laughing, etc.; Bourdieu 1977). This is a meta-view of articulatory setting that connects to general ideological dispositions having to do with social tension, which we may or may not be able to link to phonetics. But any such link would be likely to function above the level of the individual variable.

CONCLUSION

Our review first assembles evidence that social meaning is deeply involved in phonological variation and that phonological change is frequently motivated and accelerated by the association of social meaning with the more concrete components of linguistic structure. The transmission of social meaning is enhanced by the basic design of human language – a small number of empty elements that combine to form an unlimited number of meaningful sentences. Without the burden of referential meaning, variation in these 'empty' elements is free to signal information about the speakers and their social relations. Though sound change is only one of many mechanisms of change, it is the most intimately connected to the give and take of everyday life and it is likely to be found whenever we listen closely to what people are saying.

On the other hand, change in the more abstract levels of phonological organization is not likely to generate social meaning. The great majority of mergers proceed well below the level of social awareness. The details of a lexical split that distinguish one dialect from another are hidden from the speakers who follow this pattern. The full scope of a complex chain shift is beyond the grasp of speakers whose vowel systems are being re-organized. The parallel structure of phonological space will be reflected in social distributions, but social awareness will normally be focused on individual elements. The unobservability of paradigmatic structure appears to be a general operating characteristic of phonology and phonological change. Social meaning is not generally assigned to the paradigmatic relations among phonological categories, which are not freely perceived and evaluated by speakers of the language.

NOTES

1. For an in-depth discussion of these issues see Silverstein (1976).
2. An attempt was made to apply the framework for the study of variation in the designation of concrete objects (Labov 1972a) to the distinction between child and adult. It was abandoned because no definition could be found independent of the particular social privileges in view.
3. Hindle's (1979) analysis was based on a total of 871 measurements, while here we are dealing with 18,352.
4. We preserve the lexical identifiers of the vowel classes to maintain continuity with Podesva (2011).
5. And Podesva argues that this sound change is reflected in the fact that BOT is frontest in Night Out, reducing the Euclidean distance between BOT and BAT.
6. The backing of (e) and (ʌ) are late stages of the more complex Northern Cities Shift, to be presented in Figure 7.
7. Among the many mergers listed here, the lexical pair *pin/pen* comes closest to serving as a symbol of public recognition. It remains to be shown that social meaning is equally attached to the raising of the vowel in *wend* and *win*.
8. We can ask, how would this be possible? Of the four known mechanisms of merger (Trudgill and Foxcroft 1978; Herold 1990), *implosion* is the most likely candidate: the rapid reorganization of one phoneme into a space once occupied by two. One might imagine the imploded system in one social context and the binary one in another.
9. One of our reviewers recalls vividly being reprimanded for the failure to articulate the initial /h/ in /hw/ words.
10. This Charleston development may be related to the unusual relation of the upper class to the community as a whole. The general trend towards a North Midland phonology is led by the prominent upper class who were formerly the chief exponents of the traditional Charleston dialect.
11. We are indebted to Leigh Lisker for this observation.
12. The numbers in Figure 7 represent the best consensus on the ordering of these events in time. There remains some evidence that the unrounding of /o/ may have preceded the raising of /æ/, and the downward movement of /oh/ appears to be quite variable.

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