7 Regional Identity and Listener Perception

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7.1 Introduction

As numerous chapters in this volume explore, better understanding the perception of linguistic variation is crucial to a range of sociolinguistic enterprises, including the larger goal of uncovering the principles underlying sound change. In previous research comparing speakers' vowel boundary categorization and vowel production, we have attempted to explore directly the underlying assumption of most sociolinguistic work of a linkage between how speech forms are produced and perceived by examining differences in vowel identification patterns across regional groups and individual talker-listeners. This work has suggested that regional differences in vowel production, such as that found for the mid-front vowels in the South and the North, correlates with significant differences in vowel perception (Fridland & Kendall 2012; Kendall & Fridland 2012). In the present project, we investigate how providing regionally contextualizing information about a speaker might affect how listeners perform on this same vowel identification task. While the perception study as originally designed provided no contextual or social information about the stimuli speaker, in the current study we administer the identical vowel identification study, only this time adding a talker description that explicitly locates the speaker's hometown in the North, South, or West. Building on our earlier work exploring the relationship between production and perception, we examine here how the addition of this contextualization affected how listeners identified vowel categories in an attempt to understand how social stereotypes and local identity alter listeners' identification of category boundaries.

We undertake this work within the framework of both previous experimental phonetic research and sociolinguistically oriented work on perception. One of the major long-standing pursuits of sociolinguistics has been to understand the origins and spread of sound change. However, empirical research examining the role of perception in the actuation and dissemination of socially based language change has, for the most part, been neglected, though it is often assumed to be at the heart of transmission of such change (Labov 2001; Ohala 1981, 1989). While the exact nature of the role of speech perception in sound change

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may not be without debate (see Solé and Recasens (2012) for fuller treatment of this issue) the fact that speech perception is highly germane to discussions of sociolinguistic variation in production should not be.

Much early work on perception by sociolinguistically oriented scholars has been within the realm of language attitude research (e.g., Giles & Ryan 1982; Shuy & Fasold 1973). Indeed, such work has provided invaluable insight into the way that beliefs about language influence how listeners rate speakers on affective scales (Preston 2013). We also find literature from experimental phonetics supporting an account of speech perception as an active process incorporating speaker information.

A number of speech-processing studies (e.g., Magnuson & Nusbaum 2007; Remez et al. 1981) suggest that listener expectations about who or what they will hear affects how they perceive the same stimulus, for example, being led to believe they are listening to the same/different speakers or computerized speech. For instance, building on earlier work on talkers normalization, Magnuson and Nusbaum (2007) suggest the introduction of contextual information about stimulus talkers results not just in altered perception, but also in performance costs, as manipulation of expectations about talkers requires speakers to expend more or less effort on speaker normalization. In their study, listeners were exposed to identical speech stimuli but given different speaker expectation instructions. Listeners in a word-monitoring task were told, in one group, they were listening to just one talker, but in another group, that they were listening to two talkers. Despite both groups' hearing identical stimuli, results showed significantly slower processing for the group given the two-voice instructions than the one-voice instructions. The two-voice group responded in ways similar to listeners actually hearing two separate voices (though really only hearing one voice), demonstrating that expectations influence the way listeners process identical input. Meanwhile, speech processing has also been shown to be aided by talker familiarity – more familiar voices reduce processing burden and result in performance benefits (cf., Pisoni 1993; Nygaard et al.1994). As a result of such findings, research in experimental phonetics has started more deeply probing the role of speaker differences and not just co-articulatory/phonetic influences on disambiguating signal invariance in developing theories of speech perception. Recent research, in fact, suggests that the relationship between speech production and perception may be speaker and listener dependent (e.g., Harrington 2012; Dimov et al. 2012), with factors such as age and personality influencing behavior. Such findings both highlight the role of speaker background and experience in processing and also complicate any notion of a consistent and direct production/perception linkage.

As we move to approaches that increasingly recognize the role of the social in speech processing, sociolinguistics is well served in expanding the typical

paradigm beyond that of examining only speech production to better under-
stand how we perceive the variable speech that surrounds us. Regionally based
dialect studies, in particular, provide us an opportunity to look at why such
features persist despite widespread exposure to standard norms and to examine
the role of the listener in this process. For example, Preston's pioneering work
in perceptual dialectology (1989, 1993, 1999) highlights how listener expecta-
tions based on place (i.e., regions on a map) affect how speakers from those
areas are perceived on affective scales for status and solidarity measures. Of
particular interest here, his findings about salience of Southern speech to lis-
teners both within and outside that region (e.g., Preston 1989) show that some
place-based dialect features are particularly prominent, even more than one's
own dialect, and that this perceptual prominence prompts often strong linguis-
tic attitudes even when participants are not responding to any actual speech
stimuli. In other words, what we actually hear may not be as crucial to how we
evaluate speech as our expectations about what we are going to hear.

In the same vein, a number of other sociolinguistic studies have found that
expectations based on socially meaningful linguistic experience influence par-
ticipants' perceptual behavior beyond affective speaker ratings, ranging from
influencing how they categorize sounds to how they rate speaker attributes (see
reviews in Drager 2010; Thomas 2002). Most directly relevant to the current
chapter, several studies have suggested that the introduction of social infor-
mation about a talker (whether true or not) can alter vowel or consonant cat-
egorization. For example, in her study with Detroit natives, Niedzielski (1999)
showed that vowel quality interpretation was affected by simply relabeling the
stimulus speaker's identity from that of a local Detroit speaker to that of a
Canadian, suggesting that perceived social facts influence speech perception.
Similar results in terms of choosing different vowel exemplars were reported
by Hay, Nolan, and Drager (2006) when study participants were given answer-
sheets labeled with either "Australian" or "New Zealander" (and further work
by Hay and Drager (2010) indicated that the presence of stuffed toys indicative
of national differences alone were sufficient to shift perceptual responses).

Other work examining the effect of geographically based variation on speech
perception has shown that processing times and accuracy can be affected by
both speaker and listener dialect. Clopper and Bradlow (2008) found talker
dialect influenced intelligibility in noise for listeners, with "General American"
speakers more intelligible to all listeners (regardless of dialect) than Mid-
Atlantic talkers. Along the same lines, Clopper and Tamati (2010) looked at
how speakers and listeners from General American versus Northern dialects
performed on word recognition tasks in noise, finding a significant interaction
between speaker and listener dialect such that each group performed better
on word recognition when listening to their own dialect. This work echoes
that of Sumner and Samuel (2009) where exposure to both a highly salient

local variety and General American resulted in processing benefits on lexical decision tasks. Such work suggests that multiple dialect exposure and dialect familiarity may produce greater accuracy in speech processing tasks.

However, how local dialect experience mediates speech perception is often not direct nor the same for all listeners. Recent work by D'Onofrio (2015) explored the role of social personae in perception, finding that telling listeners to expect "California" or "Valley Girl" speech led them to hear stimuli for the /æ/ vowel as significantly more backed, in line with changes in production found in California speech. Most interesting in light of the current work, D'Onofrio unexpectedly found that listeners from outside the West heard /æ/ backing significantly more than those from the West. In other words, Western listeners were less likely to hear ambiguous tokens on the /æ/-/ɑ/ continuum as /æ/, suggesting less of an expectation of backing despite its likely presence in their own speech. Indeed, despite noting processing benefits from dialect exposure, Clopper and Tamati (2010) also suggest that when multiple varieties provide competing norms, processing tasks forcing a choice can cause lexical confusion (e.g., Clopper & Pate 2008). We also know that how forms are viewed in terms of social salience influences how listeners perceive and make assessments of speakers, as work by Preston (1989) revealing the markedness of Southern speech features clearly shows. Socially recognizable cues do more than simply allow us to make inferences about the social background or affective traits of speakers. Extralinguistic information about a speaker actually affects how listeners interpret and respond to the speech input they receive as Clopper and Tamati's (2010) and D'Onofrio's (2015) results suggest.

Working within this framework, the question we have sought to address in our past work is whether we can find evidence of regional differences in speech perception, or, further, a direct link between individuals' speech production and speech perception (Kendall & Fridland 2012; Fridland & Kendall 2012). However, beyond Niedzielski's (1999) study in Detroit, we still know little of how providing listeners with differing regional information about a talker, even without actually altering the speech signal, impacts how listeners evaluate or process that talker's speech and whether this varies depending on the listener's own dialect. In the present chapter, we look for the first time at how the addition of social (i.e., regional) information affects performance in our vowel identification task and whether that assigned regional information (about the talker) interacts with the regional identity of the listener. How does priming listeners to expect a particular regional affiliation of a talker (either Northern, Southern, or Western United States) influence how they perform on a vowel identification task compared to performance on a no-information condition for the same task?

The current study is designed to test listeners' perception of vowel variation found regionally as a result of major vowel changes affecting American regional dialects, namely, the Northern Cities Shift (NCS), the Southern Vowel Shift (SVS), and the Western or California Vowel Shift (CVS). These changes have altered the way in which speakers produce many American English vowels in the three main US dialect regions (North, South, and West), leading in many cases to more, not less, dialect contrast (Labov 1991; Labov et al. 2006). In our initial speech perception study, we set up an online vowel identification task, measuring vowel category judgments for five vowel continua, each embedded into two different consonant contexts. After hearing a one-word stimulus synthesized from natural speech from one of seven points along each vowel pair continuum, listeners were asked to select the word they thought they heard in a forced choice format (e.g., *bait* or *bet* for the /e/~/ɛ/ continuum). In the current study, listeners performed this same vowel identification task, only here they were primed to expect a talker from one of three US dialect regions (North, South, West) before beginning the task.

The perception test as originally designed provided no talker information other than what was obvious from the playback itself. The voice was that of an adult male from Reno, Nevada (in the West) but synthesized to approximate vowels along a continuum between two adjacent vowel phoneme categories. When receiving instructions for this vowel identification test, listeners were simply told to choose the word that they thought they heard (from two choices, e.g., *bait* or *bet*). So, it is hard to say what kind of social framing or assumptions about the speaker, if any, were used by participants when making categorization decisions.

For the current study, we focus on comparing our results for listener categorization of the /e/ to /ɛ/ continuum. The mid-front vowels, in particular, appear to be some of the most regionally diagnostic in modern US dialects. In our previous work, the mid-front continuum has proven to be relevant to regional differences in both production and perception (Fridland & Kendall 2012, 2015). For example, in our production data, Southerners show /e/ centralization while Westerners and, in particular, Northerners show /ɛ/ backing, but maintain a peripheral /e/ class. When Southerners are asked to identify the word they heard between *bait~bet* or *date~debt*, they hear *bait* and *date* tokens significantly farther down the continuum than either the Northern or Western listeners (Kendall & Fridland 2012). This is demonstrated in Figures 7.1 and 7.2, which show the results for 508 participants from the three regions across the /e/ to /ɛ/ continuum in the /b/ onset condition (i.e., perception of the stimuli as the word *bet* rather than *bait*) and /d/ onset condition (i.e., *date~debt*). These figures draw from a larger set of participants than were available in our earlier publications (Fridland & Kendall 2012; Kendall & Fridland 2012), but replicate the findings reported in those earlier reports.
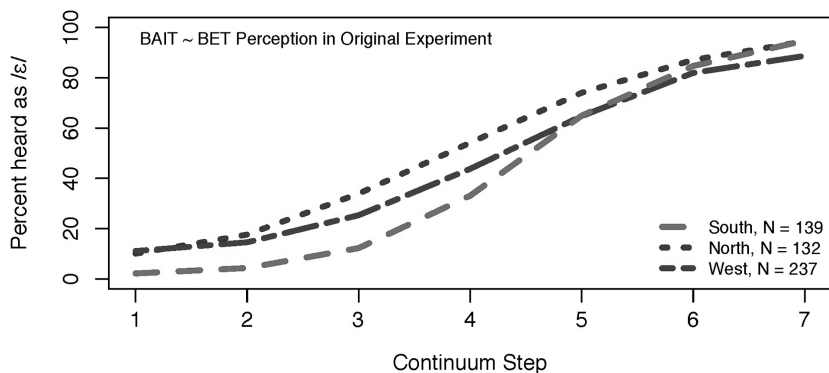
Figure 7.1 /e/~/ɛ/ identification for 508 participants across three regions (/b/ context)
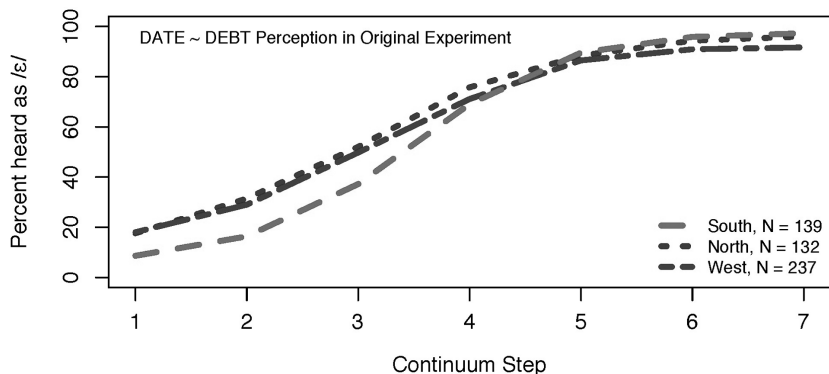

Figure 7.2 /e/~/ɛ/ identification for 508 participants across three regions (/d/ context)

In other words, the backer realization of /e/, closer to /ɛ/, in Southern speech appears to also be reflected in Southern listeners' identification as /e/ for forms closer to /ɛ/ along the /e/~/ɛ/ continuum. The fact that we found significant differences between Southerners and other regions' listeners suggests that perception (i.e., vowel identification) is indeed linked to production. At least, this appears to be the case when no regional identity is provided for the stimuli talker and listeners are expected to rely on whatever perceptual baseline they have. Since Southerners' baseline production varied in the same direction as their perception, it seems logical to conclude that listeners' baseline is, in the absence of additional information, mediated by local forms, as suggested in

Fridland and Kendall (2012). However, what if social information about the talker is introduced? Will it alter how our vowel stimuli are categorized?

7.2   Study Design

For this study, we revised our original vowel identification experiment to include information about the stimuli talker as a member of one of three regional groups, placing the speaker as either a regional insider or regional outsider. This manipulation, we hoped, would allow us to test how talker regional identity influences vowel threshold perception and how this additional information alters perception compared to our original no-information condition.

To do this, the same vowel identification study originally used at all field sites (the no-information condition) was altered by the addition of a photo of an adult male wearing a t-shirt from a relevant regional college (University of Illinois for the Northern guise, University of California at Berkeley for the Western guise, University of Georgia for the Southern guise). The photo was identical in all three guises, except that the t-shirt was altered digitally in the photograph, to ensure that no other aspects of the photographed "speaker" would differ for the guises. Adjacent to the photo, which first appeared prior to the vowel task at the beginning of the instruction phase, a short biographical section appeared onscreen describing the speaker as from one of the three main dialect areas (North, South or West), depending on which guise a listener was hearing. For instance, for the North condition listeners were given the text:

In the following survey, you will be hearing a speaker of a Northern dialect who was born and raised in Chicago, Illinois (pictured at right).

In order to make sure that the speaker's identity remained relevant throughout the task, the photo (no text) with the identifying t-shirt remained on the screen. No other changes were made to the vowel identification study and all stimuli were identical to those used in all of our previous studies. This rather simple manipulation of listener's expectations was chosen based on previous sociolinguistic studies, which have demonstrated that simple photograph-based manipulations impact listener performance in perception studies (e.g., Hay, Warren & Drager 2006; Hay & Drager 2010).

Listeners were recruited at universities in Western dialect sites (Nevada and Oregon) and Southern dialect sites (Tennessee and Alabama), with a subset of participants in each region split among the three guises. In each site (Western and Southern), a subset of listeners heard one of the three guises. In other words, in all sites, all three regional guises were heard by roughly one-third of the listeners from that site. The task was administered in a between-subjects design, so that each participant was given one, and only one, regional identity for the talker, which was used throughout their experimental survey. Only

data from listeners native to each region were included. In our analysis, we consider these three social conditions against one another as well as against a no-information condition. The no-information condition data are the unaltered perception test's responses from our prior work. More information about the (original) vowel perception experiment is available in Kendall and Fridland (2012).

7.3   Results

We consider the results from this experiment separately by listener region, beginning with the Western participants. Figures 7.3 and 7.4 show the
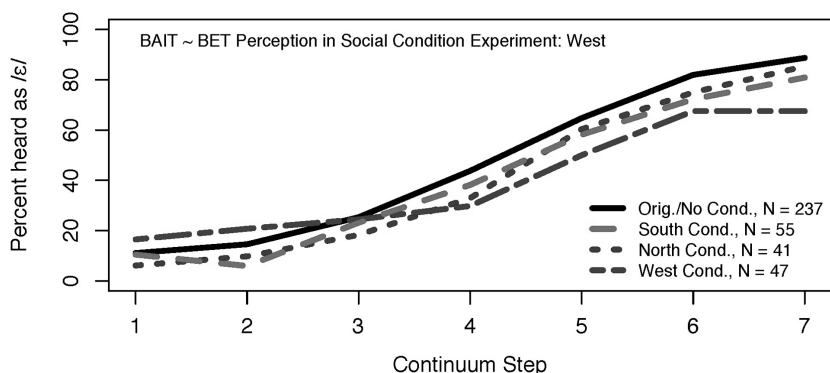

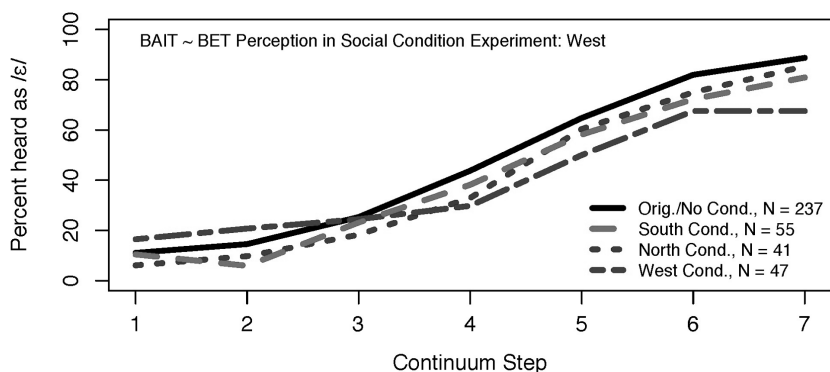Figure 7.3 /e/~/ɛ/ identification for 380 Western participants in four conditions (/b/ context)

Figure 7.4 /e/~/ɛ/ identification for 380 Western participants in four conditions (/d/ context)

Table 7.1 *Model results for Western* bait: bet *continuum in four conditions*

	Log-odds Est.	Std. Error	*p* value
Intercept	−5.94407	0.29427	–
Step	1.41443	0.05786	< 0.00001
Cond. = North (not no-info)	−0.38680	0.29918	0.19605
Cond. = South (not no-info)	−0.49212	0.28778	0.08725
Cond. = West (not no-info)	−0.92628	0.29458	0.00166
Ext. speakers (not headphones)	0.14130	0.27925	0.61285
Int. speakers (not headphones)	−0.54079	0.21820	0.01320

Table 7.2 *Model Results for Western* date: debt *continuum in four conditions*

	Log-odds Est.	Std. Error	*p* value
Intercept	−3.86963	0.22755	–
Step	1.31238	0.05324	< 0.00001
Cond. = North (not no-info)	−0.43184	0.26698	0.10577
Cond. = South (not no-info)	−0.68085	0.25688	0.00804
Cond. = West (not no-info)	−0.69521	0.25924	0.00732
Ext. speakers (not headphones)	0.05387	0.25203	0.83074
Int. speakers (not headphones)	−0.50149	0.19456	0.00995

identification functions for 143 Western listeners in all three regional conditions (*N*=55 South condition, 41 North condition, 47 West condition), along with the Western participants from our original perception study (the same 237 participants shown as the West in Figures 7.1 and 7.2), for the /e/~/ɛ/ continuum in both consonantal contexts. As can be seen in Figures 7.3 and 7.4, there appear to be differences in how Westerners heard the continuum when they were told the voice was from a Western speaker, compared to the other regional speaker identity conditions and the original (no-information) test condition.

Westerners who were told the stimuli talker was from the West show a flatter response along the continua overall and, basically, do much poorer on the task. (We use *poorer* here to mean that, when told to expect to hear a Western talker, listeners score closer to chance in deciding which token they believe they heard.) These differences are examined further via mixed-effect logistic regression modeling. The fixed-effects for the models for the *bait~bet* and *date~debt* continua are displayed in Tables 7.1 and 7.2, respectively. These

models were generated using the *glmer()* function in R (Bates et al. 2015) and include a random intercept for the participant as well as a random slope for continuum step by participant. Continuum step, or the synthesized steps participants heard between the two vowel endpoints, ranged from 1 (most /e/-like) to 7 (most /ɛ/-like), and was included as a fixed-effect for each model. As in our previous work, and as expected, continuum step is highly significant in all statistical models. We also include listening format as a fixed-effect to control for differences between the use of headphones (what the instructions told participants to use) vs. external speakers vs. internal (e.g., laptop) speakers. This emerges as a significant factor, but, as with some of our previous work (cf. Kendall & Fridland 2012), we only include this here as a control and do not consider it further. Regional condition was tested against the no-information condition as the baseline. The differences for the West condition listener groups (those Western site listeners told they were hearing a "Westerner"), visible in Figures 7.3 and 7.4, are significant for both continua, with the West condition perceiving the continua significantly differently from the no-information condition. Interestingly, we also find a near significant difference in the post-/b/ continuum and a highly significant difference in the post-/d/ condition for the South condition relative to the baseline, no-information condition. The North condition is not significantly different from the baseline, no-information condition. We return to consider the finding that the West and South conditions pattern differently than the no-information and North condition for our Western listeners in the discussion.

We turn now to the data from our Southern groups, which are shown in Figures 7.5 and 7.6. Statistical results (paralleling the analysis for the Western participants above) are shown in Tables 7.3 and 7.4. Here we first note that our number of social condition participants in the South is much lower than for the Western group, as we (two researchers at Western universities) had much greater access to participants in the West than in the South. A total of 165 Southerners are included as participants. Twenty-six Southern participants took the experiment in one of the regional conditions (*N*=11 South condition, 8 North condition, 7 West condition), and 139 participants are included from our previous work as the no-information condition. The lower *N*'s result in less clear patterns (note the less smooth lines in Figures 7.5 and 7.6) and less statistical power. However, clear patterns still emerge. Southern participants report hearing /e/ farther along the continuum before shifting toward hearing /ɛ/ in the South condition than in the other conditions. This finding fits with the pattern that we might describe as "the Southern perceptual pattern" for /e/~/ɛ/ that we found in our earlier work with the original perception study, where Southerners hear /e/ for more of the continuum than non-Southerners (Kendall & Fridland 2012). We find here that this pattern is even more pronounced for Southerners who are told they are hearing a fellow Southerner. As can be clearly seen in
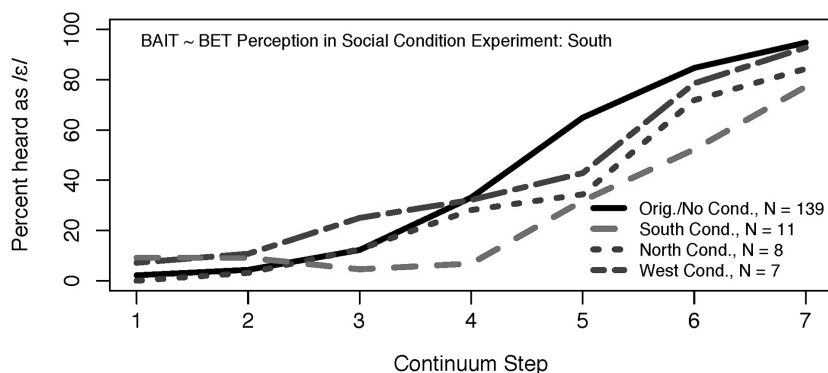
Figure 7.5 /e/~/ɛ/ identification for 165 Southern participants in four conditions (/b/ context)
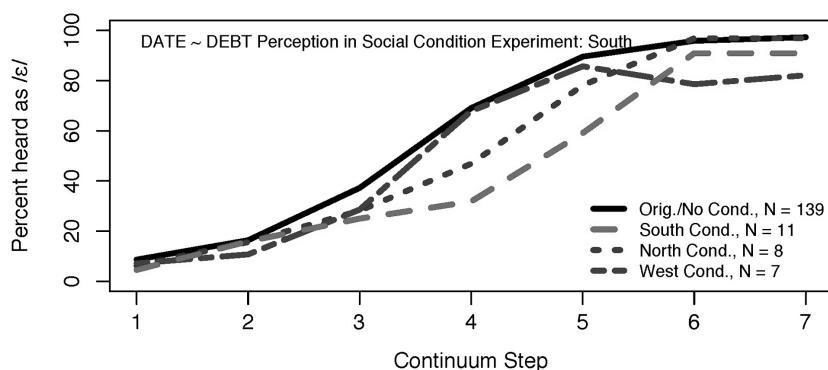
Figure 7.6 /e/~/ɛ/ identification for 165 Southern participants in four conditions (/d/ context)

Figure 7.5, the association of the stimuli talker with the South substantially alters the way the continuum is heard compared to the no-information condition. In a similar vein, Southerners who were told they were listening to a Northerner also behave significantly differently than when listening to the no-information condition, again hearing more /e/ at each step. In contrast, suggesting that this is not just reflecting poorer categorization performance overall when social information is included, Southerners who are told they are hearing a Westerner perform no differently than Southerners who are given no social information. While Southern percepts of the Western condition are somewhat more /e/-biased than non-Southerners (the Southern no-information condition line is lower than the Western and Northern lines in the original experiment;

Table 7.3 *Model results for Southern* bait: bet *continuum in four conditions*

	Log-odds Est.	Std. Error	*p* value
Intercept	–9.1991	0.5173	–
Step	2.0356	0.1018	< 0.00001
Cond. = North (not no-info)	–1.6463	0.7216	0.022515
Cond. = South (not no-info)	–2.4099	0.6345	0.000146
Cond. = West (not no-info)	–0.7470	0.7722	0.333356
Ext. speakers (not headphones)	–1.2671	0.6583	0.054266
Int. speakers (not headphones	–1.4518	0.7171	0.042931

Table 7.4 *Model results for Southern* date: debt *continuum in four conditions*

	Log-odds Est.	Std. Error	*p* value
Intercept	–6.7006	0.4192	–
Step	2.0193	0.1036	< 0.00001
Cond. = North (not no-info)	–1.3081	0.7402	0.07721
Cond. = South (not no-info)	–2.0860	0.6472	0.00127
Cond. = West (not no-info)	–0.9523	0.7952	0.23108
Ext. speakers (not headphones)	–1.0108	0.6720	0.13255
Int. speakers (not headphones	–0.8306	0.7365	0.25943

compared to Figures 7.1 and 7.2), they process the no-information condition stimuli in the same way as the West stimuli.

Having identified that statistically significant differences emerge when we manipulate participants' knowledge about the stimuli speaker, and that different regional listeners respond to this knowledge in different ways, we turn in the next section to consider what exactly this may mean in terms of how our speakers incorporated extrinsic information into the vowel identification task.

7.4   Discussion

Our results indicate that regional information about a talker indeed influences listeners' performance in vowel identification tasks compared to situations

where listeners are provided no regionally identifying information about a speaker. For all conditions, the addition of regional information about the talker appears to result in a tendency for participants to generally hear more /e/ along the entire continuum while also being somewhat less categorical in their perception of the most /e/-like end of the continuum. Overall, listeners did not seem to perform as well in general (scoring closer to chance at each step). This might suggest that this addition of regional social information with a voice that does not exactly mesh with listener expectations results in incongruity between the assigned regional identity with the talker voice, affecting how well listeners are able to recognize vowel identity.

Yet, although adding social information shifts perceptual response from the baseline condition toward hearing /e/ more overall, we still found that, for both groups of listeners, listening to a talker associated with their own regional identity (a local) alters to a greater extent how that talker's vowel categories are perceived compared to hearing the same talker associated with an out-group region (despite actually hearing the same stimuli in both contexts). Likewise, an association with a salient other regional dialect (e.g., Northerners for Southern speakers and Southerners for Western speakers) also appears to influence performance on the identification task differently than when the talker was not associated with any particular region (as in the baseline no-information condition), although overall this effect seems less strong than the influence of local expectations. How perceptual processing is affected, in other words, does seem to depend on a listener's own regional affiliation and, we think, their experience with or knowledge of another dialect area. After all, our Westerners and Southerners performed differently in the experiment (e.g., in their responses to the North condition). What this means, however, is a bit more difficult to interpret and may depend on the listening task involved.

Focusing on the Western participants first, we observe that they are closer to chance in how they perceive the stimuli when told they are listening to a Western speaker compared to the baseline condition, and compared to the other regional conditions. As mentioned before, this makes sense from the perspective that this response may be a result of a mismatch between their expectations (of hearing a within-region, or local, sounding voice) and what they actually hear. It is also possible that, because the stimuli are synthesized and thus not authentically representative of any dialect region, they, as a result, may not be interpreted as sounding local. However, the fact that these same stimuli are used for both experiments but the identification function differs depending on the assignment of different regional affiliations for a speaker suggests that the addition of social information indeed plays a role in expectations about what a speaker will sound like, particularly if the listener is familiar with the dialect. When hearing the no-information condition, the talker was not identified

as being from a specific place or region, and, as a result, listeners, perhaps, did not encounter any perceptual misalignment with expectations for familiar sounding speech.

This explanation may appear to make less sense for the Westerners hearing the Southern identity condition, where we find nearly the same, though weaker, statistical pattern. Here, however, the same logic may apply. Although Westerners (at least many of them) may not have regular direct experience with Southern pronunciations, due to popular media and folk linguistic experiences and attitudes (e.g., Niedzielski & Preston 2000), they should still have at least some stereotype or concept of a Southern accent, as Hartley's (1999) study of Oregonian perceptions of the South indeed suggests, finding the South as the most salient (and incorrect) US dialect region for Oregonian participants. The results here might indicate that these stimuli do not align with these expectations or beliefs about Southern speech either. What about the North then? To speculate, while the Northern Cities Shift receives a lot of attention by sociolinguists, Northern accents are likely less in the public imagination than Southern ones (e.g., Preston 1989, 1996) and perhaps these Westerners don't have an expectation to mismatch against leaving their performance the same as it is in the no-information condition. Essentially, when the phonetic cues of the stimuli conflict with expectations based on the social cues provided, listeners are forced to work out this dissonance, affecting how they perform in the vowel identification task. But when the social cues do not invoke expectations, then performance is not (or at least is less) impacted.

Now, turning to the results for our Southern listener group, there are two possible interpretations for the data. One possibility, in line with our earlier findings on the influence of the Southern Shift on Southern listeners, is that the reduced percepts of /ɛ/ in the identification task can be interpreted as a greater engagement in what we are labeling as the Southern perceptual pattern. For Southerners, who in general already hear less /ɛ/ (but more /e/) along the continuum in the (original, no-information) identification task (Figures 7.1 and 7.2; cf., Kendall & Fridland 2012), being told they are listening to a Southerner increases this Southern percept. The fact that they hear the South condition as primarily /e/ for the majority of the continuum (particularly when compared to perception of the non-South conditions) may also be a response to the lack of dynamic variation in the stimuli between the two endpoints. Our recent work on the heightened role of vowel dynamics distinguishing the tense and lax vowels in the South compared to other regions (Farrington et al. 2015), as well as our finding of significantly greater duration for lax versus tense Southern vowels (Fridland et al. 2014), hints that Southerners rely much less on formant cues to distinguish these vowel pairs in Southern speech than speakers in other regions. As such, the expectation for Southern speech to conform to this

pattern may enhance the perception of /e/ for the South condition, compared to other conditions.

Alternatively, we could also see this as a similar poorer performance on the vowel identification task, much like we find with the Western listener group, related to the dissonance between Southern expectations for in-group speech. In other words, as above, the stimuli did not sound like what listeners expect from an in-group dialect speaker. The significant divergence in perceptual results between the North condition and the original listening condition for the Southern listeners also seems to point to a mismatch in what Southerners expect Northerners to sound like, and what they heard during this test. Again, they show a flatter perceptual response (or closer to chance performance) than in the no-information condition, hinting that a disconnect between social information and linguistic cues creates a type of noise or interference from a processing perspective. (This interpretation assumes that our Southerners, unlike our Westerners, do have expectations about Northern speech. This interpretation may be supported by previous work, such as in Southerners hand drawn maps comparing "Yankees" to "God's people" [Niedzielski & Preston 2000:61], although we note the effect is not as strongly significant, which might further be taken as evidence that this salience is not as strong as, e.g., Western expectations about Southern speech.) The fact that both the Southern and Western listeners perform closer to chance when categorizing speech that is not local, but likely familiar through direct experience or stereo-type suggests that listener expectations of how the speaker should sound, and not just linguistic information in the signal itself, affects how they hear that signal.

7.5   Conclusion

In closing, our data suggest that listeners' perception of vowel categories is mediated by their own dialect experience and their expectations for how regional dialects should sound. Surprisingly perhaps, both Western and Southern participants in our vowel perception task showed the most variance from the no-information condition results when told they were listening to a talker from their own dialect region. Association with what we presume here to be less familiar regional dialects showed no statistically significant difference compared to the same perception experiment containing no regional dialect information (the no-information condition). While our dataset is small, especially for our Southern participants, and should be taken as only suggestive at this point, our results confirm earlier work, as well as that presented in other chapters in this volume, showing the important role of social information in speech processing tasks. Together, these point toward the need for more

sociolinguistic work on the link between speech production and speech processing in the future.

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