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Defining Dialect, Perceiving Dialect, and New Dialect Formation: Sarah Palin's Speech

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Abstract

Nonlinguists prove surprisingly good at recognizing dialects, even as dialects rapidly evolve. During the 2008 U.S. presidential election, Republican vice presidential candidate Sarah Palin's speech was intensely discussed among linguists, the media, and laypeople. Though Palin is from Alaska, her speech was often identified with the Upper Midwest. The authors explore what this mismatch can tell us about dialects and their perception, starting from a description of Palin's speech as commented on in the media. They review some pragmatic features and provide quantitative treatment of her "*g*-dropping." Then, they undertake acoustic analysis of Palin's vowels and final /z/ devoicing, including Western features and features that create an impression of her speech as Upper Midwestern. Regional settlement history, research on "new dialect formation," and research on perception of variation inform the authors' finding that a few acoustic and other characteristics trigger a specific national perception of Palin's verbal behavior.

Keywords

American dialects, style, register, sociolinguistic variation, sociophonetics, koinéization, dialect perceptions

Introduction: Sarah Palin's Speech and Perceptions of It

While political events regularly trigger discussions of language and dialect, the choice of Alaska Governor Sarah Palin as Senator John McCain's running mate in the 2008 U.S. presidential race stands out for the sheer amount of press it generated on this

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topic in a short time. Laypeople and specialists alike were confounded by her speech, particularly the impression that she sounds "Upper Midwestern" rather than Alaskan. In a matter of weeks after her selection by McCain, a pantheon of notable American linguists, sociolinguists, and lexicographers weighed in on the topic of Palin's dialect: William Labov on National Public Radio, Robin Lakoff in a *Mother Jones* podcast, Steven Pinker in the *New York Times*, and Jesse Sheidlower on *Slate*, the latter includes numerous insightful comments from Rosina Lippi-Green and James Crippen.[1] In addition, two linguistics blogs, Mr. Verb and Language Log, devoted numerous posts to the topic.[2] Still, the overall picture has not yet been laid out fully and coherently, in part because of the complexities of the term *dialect*.

This article shows how quantitative sociolinguistics and acoustic phonetics can be brought to bear on a public figure's speech, but more importantly on issues of dialects and dialect formation.[3] We ask why this Alaskan politician's features of speech should be identified—that is, enregistered (Agha 2003) or indexed (Silverstein 2003)—across the United States as Upper Midwestern, and we present evidence that this identification hinges in part on different notions of the word *dialect*. The ways this term is explored here include dialect as a regional or historical derivative (Hock 1991: 380-381; Romaine 2002:310; Blevins 2004), as a subordinate variety (Chambers & Trudgill 1998:3), and as a perceptual entity (Hoenigswald 1966; Preston 1989, 2000; Bradac, Cargile, & Hallett 2001:146). Although Palin's voice projects information about her age, gender, ethnicity, and social class, the bulk of attention to Palin's speech has focused on regional differences (e.g., comments by Labov, Sheidlower, and others on "Alaskan accents"). We argue here that social and historical considerations connect with regional features fundamentally (Remlinger, Salmons, & von Schneidemesser 2009). In the spirit of similar analyses of public figures' speech (e.g., Tanford, Pisoni, & Johnson 1991; Harrington, Palethorpe, & Watson 2000; Harrington 2006) and case studies on migration and language (e.g., Hazen & Hamilton 2008), the upshot of comparing real speech patterns to our perception of that figure's speech or the figure herself or himself is to be reminded of the power of perception over "reality" (e.g., Preston 1989, 1999; Niedzielski & Preston 2000) and to emphasize the historical underpinnings of dialect variation (e.g., Labov 1963; Mufwene 2000).

We selected the 2008 vice presidential debate for grammatical and acoustic analysis since it helped shape the public's perception of Palin—for many, the debate represented the first extended exposure to her (relatively) unscripted speech. This debate with Senator Joseph Biden was held October 2, 2008, in St. Louis, moderated by Gwen Ifill. We used the audio and transcript available on the *New York Times* (*NYT*) Web site.[4] The sound quality in this tightly controlled and professional recorded setting is much higher than in many naturalistic settings. The features selected for analysis are those that resonated in the national media, all salient social and regional variables in contemporary American English. Our methods of discourse, lexical, and acoustic analysis used are discussed below where appropriate.

We argue here that just a few of Palin's verbal characteristics could elicit perception of a specific geographical dialect. It is likely, then, that many listeners across the

country must have enregistered these characteristics as belonging to the Upper Midwest. The issue here is not whether Palin's register (i.e., language used in a particular situation for a particular purpose and often associated with formality distinctions) is one of several she switches in and out of or even whether she is consciously using a register to further her political career. Rather, listeners' responses to her idiolect indicate that specific characteristics of her speech trigger perceptions at a national level. What possible connection is there among sounds, words, and syntax used by Sarah Palin and the register index that is triggered when we hear her speech? Agha (2005:38) argues that registers are "reflexive models of language use . . . identifiable trajectories in social space through communicative processes." Agha clearly situates this process in the realm of micro variation, and hence it has implications for linguists' understanding of the word *dialect*.

Two aspects of enregisterment are relevant here. First is that "a register's forms are social indexicals in that they index stereotypic social personae" (Agha 2005:39-40). In other words, listeners and speakers recognize certain speech patterns as affiliated with certain groups of speakers. For example, *aks* for 'ask' is often associated with speech of African Americans and *dem*, *der*, and *dose* with German immigrants, so much so that they alone can signal a speaker as a stereotypical exemplar of one or the other group. Second is Agha's notion that the register is affiliated with a recognizable social domain. Palin's voice exhibits some markers that listeners are sensitive to because these markers are unexpected for the stereotypic register of a politician, a female politician, a female politician with the social domain of having just been nominated for the position of vice president, and so on. The answer to how enregisterment is related to dialect is this: psychological conceptions of geographic registers (e.g., "correct" speech in Michigan and "pleasant" speech in the Alabama; see Preston 1989, 1999, 2000) are formed through specific migration patterns at points in time (historical residues); once these dialect features associated with those conceptions of speakers are recognized and commented on in multiple locations, then they have national relevance. In addition, enregisterment highlights the relevancy of understanding dialect as a collection of nonstandard features. A speaker's use of speech characteristics reveals the speaker's *face* or public persona (Goffman 1955). In the case of Palin and her performance during the campaign, she projected a face of a nonstandard speaker while the public's response indicated an expected face of a standard speaker. Palin's voice—and the public's perception of it—highlights the role media may have in enregistering folk stereotypic voice properties (Agha 2005:52).

This article is structured as follows. First, we present quantitative data on two salient and socially value-laden characteristics of her speech: her use of euphemisms like *darn* and related issues and then her so-called "g-dropping"—use of a coronal nasal for velar nasal in verbal and deverbal *–ing* forms. After this, we provide acoustic analysis of Western features and those we believe create the impression of an Upper Midwestern accent. A final section sketches how those features likely found their way into Alaskan speech. As will be clear from the foregoing, we are interested in structural linguistic issues in their social and historical context, and we do not delve into

matters of the construction of speaker identity beyond the minimum immediately required for our task. We conclude with remarks on specific features and perceptions of Palin's speech, considering what this means for dialect formation in American English and Western dialects in particular.

Sarah Palin and Social Dimensions of Her Vice Presidential Debate Register

The register of Palin's speech has been seen as strikingly informal, even during the vice presidential debate.[5] In the debate, for example, she uses *gramma* (more or less [gɹæmə]) rather than *grandmother*. She also proffered a *shout out* to a third-grade class in Alaska and referred to Senator Barack Obama simply as *Barack*, even when she had apparently not yet met him in person.

More striking are some of Palin's pragmatics and discourse patterns, such as her use of euphemistic forms like *heck*, *darn*, and *doggone*. In the debate, Palin uses two instances each of *darn* and *heck* from about 7,640 total words, based on the *NYT* transcript. The perception of this behavior to specialists and nonspecialists could be that Palin is inappropriately faux swearing. Understanding this mismatch between language behavior and our perception of it starts with facts about how often we actually do hear *heck* and *darn*. According to the Corpus of Contemporary American English (COCA; Davies 2008, searched October 2008), the frequency of *heck* is 13.1 per million words in relatively formal spoken usage (where it is most common), and it shows 2,836 occurrences in the over 385,000,000 words across all text types. COCA's spoken texts are "transcripts of unscripted conversation on TV and radio programs" ranging from *All Things Considered* (NPR) and *Newshour* (PBS) to *Hannity and Colmes* (Fox) and *Jerry Springer* (syndicated). *Darn* occurs 5.7 times per million words in spoken usage and 1,228 times in toto. We assume that perceived and real knowledge of the government's rules for verbal behavior on television and radio may place stylistic constraints on speakers' word choice. Such style constraints highlight the likelihood of faux swearing rather than actual swearing in COCA. By comparison, Palin's usage of both words, extrapolating from the debate, would be 261.8 occurrences per million words. These rates are low, obviously, but twenty and forty-six times higher than the frequency in COCA in a more formal setting. This, it seems, is enough to make a lasting impression.

Finally, Palin's broader pragmatic and discourse marking patterns (e.g., *you betcha*) and paralinguistic behaviors (e.g., winks) further support the image of informality she projects. These aspects of her performance strengthen and reinforce our impression of her actual linguistic behavior during the vice presidential debate.

Palin's pronunciation has left an equally strong impression of informality. This may be motivated in part by her occasional use of widely stigmatized features like prefixal rhotic-vowel metathesis in *p*[ɝ]*duce* for *produce* (from the debate). But the most commented-on stylistic feature of Palin's speech is her use of [ɪn] rather than [ɪŋ] in the progressive *–ing*. Palin used this feature in the debate (see (1)), and Tina Fey on *Saturday Night Live* (October 4) and Maureen Dowd in the *NYT* (October 5) expressly satirized that trait immediately thereafter.

Table 1. Sarah Palin's "g-dropping" in the Vice Presidential Debate

	Velar	Coronal	% Dropping
-ing	187	25	11.8
Auxiliary *going*	2	40	95.2
Total	189	65	25.6

Note: These numbers reflect some differences from the *Times* transcript, where we have corrected minor transcription errors, such as changing *bring in* to *bringin'*.

(1) Palin's G-DROPPING
  (a) takin' personal responsibility
  (b) people are hurtin'
  (c) where you're goin'

Note that we retain the familiar name for the phenomenon, though there is no phonetic [g] to "drop" in *–ing* forms for most English speakers, rather a simple difference in place of articulation, with [ŋ] produced at the soft palate and [n] at or near the alveolar ridge. Historically, a complex competition existed between *–ende* and *–ing* ~ *–ung* suffixes. The former became [ɪn] with historical reductions, while the latter, modern *–ing*, became the standard verbal and deverbal form.

Quantitative analysis of Palin's tokens from the debate confirms that she does g-drop more broadly than the instances given in (1). Still, counting all verbal and deverbal *–ing* forms, Palin g-drops only 11.8 percent of the time in the debate, as shown in Table 1, though many have the impression that Palin does it far more consistently. Labov, Ash, Boberg (2006:15) provide experimental evidence for listener sensitivity to this variable. Listeners reacted to differences of 10 percent between the rate of usage of the ING variable, and the internal "sociolinguistic monitor" is "sensitive primarily to the number of marked forms rather than the number of unmarked forms," meaning that listeners react to the occurrence of coronal rather than velar forms.

We also find forty instances of reduced forms of the future auxiliary *going (to)*, where she varies between *goin' to* and *gonna* realizations. These reduced forms are widely used in even formal speech and captured in the familiar spelling *gonna*.[6] While reduced auxiliary forms may contribute to perception of g-dropping, they are not, strictly speaking, part of the pattern in question.

Of the twenty-five coronal forms, none was a nominal form of the type *federal funding, government spending*, or *the building*, which reflects historical *–ing* patterns. Moreover, all were high frequency lexical items, like *taking* (2/2 occurrences), *bringing* (2/3 tokens), and *looking* (3/4 tokens) as well as *saying, doing, being,* and *getting.* The only exception to this pattern is *craving*, which she happens to use twice. This finding suggests an additional systematic aspect to her behavior: Palin's g-dropping is widespread in highly frequent verbs and basically absent in lower frequency vocabulary.

For comparison, we checked two stretches of Senator Joseph Biden's usage during the debate, his first contributions up to 9:46 minutes into the debate and a randomly selected stretch from about 41:22 to 48:35. In the first passage, of twenty-one tokens,

Biden uses no coronal variants, leaving aside two future auxiliaries. In the second, he uses twenty-three, with the coronal variant again only with the future auxiliary (three times). For nonauxiliary *going*, Biden twice uses the velar variant, as in "what was going on." Biden has not been identified as a g-dropper in the press as often or to the extent that Palin has. The subtleties of Biden's use of style shifting from Palin's was emphasized by linguists just before and after the debate. From a Biden speech sample played to William Labov the day of the debate on NPR's *All Things Considered* (involving *talkin'*), it is clear that Biden can style shift into g-dropping. The day after the debate in an interview by Kiera Butler of *Mother Jones*, Robin Lakoff claimed that "[Biden] dropped a few *g*s but again that was when he was showing he was a guy from Scranton." Lakoff characterized his speech as fairly standard and contrasted the lack of style shifting by Biden during the debate while evoking folksiness of his hometown through discourse markers ("Where I come from . . .") with the observation that "particularly Palin does [g-dropping] a lot, but she also doesn't do it a lot. So, you know, she sort of varies, which is just what you'd expect if it were a stylistic trait." Thus, we conclude that the absence of g-dropping (ignoring the instances of *gonna*) by Biden during the debate—when he had the opportunity to do so but did not, as in previous occasions—and the response to the occasional participation in g-dropping by Palin correspond to general expectations of formal speech.

The reaction to g-dropping by political figures during this campaign season was sharp at times. Conservative commentator Peggy Noonan (2008), for instance, wrote in the *Wall Street Journal*,

> More than ever on the campaign trail, the candidates are dropping their G's. Hardworkin' families are strainin' and tryin'a get ahead. It's not only Sarah Palin but Mr. McCain, too, occasionally Mr. Obama, and, of course, George W. Bush when he darts out like the bird in a cuckoo clock to tell us we are in crisis.

As shown in detail by Campbell-Kibler (2006, 2009; also see Labov, Ash, Baranowski, et al. 2006), American English speakers are extremely sensitive to frequency in a behavior like g-dropping and assign it clear and highly variable social meanings. That the discussion of Palin's g-dropping has reached the national media is strongly suggestive of this feature being in the "third-order" indexicality where socially affiliated features are discussed openly (Silverstein 2003). What is interesting is that an overall rate of g-dropping of under 12 percent in a vice presidential debate is more than sufficient to trigger the threshold on our expectations about violating a formality level.

The vast published literature on this sociolinguistic variable in English around the world—much of it reviewed by Campbell-Kibler (2006:21-54)—shows several consistent social parameters of variation that suggest why this feature of Palin's speech stands out so much even though it is used rather infrequently. More formal settings correlate positively with more use of the velar variant [ɪŋ], for example, and women use the velar variant more, as do those of higher socioeconomic status and more upward mobility. All these factors would correlate with very low use by someone of Palin's status and situation, despite efforts to identify herself with "Joe Six Pack," "Joe

the Plumber," and "hockey moms." No sociolinguistic studies on *-ing* describe any situation nearly as formal, planned, or carefully scripted as the vice presidential debate, but Palin's coronal variants exceed those reported in various studies for people of similar or lower socioeconomic class in "careful" or "reading" style. Labov's (1966:394-399) classic study of New York City shows that "casual" style rates around 10 percent use of /n/ for his highest socioeconomic group in informal usage; in "reading" style, only the lowest socioeconomic group shows more use of *–in* forms than Palin in the debate. In "careful" speech in that study, in fact, only the highest socioeconomic group had lower rates of coronal usage than Palin. In sum, Palin's g-dropping in verbs with greater frequency that generated a sharp media response suggests that, at a national level, g-dropping is a marker of less formal speech. This perceived informal register marker covaries with a perceived nonstandard dialect class status, thereby linking enregisterment with the notion of dialect as a nonstandard variety.

Expected Western Regional Features in Sarah Palin's Speech

Sarah Palin's pronunciation clearly has Western features. In the grand scheme of American dialects, the Western part of the country is often regarded as lacking in clear regional features, although it is conceived of as a coherent dialect region (Labov's "Third Dialect"; Labov 1998). The explanation for this is that the populating of the West entailed the elimination of strong dialect features found in the East and Midwest as people moved westward and different dialects came into contact along the way. The coherence view has, however, received some criticism, with particular local features being reported in the literature (Di Paolo & Faber 1990; Clarke, Elms, & Youssef 1995; Labov, Ash, & Boberg 2006).

To test Palin's pronunciation against acoustic characteristics identified in the literature as being important to a Western or Upper Midwestern dialect, a digitized recording of the vice presidential debate was analyzed. A total of 129 vowels from the debate recording were extracted and analyzed. Attempts were made to identify minimally five words per word class. Two of the word classes had fewer than five tokens. The purpose of studying Palin's vowels is to determine whether her vowels have any Upper Midwestern characteristics that could possibly be enregistered to elicit the national perceptions they have and to also determine—if there are any potential markers—the extent of the similarity between Palin and what has been reported in the literature.

For each target vowel, measurements of the first three formants were taken at two points, representing a vowel head and tail (Andruski & Nearey 1992; Assmann & Katz 2000). Because diphthongization is important for several vowels in the Upper Midwest (e.g., Northern Breaking; see Labov, Ash, & Boberg 2006:175) and diphthongization may contribute to near-mergers in the West (Marianna Di Paolo, pers. comm.), measures were taken when formants slowed or reached a maximum or minimum, and all vowel heads (dots on Figure 1) and tails (arrows on Figure 1) are plotted. To provide a better comparison across speakers, linear hertz values are transformed into the psychoacoustic bark scale (Traunmüller 1990). Plotting of vowels in NORM (Kendall & Thomas 2009) occurs by taking the difference between Z3 and Z1 for vowel height

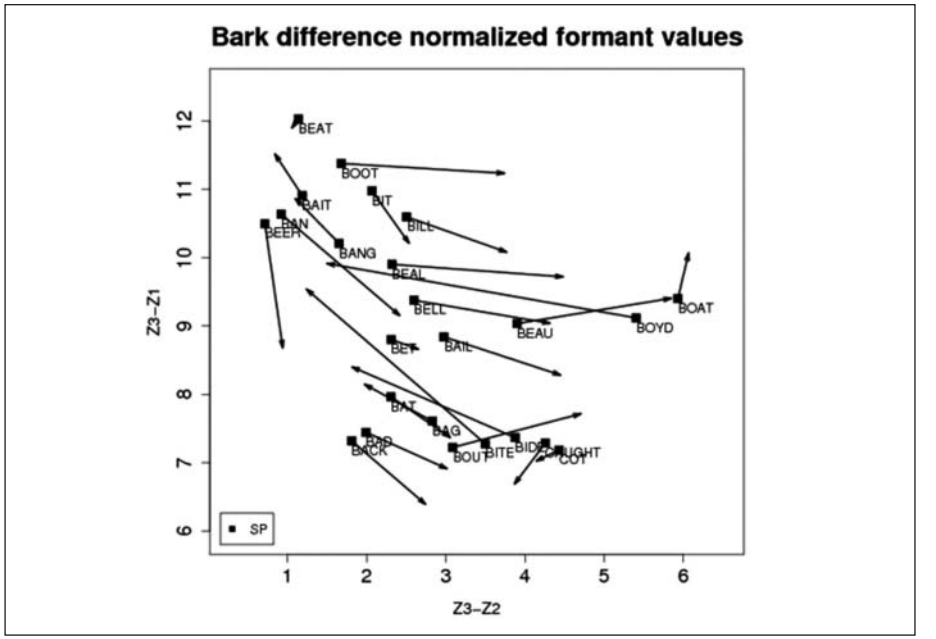

Figure 1. Vowel space of select vowel word classes spoken by Sarah Palin during the 2008 vice presidential debate

and the difference between Z3 and Z2 for vowel backness (Syrdal & Gopal 1986; see Adank, Smits, & van Hout 2004). Following standard sociophonetic practice, capitalized words, such as COT and CAUGHT, represent classes of words (Wells 1982). Word choice for this examination is clearly limited in scope to words used by Sarah Palin in the debate. For classes other than BEAL, BILL, BAIL, BELL, and BEER, words with /l, ɹ/ in onset or coda were avoided to avoid coarticulatory effects on vowel formants. Words in each class are listed in the appendix.

Two features very broadly associated with Western speech are the merger of low back vowels and the prelateral neutralization of tense–lax vowel pairs. Low-Back Merger (COT-CAUGHT merger) or near-merger is widely seen as a feature of the West (Labov, Ash, & Boberg 2006:58-65), and it is also found widely in the Midlands area from Pennsylvania westward and elsewhere. Among Palin's CAUGHT and COT word classes (Figure 1), we observe the Low-Back Merger. The vowels in *talk* and *daughters*, for instance, are produced in the area of the vowel space where we would expect *(tick) tock* and *dotters*. In light of discussion in Di Paolo (1992) and Di Paolo and Faber (1990) as to whether or not Westerners have a merger or near-merger, Figure 1 depicts the two vowel word classes as most likely near-merged, or perhaps merged.[7] Although the mean trajectory for CAUGHT is slightly longer and more advanced than that of COT, the directionality and vowel heads are very similar. Absent perception tests, the merger or

near-merger issue is set aside for the moment. Regardless of whether there is a merger or near-merger, both patterns are characteristic of Western speech.

A somewhat more complex example of a Western feature is the (near-)merger of tense and lax vowels before /l/ (Labov, Ash, & Boberg 2006:69-73). Palin typically produces lax [ɪ] for expected [i:] before coda laterals, as in *id*[ɪ]*l* (*ideal*), *r*[ɪ]*l* (*real*), and with a mid vowel in *det*[ɛ]*led* (*detailed*). Comparing the tense BEAL class of vowels to that of the lax BELL class in Figure 1, we observe that the tense vowel BEAL is lower in the vowel space than BELL. Likewise, the tense BAIL class is lower than the BELL class. Both of the prelateral tense vowel classes are well below the non-prelateral tense vowel classes. The relation of tense and lax vowels in the context of coda laterals was identified as a merger in Western speech by Labov, Yeager, and Steiner (1972) and as a near-merger in Utah by Di Paolo (1988). However, Labov, Ash, and Boberg (2006:285-286, 71, map 9.7) expressly find such pairs distinct in the West generally and in their two Alaskan speakers from Anchorage, although Westerners' perceptions of the distinction were not found to be strong. Like the Low-Back Merger, this feature is found elsewhere, notably in Midlands and Southern varieties.

On these two features, Palin matches expected patterns for someone from the Western United States, but this is a short list of features, and neither is exclusively Western. At the same time, Labov, Ash, and Boberg (2006:279) note that the West lacks the kind of regional coherence and homogeneity of other regions in speech patterns. With regard to the perception of Palin's dialect as Western, these two features appear to provide less indication that her speech should be distinctive or enregistered to generate the amount of discussion it has. It is not clear where either of these markers might be in the third order of indexicality (Silverstein 2003) or stereotyping (Labov 1994). These features have been noticed in various ways in the media and other public perceptions. For instance, imitations of Palin's speech, including Tina Fey's recurring portrayal on *Saturday Night Live*, involve significant fronting of /ɔ/.[8] On the other hand, popular renditions of Palin's speech do not seem to contain prelateral merger. As expected Western features, these may generally fly under the perceptual radar. Let us, then, turn to some less expected and certainly more widely discussed features of her speech.

Apparent Upper Midwestern Features in Sarah Palin's Speech

In addition to the noticeable colloquial patterns and Western features, Palin also evinces Upper Midwestern–like features, such as the realization of *you* as [jʌ] or the stereotypical *you betcha* and *gotcha*.[9] In this section we discuss features associated with Upper Midwestern speech: diphthongization of /æ/, Canadian Raising of /a/ in diphthongs, the back and monophthongal character of /o/ and /u/, and final devoicing of obstruents. In fact, these Upper Midwestern acoustic characteristics may be indexically stronger than Western features, especially prelateral merger. As with the *–ing* feature, perception of these acoustic characteristics of Palin's speech may be stronger than their actual presence.

The role of /æ/ in the sound systems of Upper Midwesterners is complex and often distinguishes speakers from Chicago, Madison, and Minneapolis from one another. Briefly, the broadest American pattern shows /æ/ raising before nasal codas (Labov, Ash, & Boberg 2006: 174-175), so that BAN is higher than BAD, BAT, BAG, or BACK. In the southeastern portion of the Upper Midwest, one observes raised vowel variants in BAD and BAT word classes above BAN. Labov, Ash, and Boberg (2006) argue that this reversal is criterial for the Northern Cities Chain Shift (NCCS). Our experience is that in speech from suburban Chicago, [æ] can be diphthongal where BAD, BAT, BAG, and BACK are all diphthongs ending near [a]. In contrast, speakers in Wisconsin, typically from Milwaukee through Green Bay, can display a diphthongal BAD and a monophthongal BACK. BAT can pattern with either class. Speakers from eastern Minnesota down to Milwaukee often have a raised BAG class where *bag* rhymes with *vague* (Zeller 1997; Labov, Ash, & Boberg 2006; Bauer & Parker 2008; Purnell 2008; Purnell & Salmons forthcoming) or, for many outsiders, can sound like *beg*. Speakers from northern Wisconsin and parts of Michigan's Upper Peninsula tend to have nonraised, monophthongal /æ/.

Figure 1 and Table 2 show the complexity of Palin's /æ/ vowel. To begin with, Palin's BAN and BANG word classes are raised. This is not uncommon throughout the United States, even in areas without diphthongization or raising for /æ/. However, the head of her BAD, BACK, and BAT classes are not raised (toward 9 bark), although they are clearly diphthongal in nature. Notice in the waveform and spectrogram of Palin saying *pack* (Figure 2), a high and rising first formant, a falling second formant, and a stable third formant indicating diphthongization. Finally, it is worth pointing out that when the head of BAG is raised in the Upper Midwest, the tail is higher than the head (resembling [eɪ]). For the one token of Palin's BAG class, the direction of the diphthong is pointing up even though the head is low.

Related to this diphthongization pattern for /æ/, the low vowel /a/ can vary across the region. If a speaker is participating in the NCCS, then /a/ is fronted near or in front of 3 bark on the F3-F2 axis. If the speaker is not participating in the NCCS, which is the case for most of Wisconsin and Minnesota in our experience, /a/ is more central, or between 3 and 4 bark on the F3-F2 axis. For speakers from Minnesota or the western edge of Wisconsin, /ɔ/ has merged with /a/ or at least tends to be low and central. Compared with this, Sarah Palin's /a/ (the COT word class) appears slightly back, behind the head of the three diphthong classes BITE, BIDE, and BOUT, and raised slightly away from where the tails in the /æ/ vowel classes and CAUGHT class point. Canadian Raising of the head of the BITE vowels would make the head of this class more centralized, whereas we observe only slight raising in her vowel space. (Likewise, we do not observe the Canadian pronunciation of *s*[o]*rry*—compared to the more typical U.S. pronunciation of *s*[a]*rry*—when Palin says *tom*[a]*rrow* "tomorrow" and *b*[a]*rrow* "borrow.") We might expect even more raising, consistent with speech in contact with Canadian Raising regions (Rankinen 2008). However, the style expected for a broad non-Canadian audience might not be conducive to Canadian pronunciation.

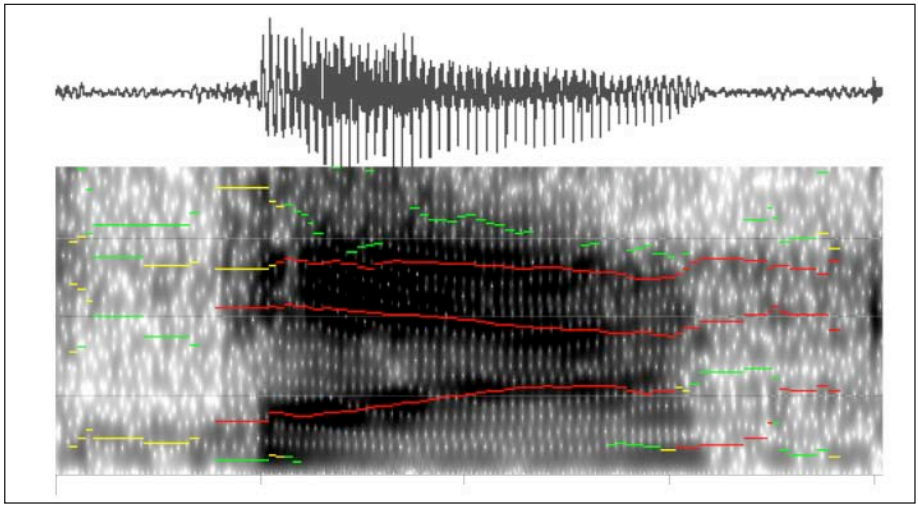

Figure 2. Waveform and spectrogram of *pack* from "Joe Six Pack, hockey moms"

Table 2. Bark Normalized Formant Values for Selected Word Classes

		Head	Head	Tail	Tail
Vowel	*n*	Z3-Z1	Z3-Z2	Z3-Z1	Z3-Z2
BACK	6	7.3	1.8	6.4	2.7
BAD	5	7.4	2.0	6.9	3.0
BAG	1	7.6	2.8	8.1	2.0
BAIL	2	8.8	3.0	8.3	4.5
BAIT	5	10.9	1.2	11.5	0.8
BAN	5	10.6	0.9	9.2	2.4
BANG	5	10.2	1.7	10.9	1.1
BAT	12	8.0	2.3	7.4	3.1
BEAL	5	9.9	2.3	9.7	4.5
BEAT	5	12.0	1.1	11.9	1.1
BEAU	7	9.0	3.9	9.4	5.8
BEER	5	10.5	0.7	8.7	0.9
BELL	5	9.4	2.6	9.0	4.3
BET	5	8.8	2.3	8.7	2.7
BIDE	7	7.4	3.9	8.4	1.8
BILL	5	10.6	2.5	10.1	3.8
BIT	5	11.0	2.1	10.2	2.5
BITE	4	7.3	3.5	9.5	1.2
BOAT	6	9.4	5.9	10.1	6.1
BOOT	6	11.4	1.7	11.2	3.7
BOUT	5	7.2	3.1	7.7	4.7
BOYD	5	9.1	5.4	9.9	1.5
CAUGHT	5	7.3	4.3	6.7	3.9
COT	8	7.2	4.4	7.0	4.1

A stereotype of Upper Midwestern and Minnesotan speech in particular is that the back tense vowels are more tense and monophthongal than in other regions of the United States (e.g., the stereotype of "Minnesooota"). A /u/ fronting pattern is generally attested in the Western United States, in contrast to Minnesota and much of Wisconsin (Labov, Ash, & Boberg 2006:154, 156). For Sarah Palin, Figure 1 shows BOOT in a nonback position; BOOT is nearing BEAT on the F3-F2 axis, although this is presumably because of alveolar onsets (Labov, Ash, & Boberg 2006:143-145). Although Labov, in his October 2, 2008, NPR interview with Robert Siegel, noted that Palin's /o/ is not a "strong" /o/, the samples played were words with open syllables, *g*[oː]*in' with the status qu*[oː]. Suspecting that open syllable and closed syllables are different for /o/, we separated tokens with /o/ into the BOAT class for tokens with a coda consonant and the BEAU class of open syllable words. We observe that the BEAU class frequently lengthens in prosodically strong positions. In Figure 1, the BOAT class tokens are back and slightly rising diphthongs ([o^{u}]) while the head of the BEAU class is fronted above BIDE and diphthongal such that the tail of BEAU is at the head of BOAT (hence, [əo] or [ʌo]). In light of the patterns discussed here, Labov, Ash, and Boberg (2006:138) claim that "on the whole, the West can be defined as the region of Low-Back Merger with strong fronting of /uw/ in *too* and, *do*, but limited fronting of /ow/ in *go* and *road*." Palin's vowel classes in Figure 1 demonstrate this Western pattern. Where Palin diverges from these distinctly Western patterns is that she has two /o/ classes, one of which (BEAU) appears more Upper Midwestern.

Another salient sound pattern associated with the Upper Midwest is devoicing of final obstruents. Even though this is not mentioned in the national media regarding Palin, it is clearly a nationally recognized feature, as demonstrated in the *Saturday Night Live* recurring skit "Bill Swerski's Superfans" from the early 1990s, where phrases such as "da Bears" and "da Bulls" were said with emphasized final devoicing. Smith (1997) found that devoicing of /z/ in prosodically strong positions occurs in American English but that the voicing distinction is maintained—that is, the /z/ does not entirely manifest /s/ qualities. Bauer (2005) found that older speakers in the Iron Range of Minnesota harden, or devoice, fricatives in prosodically strong position. Purnell, Salmons, and Tepeli (2005) and Purnell, Salmons, Tepeli, and Mercer (2005) argue that a devoicing (or fortition) pattern appears especially strong among younger speakers in the region as a reallocated feature ultimately reflecting the (indirect) influence of devoicing immigrant languages, mostly Germanic (German, Dutch) and Slavic (Polish). Palin's behavior is related to but different than simple final fortition (Iverson & Salmons 1995). Table 3 shows the percentage of glottal pulsing (duration of pulsing divided by duration of the alveolar fricative) during one timed response of approximately 80 seconds of the vice presidential debate (beginning at 6:52).

In this passage, Palin assimilates the voiced alveolar fricative to a following voiceless sound even over a pause (as first transcribed and then measured by the percentage of glottal pulsing in the closure gap; voicelessness < 50 percent). Out of the twenty-one examples in Table 3, nineteen show laryngeal assimilation to following sounds: /z/ is voiced eight times because the following sound is voiced and /z/ is devoiced eleven times because the following item is voiceless or a pause. Only the last two examples

Table 3. Sarah Palin's Apical Fricative Voicing Assimilation in a Passage from the Vice Presidential Debate

Words[a]	Duration of Fricative (msec)	Duration Pulsing in Fricative (msec)	% Glottal Pulsing in Fricative	Pause Duration (msec)
Before voiced word-initial obstruent, sonorant, or vowel				
was [əzð] the	54.5	54.5	100	
Americans [nzɪ] into	120.1	62.7	52	
was [əzd] deception	57.8	57.8	100	
was [əzg] greed	85.2	85.2	100	
Americans [nzd] do	75.7	75.7	100	
moms [mzə] across	76.7	48.1	63	
ourselves [vzɪ] in	173.5	110.4	64	
individuals [əlzw] we're	112.7	77.2	68	
Before voiceless word-initial obstruent				
was [əss] smart	70.9	27.6	39	
is [ɪsk] corruption	83.1	20.4	24	
peoples [əlsf] fault	96.4	11.3	12	
is [ɪsh] hurting	59.0	19.4	33	
Before pauses[b]				
lenders [ə˞sPh], who	39.8	5.9	15	68.5
ourselves [vsPdʒ] just	47.1	5.9	12	295.1
as [æsPɪ] individuals	119.1	40.3	34	48.6
dollars [ə˞sPw]. We	145.9	34.1	23	318.4
entities [isPɪ] in	144.9	50.5	35	271.6
savings [ŋsPæ] and	119.6	25.3	21	395.4
means [nsPw]. We	186.3	54.7	29	296.0
Unexpected patterns				
is [ɪzPb]*, but	56.0	45.5	81	265.3
lessons [nzθ]* through	70.2	28.2	40	

a. The actual phonetic sequence of sounds is represented in square brackets between the words in this column. Choice of [s] or [z] was determined from a careful listening of the word.
b. P = pause.

in Table 3 violate this pattern, both showing voicing. While this differs from the phrase-internal devoicing patterns found in Wisconsin, Palin's pause-related devoicing is consistent with nascent phonological devoicing, as argued by Hock (1999), Blevins (2004), Iverson and Salmons (2007, forthcoming), and others. In addition to not being driven by syntactic phrases but adjacency to voiceless sounds and performance pauses, Palin's devoicing differs from the Iron Range pattern reported by Bauer (2005) in that the fricative devoicing occurs not by maintaining the duration of glottal

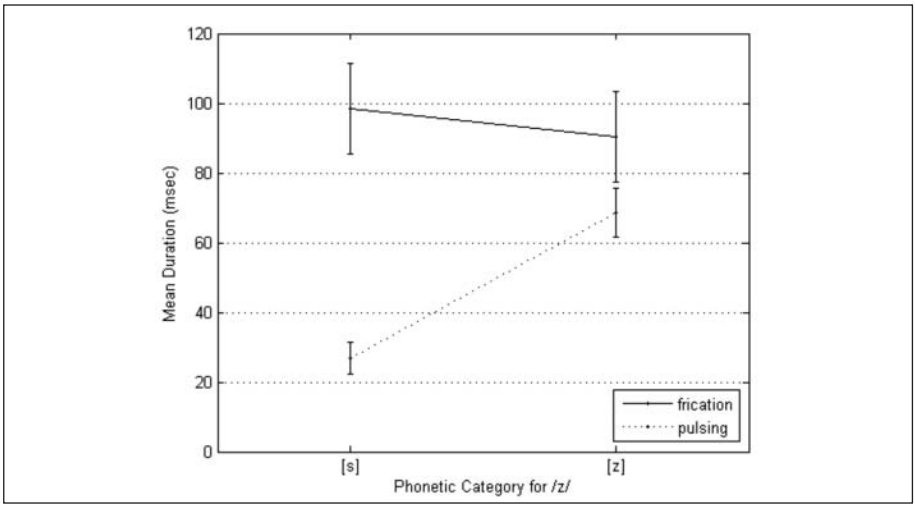

Figure 3. Voicing patterns of Sarah Palin's /z/ ([s]~[z]) by duration of frication and duration of glottal pulsing

pulsing but by maintaining the duration of the fricative. This is apparent from the error bar plot in Figure 3. The duration of the frication for /z/:[z] and /z/:[s] is not significantly different in a simple ANOVA comparison, $F(1, 19) = 0.19$, $p = .67$, whereas the duration of the pulsing of the two surface sounds is significantly distinct, $F(1, 19) = 27.09$, $p < .05$. This pattern is important because Palin's /z/:[s] pattern is partially characteristic of general American /s/ (low percentage glottal pulsing), while traditionally an /s/ is longer than a /z/; here, they are the same.

The prevalence of /z/ assimilating via coarticulation and across a performance pause boundary might contribute to listeners perceiving Palin as an Upper Midwesterner, although not on its own. This observation parallels those made earlier about Palin's use of euphemisms and g-dropping. Her actual overall behavior is not how listeners categorize Palin's voice. Rather, it is the perceived behavior that demonstrates indexicality; the question is whether Palin's behavior exceeds a hearer's expectations about particular dialect features. One thing we can learn from Sarah Palin is that voicing assimilation across a pause boundary may contribute to listeners placing such speakers in the Upper Midwest.

To summarize the acoustic analysis presented here, we can say that Sarah Palin's speech has an unraised but diphthongal /æ/, Low-Back (near-)Merger, prelateral merger, split of BOAT and BEAU vowels, fronting of BOOT, and backing of BOAT. In this regard, her speech is a mixture of features distributed broadly across the United States and Canada. This suggests that, as with *–ing*, the presence of some suggestive markers (/æ/ diphthongization in particular) is enough to prompt many of us to hear Sarah Palin's speech as being Upper Midwestern.

Dialect Formation

That Palin's dialect is perceived to be Upper Midwestern across the nation comes as less of a surprise when we consider the context of dialect formation in the parts of Alaska where she spent most of her formative years, specifically her hometown of Wasilla.[10] This history, along with Palin's use of colloquial forms in extremely formal situations, is important for understanding where her speech fits in American society today and connects the notion that a dialect arises from such historical events as migration, contact, and so on (Romaine 2002) to another notion of dialect, namely, that a listener labels a person's voice according to a set of categories in the listener's brain and not from any specific fact about the speaker (Preston 1989).

It has now been pointed out repeatedly in the media (including in some of the links given at the outset of this article) that the Matanuska-Susitna Valley, where Wasilla is located, saw its first large-scale white settlement with an influx of residents from depressed areas of the Upper Midwest. In 1935, over two hundred families from Minnesota, Wisconsin, and Michigan resettled in the Alaskan territory in an attempt to develop a farming community. Many descendants of those settlers still reside in the Matanuska-Susitna Valley.[11] Families from at least sixty-three counties in each of the three states—Michigan (twenty-nine counties), Minnesota (thirteen counties), and Wisconsin (twenty-one counties)—migrated through the Matanuska Colonization Project (Figure 4). Comparing the counties' 1930 census data of population per square mile, Table 4 shows that all of the migrants came from counties below the state average density, with the exception of five counties.

One relevant aspect of this narrative is that many of the communities in the northern portion of these states were settled especially heavily by immigrants, even by the standards of the region, and not by so-called "Yankee" or Southern migrants. Taking Wisconsin as an example, the 1930 census identifies specific counties as having high concentrations of immigrants of particular backgrounds: German (Sheboygan County), Norwegian (Douglas, Barron, and Trempealeau Counties), Swedish (Douglas and Polk Counties), and Finnish (Douglas County). As a case in point, the 1930 census for Douglas County—a county sending nine families to Alaska—reported that out of a total population of 46,583, under the category of "White persons born in . . ." there were 2,747 Swedes, 1,956 Norwegians, 1,359 Finns, 767 Poles, and 487 Germans. On top of this are 13,807 residents of the county who reported foreign-born parents. In short, at least 45 percent of Douglas County reported being either first- or second-generation immigrants (Table 4).[12]

In addition, the Yankees in the areas where these settlers came from were more likely to be part of the established wealth (Buenker 1998:180). They were thus presumably less willing to move out of the state. Poorer Yankee, Midland, or Southern settlers who came into the Upper Midwest tended to stay in the southern parts of the region. For example, settlers from Missouri remained in southwestern Wisconsin, and those who migrated north from Appalachia stayed in southern Michigan. The overall percentage of people in the three states reporting foreign-born parents in 1930 was

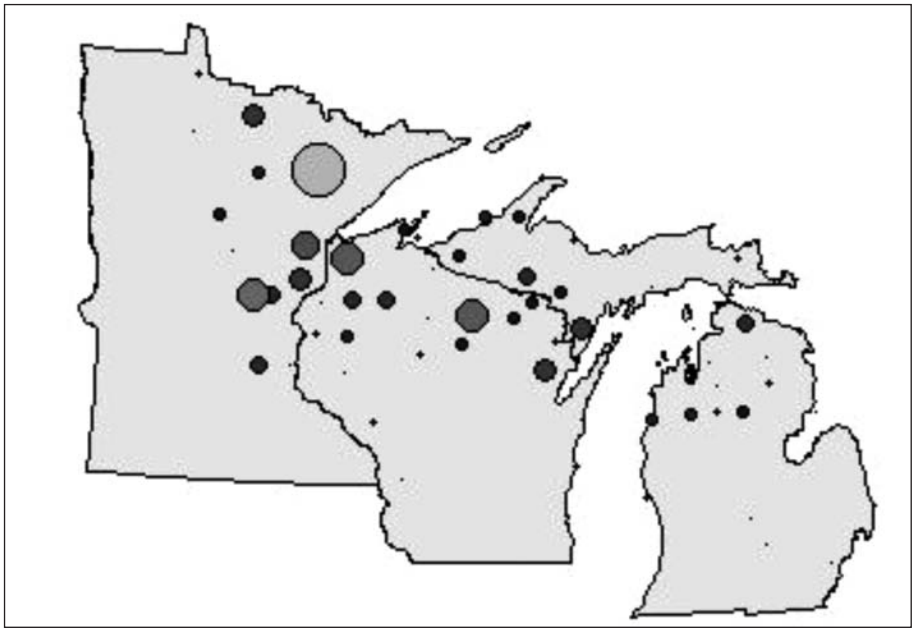

Figure 4. Counties in Minnesota, Wisconsin, and Michigan sending migrants to Matanuska-Susitna Valley, Alaska
Note: Size of dot represents number of families (of a minimum of one and a maximum of fifteen).

19.0 percent for Michigan, 25.6 percent for Minnesota, and 23.8 percent for Wisconsin. Figure 5 shows that 65.7 percent of the families overall came from communities with a percentage of residents with foreign-born parents greater than the state average. This varied by states; Michigan and Wisconsin both had 62.7 percent, while Minnesota had 71.6 percent. Given what we have argued elsewhere about immigration and its impact on Wisconsin English (Purnell, Salmons, & Tepeli 2005; Purnell, Salmons, Tepeli, & Mercer 2005; Wilkerson & Salmons 2008; Purnell & Salmons forthcoming; Salmons & Purnell forthcoming), the low density of residents and the high percentage of immigrant families traveling together to settle in a new area are prime targets for *koinéization* (dialect formation). Moreover, if these residents significantly increased the population already from the Upper Midwest in the valley, then we might expect a Founder Effect (Mufwene 2001), where early immigrant speech patterns have more influence over the existing patterns than those of later immigrants.[13]

Even with leveling of exceptional features from the immigrant substrate in the Upper Midwest—in the sense of leveling in Kerswill and Trudgill (2005)—we argue that the speech of the Matanuska-Susitna Valley is, in fact, influenced by the speech patterns in the rural and immigrant-settled Upper Midwest. A central component of new dialect formation, beyond such demographics, is that several generations are

Table 4. 1930 Census Characteristics of the Upper Midwestern Counties Sending Migrants to Matanuska-Susitna Valley, Alaska

Michigan	Families	Density[a]	Immigrant (%)[b]	Minnesota	Families	Density	Immigrant (%)	Wisconsin	Families	Density	Immigrant (%)
Menominee	6	224	39.7	St. Louis	15	119	52.1	Douglas	9	348	45.3
Cheboygan	5	159	20.2	Mille Lacs	10	143	39.8	Oneida	9	134	30.1
Iron	5	173	52.9	Carlton	8	242	50.7	Oconto	6	236	33.4
Manistee	4	310	38.8	Koochiching	6	31	35.9	Sawyer	5	67	29.9
Ontonagon	4	83	56.6	Pine	6	624	39.7	Washburn	5	133	23.9
Wexford	4	292	18.4	Hennepin	5	45	36.4	Barron	4	195	42.5
Dickinson	3	386	40.9	Kanabec	5	31	42.4	Bayfield	3	388	49.2
Gogebic	3	279	57.4	Itasca	4	31	38.4	Florence	3	76	43.8
Houghton	3	519	54.8	Cass	3	242	21.4	Forest	3	109	22.3
Roscommon	3	38	18.3	Lake of the Woods	2	31	37.9	Lincoln	3	234	35.0
Benzie	2	210	16.0	Beltrami	1	74	27.8	Ashland	2	195	42.5
Chippewa	2	159	30.1	Crow Wing	1	242	31.6	Marinette	2	237	37.2
Keweenaw	2	92	57.9	Washington	1	109	35.0	Polk	2	284	35.1
Marquette	2	236	46.8					Sheboygan	2	1,367	32.8
Missaukee	2	120	18.7					Taylor	2	178	41.7
Muskegon	2	1,679	24.8					Trempealeau	2	320	34.7
Oscoda	2	30	6.4					Burnett	1	119	36.4
Presque Isle	2	167	28.9					Dunn	1	311	29.6
Alcona	1	73	22.9					Iron	1	125	54.1
Antrim	1	210	15.6					Price	1	135	42.3
Charlevoix	1	292	17.2					Vernon	1	320	22.6
Clinton	1	423	11.5								
Delta	1	276	38.5								
Ingham	1	2,108	11.4								
Iosco	1	132	24.0								
Kalkaska	1	66	8.1								
Montmorency	1	50	18.8								
Schoolcraft	1	70	28.6								
Wayne	1	30,467	29.9								
State average		842				317				532	

a. Density is the county population divided by the square-mile area of the county.

b. Immigrant is the percentage of the county population that is first or second generation immigrant, that is, who reported either being born in another country or having parents born in another country.

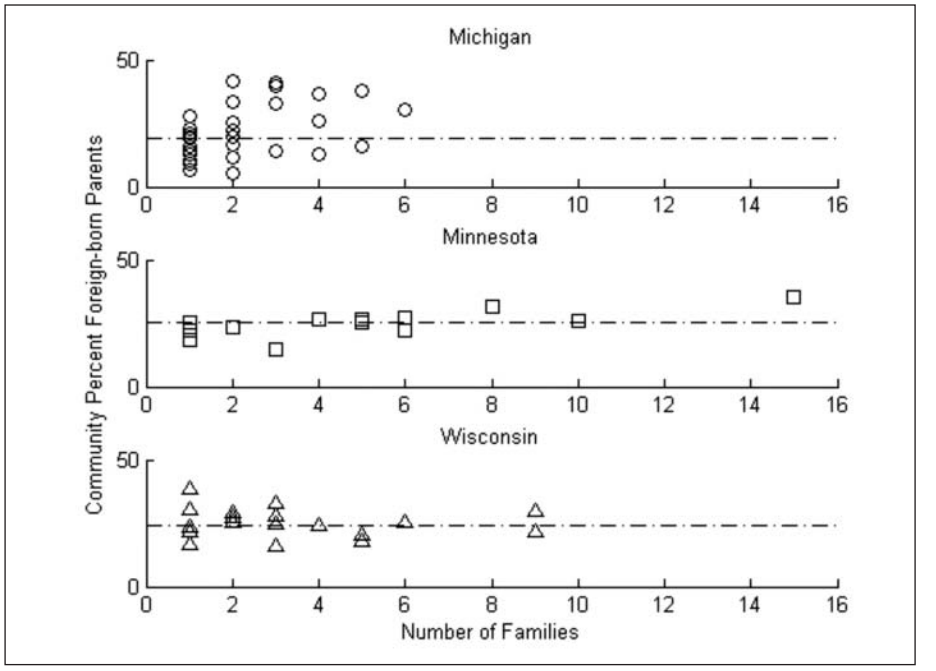

Figure 5. Distribution of communities by the number of families and percentage of community with foreign-born parents reported on the 1930 census

needed for a dialect to take shape. While original adult settlers may not change their speech patterns, and while the third or fourth generation in the new community may well have negotiated a new variety, the intervening generations show tremendous variability, drawing on the pool of input available from older speakers and peers in the community. In such a scenario, Palin's generation still represents a stage of high variability, not the yet-to-be-formed koiné.

Conclusion

At the outset we noted that the interest in Palin's speech highlighted various interpretations of *dialect*, particularly as a historical derivative, subordinate variety, and perceptual entity. This article has argued that Palin's dialect is likely influenced by migration from the Upper Midwest during the 1930s. In particular, if there is substrate influence from the immigrants to the Upper Midwest, then that influence may be seen as reallocated features in the Matanuska-Susitna Valley. In terms of subordinate variety and perceptual entity, this article suggests that the small number of socially marked features in her speech (e.g., g-dropping, *betcha*, etc.) and the violation of our expectations of a more formal register for

a vice presidential debate trigger perceptual categories that broadly index the Upper Midwest. In this way, we can use Palin's speech as a cultural indicator of voice properties enregistered at the national level.

Sarah Palin's speech presents us with a constellation of ways that language can vary and be perceived as varying in American culture—socially, historically, and regionally. Consider the specific findings:

- Palin uses a number of remarkably informal patterns, even in a vice presidential debate, from euphemistic usage (*heck*, *darn*, etc.) and distinctive discourse markers (stereotypical *you betcha*, etc.) to phonological markers of informality.
- With regard to the last, her "g-dropping," the impression left may be of pervasive use, but its actual use is both limited and systematic.
- Palin shows clearly identifiable Western features such as such as Low-Back Merger, (near-) merger of tense and lax vowels before coda laterals, a fronted BOOT vowel, and a backed BOAT vowel.
- Palin shows clearly identifiable Upper Midwestern features in her discourse markers (*you betcha*, etc.) and in her phonology (final devoicing, BEAU fronting and /æ/ diphthongization).
- Ostensibly Upper Midwest features outweigh the Western features in Palin's speech, even though they are not necessarily categorical or even high-frequency patterns (e.g., final devoicing) nor identical to patterns found among speakers in Wisconsin or Minnesota today (vowel acoustics).
- Clear echoes of salient Upper Midwest features found their way to Alaska via immigration of speakers from Michigan, Minnesota, and Wisconsin in 1935, such recent immigrations that their presence should still be felt today.

What may be most important here for those concerned with language variation and change is the last point above, namely, that Sarah Palin's dialect lacks certain features of contemporary Upper Midwestern English. It is those absent innovations set against perceptions of Palin's speech that linguists may ultimately find more interesting than the actual presence of her Western features. For example, we do not hear her pronounce *flag* as fl[ɛ]g or fl[eɪ]g (cf. Zeller 1997; Bauer & Parker 2008; Purnell 2008), although the tail is higher than the head, typical of raised tokens in the BAG class. If her dialect is connected to the Upper Midwest, did the rise in BAG as BEG occur after the 1935 migration? Purnell and Salmons (forthcoming) suggest that this pattern in southeastern Wisconsin may be tied to the northward advancement of the NCCS (Labov 1994). If the raised BAG was present in part of the region (e.g., the Iron Range in Minnesota), would the feature be so "abnormal" to the Western dialects so that the *koiné* that emerges in Alaska lacks this pattern while retaining other aspects of the dialect? More research is needed from historical records in both Alaska and the Upper Midwest before the picture will become clear. In addition, we suspect that the dialect geography of Alaska is complex, with many "outsiders" settling in the state; these dialect

variations too need to be studied. The larger issue for Sarah Palin's dialect features in particular is that she was raised in the community well within the period of reallocation of features and new dialect formation to occur (Kerswill & Trudgill 2005). Dialect formation is surely still ongoing today in this area, and the local variety is volatile, containing disparate elements from the input varieties. From that perspective, the reactions to Palin's regional accent are utterly sensible. She presents us with a pattern of Western speech showing expected Western features but also one where a set of Upper Midwestern features persevere.

Sarah Palin's rise to the national stage and into our national linguistic awareness may ultimately benefit both linguists and the broader public in their understanding of dialects in North America. Although Palin's idiolect may appear unique to many Americans, we may be as wrong about this observation as we are about how many times she says *doggone*. In the end, dialect variation regularly shows the same complex levels of interaction among language, society, and history that we have found here.

Appendix

Words in Each Word Class

Word Class	Examples
BACK	back, mac, pack, tax
BAD	adversely, had (stressed), have (stressed), maverick
BAG	flag
BAIL	detail
BAIT	gave, major, mate, state, take
BAN	and (stressed), band, Fannie, fans
BANG	thank
BAT	as, ask, has, past, perhaps, Saturday, that
BEAL	feel, feeling, real
BEAT	Fannie, Freddie, people, seen, heat
BEAU	ago, also, Conoco, Joe, know, so, though
BEER	here, hear, fear, years
BELL	bell, else, tell
BET	betcha, investments, federal, efforts
BIDE	aside, bipartisan, I, I've, sideline
BILL	kill, millions, billions
BIT	this, is, kids, politics, hit
BITE	like, sight, white
BOAT	folks, mode, over, those, votes
BOOT	do, new, to
BOUT	about, how, resounding
BOYD	joys, choice, exploited
CAUGHT	office, talk, talking
COT	hockey, job, moms, not, positive, stock, stop, toxic

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Notes

1. Links to the comments can be found, respectively, at http://www.npr.org/templates/story/story.php?storyId=95306504, http://www.archive.org/details/Mother-Jones-Linguist-Robin-Lakoff-Analyzes-Palins-Accent, http://www.nytimes.com/2008/10/04/opinion/04pinker.html, and http://www.slate.com/id/2201318.
2. Links to the blogs are http://www.mr-verb.blogspot.com and http://languagelog.ldc.upenn.edu/nll.
3. Our distinct perspective on this comes from being members of the Wisconsin Englishes Project, where we are exploring Upper Midwestern speech in its many forms and probing its complex origins. Although the "Upper Midwest" can include North Dakota, South Dakota, Iowa, and areas beyond, the term in the particular context of this article more narrowly refers to Minnesota, Wisconsin, and the Upper Peninsula of Michigan.
4. The recording can be found at http://elections.nytimes.com/2008/president/debates/transcripts/vice-presidential-debate.html.
5. Such impressions have come from conversations with colleagues and others but can also be found in the media.
6. We note the familiar point that the reduced form *gonna* is possible only for the auxiliary: *we're gonna win / *we're gonna Chicago*. See Hopper and Traugott (1993:1-4).
7. Marianna Di Paolo (pers. comm.) indicates that, drawing on her work in Utah, the glides suggest near-merger rather than merger.
8. This could be capturing Low-Back Merger or Northern Cities Chain Shift.
9. Anecdotally, for several groups of listeners in classes and public events, when played passages of the debate and asked which of the features in Palin's voice were most Upper Midwestern, these two forms were invariably at the top of the list. Given, however, that Erica Benson (pers. comm.) and Robin Lakoff (2008) suggest these forms are tied to informal or working-class speech, a productive line of follow-up research would be to examine whether the Upper Midwestern dialect, particularly the stereotypes akin to those in *Fargo*, are considered the non-Southern "pleasant" speech in the lines of Preston (2000).

10. We became aware of this from comments by James Crippen to a post on the blog Mr. Verb.
11. See information on *Alaska Far Away* (2007, http://www.alaskafaraway.com), a film by Paul Hill and Joan Juster in which descendents are interviewed.
12. Data from the 1930 census were taken from the Historical Census Browser (University of Virginia, Geospatial and Statistical Data Center 2004).
13. Although there are limitations on knowing the population in the valley between the 1930 and 1940 censuses and the actual number of people arriving in the Alaskan territory as opposed to families, an estimation can be made of the impact of the migration on the existing population by adding 400 people to a population of 780 (U.S. Bureau of the Census 1930). The percentage of the population from Minnesota, Michigan, and Wisconsin would have expanded from below 10 percent to just under 40 percent, surpassing the percentage of people born in Alaska.

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