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# DIALECT IDENTIFICATION: THE EFFECTS OF REGION OF ORIGIN AND AMOUNT OF EXPERIENCE

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**ABSTRACT.** This study examines whether two factors, region of origin (i.e., being from either Utah, Western states, or non-Western states) and amount of experience for those not native to Utah (having less than one, more than one but less than five, or over five years living in Utah), influence how well listeners are able to distinguish between Utah and non-Utah speakers and what phonetic characteristics they use to do so. The results suggest that the more similar the listener's dialect is to Utah English, the better his or her ability to identify Utah speakers. Moreover, it was found that listeners from Utah use less stereotypical characteristics of Utah English for identifying Utahns from non-Utahns; those from the Western United States and other locations use more. This study demonstrates that listeners with more experience with Utah English are better able to identify Utah speakers than those with less experience. These findings are also examined in light of stereotypical perceptions of both Utah English and the phonetic characteristics examined in this study.

**F**OR DECADES, RESEARCHERS have studied listeners' perceptions of dialects and have enlightened our understanding of a number of issues, including dialect prejudice (e.g., Kerswill and Williams 2002), dialect boundaries (e.g., Diercks 1999; Goeman 2002), and dialect continua (e.g., Heeringa and Nerbonne 2001). A basic assumption of these studies has been that listeners accurately identify differences between dialects of their native language. However, in recent years, perceptual dialectologists have examined whether listeners are able to identify dialects accurately, as well as what social and linguistic factors affect this accuracy (Williams, Garrett, and Coupland 1999; Kerswill 2002; Kerswill and Williams 2002).

One of the main factors examined in previous research is the amount and type of familiarity listeners have had with varieties not their own (e.g., Kerswill and Williams 2002). Listeners with more familiarity should be better able to identify a variety than listeners with less familiarity. In most studies, this has been the case (e.g., Kerswill and Williams 2002; Clopper and Pisoni

2006). However, there are several ways to measure dialect familiarity (such as familiarity with a particular variety versus familiarity with several varieties), and each of these measurements may affect dialect identification differently. To test this proposition, we examined two types of dialect familiarity and measured their effect on dialect identification: region of origin, defined as the area in which a person was raised, and amount of experience, defined as how long one has lived in the area where a nonnative variety is spoken (Chambers 1992, 1998).

In addition, listeners who are from regions near a specific variety of a language may use different characteristics to identify that variety than listeners who are from more distant regions. Therefore, we also examined the effect the two types of familiarity have on which phonetic characteristics are used for dialect identification.

### REGION OF ORIGIN

Listeners can be quite successful when asked to identify broad distinctions between different varieties of the same language—at least for varieties with which they are familiar and that are highly visible in the media (Bauvois 1996; Cunningham-Andersson 1996; Clopper and Pisoni 2004a)—to the point of being able to accurately identify a speaker's region of origin down to specific cities (Bauvois 1996). In fact, listeners need to hear relatively little input in order to identify these differences. For example, it has been shown that listeners can sometimes identify differences between ethnic varieties of English after hearing a single word (Purnell, Idsardi, and Baugh 1999).

This ability to identify different varieties is most likely related to one's region of origin. That is, since regional varieties that are close to each other are often more similar, it may be that listeners from regionally similar varieties are better able to perceive more nuanced differences between those varieties than listeners from more distant areas. For example, Garrett, Coupland, and Williams (1999) asked adolescent residents of Wales to identify Welsh speakers' hometowns. They found that, although the listeners performed poorly on this task in general, they were more accurate in identifying speakers from their own Welsh variety than those from other Welsh varieties. Corroborating results from Preston (1996) show that listeners can more correctly identify varieties from regions close to them compared to distant ones. In his study, Northerners were able to differentiate Northern varieties of American English better than non-Northerners. Clopper and Pisoni (2006) demonstrated that the same holds true for listeners when identifying many varieties in the United States.

Moreover, Kerswill and Williams (2002) suggested that aspects of the variety itself may determine how accurately it is identified. Their research examined two communities in England—one of which (Hull) was more accurate in identifying members of its own variety than was the other (Reading). They discovered that the listeners from the “focused” speech community—those with relatively little lexical and phonetic variation across speakers and across situations (Le Page 1978)—were more accurate at identifying speakers from their community than were listeners from the speech community that was “diffused” or had much greater lexical and phonetic variation among its speakers.

From the results of Kerswill and Williams (2002), we may hypothesize that listeners use different phonetic characteristics in dialect identification depending on their region of origin. Although little research has examined this hypothesis directly, a study by Fridland, Bartlett, and Kreuz (2004) found that speakers of Southern U.S. varieties of English were able to distinguish between vowels that contained characteristics of Southern U.S. English when compared to vowels that do not, while Northerners were not able to do so. Similarly, Clopper and Pisoni (2004b) demonstrated that American English listeners used different vowels to identify different American English varieties.

In sum, these results suggest that a listener’s region of origin may influence how well a variety is identified. It also demonstrates that region of origin may influence which phonetic characteristics listeners use to identify a specific variety of their language. However, little research has examined what specific phonetic characteristics listeners from different regions use to identify a specific variety. For this reason, we included this as one of the main goals of the present study.

#### AMOUNT OF EXPERIENCE

Another type of familiarity that may affect dialect identification is the amount of experience listeners have with a particular variety that is not their native variety. Studies have determined that speakers not native to a dialect with more experience with the dialect are more accurate at identifying the dialect than those with less experience (i.e., Preston 1993), but surprisingly little research has examined whether the amount of experience plays a role in being able to perceive differences between varieties not previously known to the listener. While these varieties could be considered “nonnative” varieties, this term may erroneously be perceived as referring to listeners who are not native speakers of English. For that reason, in the discussion below we will

use the term “amount of experience” to mean amount of experience with a variety not previously known to the listener.

While few studies have examined whether amount of experience affects a listener’s ability to PERCEIVE previously unknown varieties, several studies have examined whether amount of experience influences whether a person acquires (i.e., produces) aspects of another variety (Payne 1980; Chambers 1992; Clyne 1992). For example, Payne (1980) demonstrated that transplants to Philadelphia acquire some, but not all, the characteristics of the Philadelphian variety of English. Their ability to do so is related to their amount of experience with the variety and the age at which they first came into contact with it. Similarly, Chambers (1992) observed that amount of experience plays a significant role in the ability of transplanted Canadian children to use aspects of British English. However, transplants began to use lexical and syntactic characteristics much earlier than phonetic ones. These studies document the factors that influence how people acquire the phonetic characteristics of a new variety, but they do not indicate when or to what degree listeners are able to PERCEIVE the characteristics of another variety.

Bowie (2000), on the other hand, did examine whether listeners are able to PERCEIVE or identify characteristics of a variety. He tested whether listeners originally from Maryland perceived vowel pairs according to their native variety of English (which often merges the vowels in *pool*, *pull*, and *pole*) or whether they perceived vowel pairs according to their second (acquired) variety where these vowel pairs are not merged. Amount of experience and age of acquisition of the variety both played important roles in whether they perceived vowels like listeners of their first or second variety. Besides Bowie’s, we have found no other studies designed to determine how amount of experience influences the PERCEPTION of different varieties.

However, another line of research that focuses on dialect perception has examined whether linguistic experience with several different varieties influences dialect identification. Recent research by Clopper and Pisoni (2004a) discovered that listeners who had lived in many places (“army brats”) were better at correctly identifying different varieties of American English than listeners who had lived most of their lives in one place (“homebodies”). Army brats were more accurate than homebodies in identifying varieties of English even from places where they had never lived. Given these findings, it may also be the case that experience with a particular variety would also affect a listener’s ability to accurately identify that variety.

Moreover, it is possible that the amount of experience listeners have with an acquired variety could also influence what phonetic characteristics they use to identify it. Although no research has directly examined this hypothesis in dialect identification, studies examining second-language acquisition and

amount of experience demonstrate that experience with the second language allows one to more accurately perceive some (i.e., Flege, Bohn, and Jang 1997), but not all (i.e., Takagi and Mann 1995), phonetic characteristics of a second language. For example, Flege, Bohn, and Jang (1997) demonstrated that speakers from several language backgrounds were better able to perceive and produce English vowels that were unlike vowels in their native language than vowels that were similar to those in their native language(s). In addition, one study observed that amount of experience with a second language affects how accurately one can identify varieties of that second language (Cunningham-Andersson 1996). Studies such as these indicate that amount of experience with a variety other than the native variety may help listeners attend to phonetic differences between different languages (and perhaps varieties of those languages) and that this ability may help listeners with dialect identification. However, we are unaware of any research that has specifically examined this question.

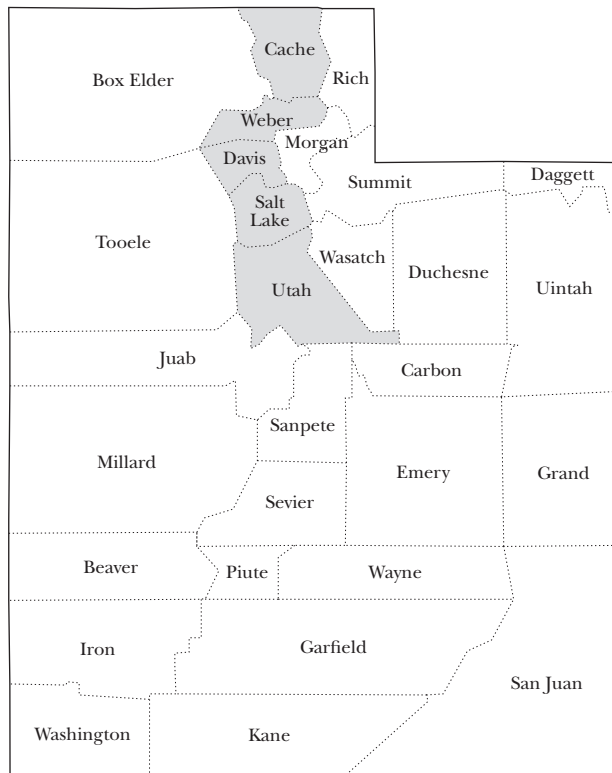
#### CURRENT STUDY

The purpose of our study was to determine whether these two types of dialect familiarity—region of origin and amount of experience—affect how accurately varieties of English are identified. In addition, we were interested in pinpointing which phonetic characteristics listeners use to identify differences between different varieties. To this end, native English listeners from three different regions of the United States who had varying amounts of experience with the variety in question listened to recorded sentences. They were then asked to determine whether a particular speaker was or was not from the region of interest. Listeners differed from each other in two ways: they differed in whether they were from the same, a relatively similar, or a relatively different variety from the one investigated; they also differed in the amount of experience they had with the variety in question. Statistical analyses were conducted in order to determine which phonetic characteristics each of the groups used to distinguish one variety from another.

The variety of English chosen for this study is spoken in the urban areas of Utah, mostly by Mormon residents (as will be explained below), situated next to the Wasatch Mountains between Logan, Utah, in the North and Payson, Utah, in the South (Lillie 1998), an area referred to as the Wasatch Front (see figure 1). This variety of English was used because it is a subregional dialect of General Western American English and contains some, but not all, of the characteristics of the larger regional variety (Carver 1987; Lillie 1998). While Labov, Ash, and Boberg (2006, 279–86) do not distinguish Utah from

other Western U.S. varieties of English in terms of the characteristics they studied, other researchers have found that this region is somewhat distinct from other areas in the West. For example, Carver (1987), who focused mainly on lexical variation, divided Utah into two dialect regions that he claims are distinct from other areas of the General U.S. West. By contrast, Lillie (1998), who looked at lexical, syntactic, and phonological variation, divided Utah into three distinct regions (one of which is examined in this study—the most northern variety). Finally, Baker and Bowie (2005), who tested a much larger sample of speakers than did Labov, Ash, and Boberg (2006), observed several phonetic differences between Utah English and other Western U.S. varieties. Most of these researchers seem to agree that the variety spoken along the Wasatch Front is indeed a distinct variety of English. For simplicity's sake we refer to the speech of this area as Utah English.

FIGURE 1  
Map of Utah and the Dialect Area under Investigation



Differences between Utah English and General Western American English exist for a number of reasons. First, the original English-speaking community in Utah consisted mainly of members of the Church of Jesus Christ of Latter-Day Saints (Mormons), who settled the area in the latter half of the nineteenth century. Although several groups later passed through Utah on their way to other Western states and others settled in Utah because of railroad or mining opportunities, there was initially little interaction between these groups and the Mormon residents, isolating Utah English to some degree from other varieties in the Western United States. Second, during the late nineteenth century, there was a larger influx of immigrants from other English-speaking countries (England, Canada, and Scotland) than occurred in other areas of the United States (Di Paolo 1993). Third, the multiplex social networks that currently exist among Mormons have favored the development of particular linguistic identity markers distinct from other Western U.S. varieties of English, such as the CARD-CORD merger (Argyle, Baker, and Bowie 2004) and euphemistic expletives, such as *fetch* for *fuck* (Lillie 1998). Fourth, the Mormon emphasis on community interaction and involvement encouraged rapid integration and common intermarriage among the various U.S. and foreign-born groups of Mormons who immigrated to Utah. This resulted in a fairly unified dialect of English. This situation differed from many other areas of the United States where ethnic groups often remained separate for several generations. Religion has been shown to create a degree of unity that influences the retention or creation of separate varieties: Freeouf (1990) found that German immigrants to Indiana maintained different varieties of German depending on whether they were Lutheran or Catholic. Argyle, Baker, and Bowie (2004) also document that non-Mormons and Mormons who were raised in Utah have several phonetic differences in their speech (such as Mormons' use of the CARD-CORD merger cited above), providing further proof that early Mormon settlers interacted heavily with each other but remained separate from the other Utah settlers. Perhaps because of its isolation, it is often seen as a stigmatized variety of English by those in surrounding dialect areas (Brickey and Sarver 2004).

This variety of English was also chosen because we wished to extend the focus of dialect perception studies beyond dialects that are apparently readily perceptible from each other, such as Southern white American English and African American English. Such an analysis would determine to what extent listeners are able to perceive differences between varieties that are quite similar to each other, especially varieties that are commonly stereotyped in the media and elsewhere.



## METHODOLOGY

The purpose of our study was to determine whether speakers with varying degrees of experience with Utah English and who come from various dialect backgrounds differ in their ability to identify Utah English based on its phonetic characteristics. We tested speakers from Utah, speakers from other areas of the Western United States, and speakers of other non-Western U.S. dialects. Listeners heard sentences spoken by both Utahns and non-Utahns from the Western United States and were asked to determine the degree to which the person sounded as if they were from Utah.

**PARTICIPANTS.** Ninety-two listeners (35 males, 57 females) participated in the experiment. The participants were recruited from classes at the College of Humanities, Brigham Young University (BYU), via an e-mail message and class announcements. The listeners were divided into three groups depending on where they were raised: Utahns (23), Westerners (45), and non-Westerners (24). To be included in the Utah group, participants (13 males and 10 females; average age: 18.91; age range: 18–25; average amount of time spent in Utah: 16.78 years) had to have spent a majority of their lives (on average: 89%) in Utah. Most of the participants in the Utah group had lived in Utah all their lives; only 4 of them had lived in other locations, and all but one of them had moved to Utah before the age of 3 (the other one moved by the age of 6). This cutoff point ensured that these listeners had spent all of their school years in Utah.

The second group consisted of listeners (13 males, 32 females; average age: 19; age range: 18–30; average amount of time in Utah: 1.2 years) who had spent their childhood and all or a majority of their lives (on average: 94%) in the Western United States: Arizona (5), California (16), Colorado (2), Idaho (5), Nevada (3), Oregon (4), Washington (7), and Wyoming (3). The final group consisted of listeners (9 males, 15 females; average age: 19; age range: 18–27; average amount of time spent in Utah: 1.02 years) who had spent their childhood and all or the majority of their lives (on average: 95%) in non-Western states: East (7), Midwest (8), and South (9). All of the participants were between 18 and 30 years of age. In addition, the listeners in this experiment differed in their amount of experience with Utah English. Listeners from places other than Utah had lived in Utah on average 1.1 years (range: 0 to 11 years).

All participants were currently attending BYU and therefore had been exposed to Utah English for at least 2 months at the time of testing. Participants may have heard speakers of Utah English before coming to BYU, although their exposure to Utah English was most likely sporadic before that

time. Thus, we used the time of arrival in Utah to determine their amount of experience.

STIMULI. Twelve speakers (6 male, 6 female) were recorded reading a short dialogue that we invented for the purpose of the study (see appendix A). Half of the speakers had lived in Utah the majority of their lives, and half had lived in Utah less than two years but were from other locations in the Western United States. The speakers were divided into three groups: four were between the ages of 20 and 30, four between 40 and 50, and four between 60 and 70. Each age level included one male and one female from Utah and one male and one female from another area in the Western United States.

The dialogue contained words that could be pronounced with phonetic characteristics typical of Utah English (Argyle, Baker, and Bowie 2004; Sarver 2004). Individually, these characteristics are found in other varieties of English (see Labov, Ash, and Boberg 2006); however, the particular combination of traits in Utah English is unique among varieties of General Western American English. In other words, although some areas of General American English contain some of these features, especially near merger of vowels before /l/ (Labov, Yaeger, and Steiner 1972, 236–42; Feagin 1987; Sledd 1987), no other known area contains all of the features presented below. In addition, while other areas may contain these features, they are still stereotyped as features of Utah English, even by other speakers of the General West (Brickey and Sarver 2004).

Although the following list does not contain all of the characteristics of Utah English, these are the ones that have been the most documented and/or are the most recognized when listeners are asked about characteristics of Utah English (Lillie 1998; Brickey and Sarver 2004). Perhaps the most studied phonetic characteristics of Utah English are tense and lax vowel near mergers before /l/ (e.g., *fail-fell* [fɛɫ], *pool-pull* [p<sup>h</sup>ɔɫ], *heel-hill* [hɪɫ]; Di Paolo and Faber 1990; Faber and Di Paolo 1995) and [ɑ]-[ɔ] merging before /r/ (e.g., *cord-card* [k<sup>h</sup>ɑrd]; Di Paolo 1992; Bowie 2003, 2005). Other phonetic variations that have been discussed more recently are vowel merging before /n/ (e.g., *pin-pen* [p<sup>h</sup>ɛn]), the pronunciation of /l/ in complex codas (e.g., *palm* and *stalk*), and the *pole-pull* [p<sup>h</sup>ɔɫ] merger (Argyle, Baker, and Bowie 2004). Other characteristics, such as vowel variation before /z/ in words like *measure* ([mɛzɹ] as [mɛɹzɹ]), strong glottalization before syllabic nasals (e.g., *mountain* is perceived as either [mæ<sup>w</sup>ɹən] or [mæ<sup>w</sup>ɹ:ŋ] rather than [mæ<sup>w</sup>ɹŋ]), and epenthetic stops (e.g., *Olsen* [ɔltsən], *singing* [sɪŋɪŋk]), have been observed and vary greatly depending on the age and socioeconomic background of the speakers (Sarver 2004). For example, the CARD-CORD merger occurs more with older speakers (Bowie 2003), while the particu-

larly strong glottalization before syllabic nasals seems to be a characteristic of younger speakers.

Both the Utah and non-Utah speakers used some of the phonetic characteristics because, as discussed above, many of these characteristics are features of other varieties of Western American English (see table 1). It is the combination and amount of these features that renders Utah English a unique variety. In all cases, the total number of these features was much lower in the speech of the non-Utah versus the Utah speakers at the different age levels and therefore having some of these features in the speech of the non-Utahns was not seen to be a limitation of the study. Indeed, we wished to see if the listeners could distinguish a speaker from Utah from others—even from others whose speech patterns were similar to those of Utah speakers.

Previous research suggests that some phonetic characteristics of Utah English are overtly stereotyped, which may render them more salient. In particular, when asked what characteristics set Utah English apart from other dialects, most listeners name glottalization and vowel laxing before /l/ (Brickey and Sarver 2004). The difference between stereotypical traits and other common Utah English characteristics that are not generally commented on may play a significant role in what characteristics are attended to by listeners from different regions of origin.

The speakers who were recorded were asked to speak naturally, so any variation in the number and type of Utah characteristics across speakers was the result of natural differences in number of Utah characteristics each speaker used. As is always the case, speakers may have modified their speech under these circumstances to be more formal than in natural conversation, which makes us suspect that the Utah characteristics were less prevalent than they would have been in casual speech.

The dialogue was recorded using a Shure unidimensional microphone and a Marantz writable CD recorder. Speakers' dialogues were divided into seven sections, each of which was approximately 30 seconds in length. The files were not modified except that some pauses were deleted using Gold-wave software to make the files slightly shorter in length. Any pauses deleted occurred either at the beginning of or between sentences, and therefore deletions were not detectable in the final version presented.

The excerpts contained key words that may have elicited pronunciation that exhibited characteristics of Utah English when spoken by native Utahns (see appendix B). Each key word was analyzed by the first and third authors, both trained in phonetics, to determine if the speaker produced the Utah English feature. The number and type of Utah characteristics for each speaker are listed in table 1. The intrusive epenthetic [k] (e.g., *singing* [sɪŋɪŋk]) is not listed in this table because it was not produced by any of the speakers.

TABLE 1  
Number of Utah English Characteristics by Speaker

	Ephemetic		POLE- PULL-FOOL		FEEL-FILL		FAIL-FELL		Pronounced		PEN/PIN		[eɪʔ] for [ɛɪʔ]		CARD-CORD Glottalization		Strong		TOTAL	
	tu	Merger	Near	Merger	Near	Merger	ll	Merger	ll	Merger	ll	Merger	ll	Merger	ll	Merger	ll	Merger		ll
Utahns																				
female, age 21	1/6	4/8	3/5	3/5	1/5	1/5	2/5	2/5	1/4	1/4	0/2	0/2	1/7	1/7	4/7	4/7	17/49			
female, age 42	6/6	4/8	4/5	4/5	2/5	2/5	2/5	2/5	2/4	2/4	0/2	0/2	2/7	2/7	4/7	4/7	26/49			
female, age 65	6/6	2/8	3/5	3/5	3/5	3/5	1/5	1/5	1/4	1/4	2/2	2/2	2/7	2/7	4/7	4/7	24/49			
male, age 23	1/6	1/8	5/5	5/5	4/5	4/5	2/5	2/5	1/4	1/4	0/2	0/2	1/7	1/7	7/7	7/7	22/49			
male, age 45	6/6	6/8	4/5	4/5	5/5	5/5	2/5	2/5	2/4	2/4	0/2	0/2	1/7	1/7	3/7	3/7	29/49			
male, age 67	5/6	0/8	1/5	1/5	2/5	2/5	1/5	1/5	0/4	0/4	2/2	2/2	2/7	2/7	4/7	4/7	17/49			
TOTAL	25/36	17/48	20/30	20/30	17/30	17/30	10/30	10/30	7/24	7/24	4/12	4/12	9/42	9/42	26/42	26/42	135/294			
Non-Utahns																				
female, age 22	2/6	0/8	3/5	3/5	1/5	1/5	3/5	3/5	0/4	0/4	0/2	0/2	0/7	0/7	2/7	2/7	11/49			
female, age 46	0/6	1/8	2/5	2/5	0/5	0/5	2/5	2/5	1/4	1/4	0/2	0/2	0/7	0/7	2/7	2/7	8/49			
female, age 61	1/6	0/8	1/5	1/5	0/5	0/5	1/5	1/5	0/4	0/4	0/2	0/2	0/7	0/7	0/7	0/7	3/49			
male, age 24	0/6	2/8	1/5	1/5	2/5	2/5	0/5	0/5	1/4	1/4	0/2	0/2	0/7	0/7	5/7	5/7	11/49			
male, age 43	0/6	0/8	0/5	0/5	0/5	0/5	0/5	0/5	0/4	0/4	1/2	1/2	0/7	0/7	1/7	1/7	2/49			
male, age 63	0/6	0/8	1/5	1/5	0/5	0/5	0/5	0/5	0/4	0/4	0/2	0/2	1/7	1/7	1/7	1/7	3/49			
TOTAL	3/36	3/48	8/30	8/30	3/30	3/30	6/30	6/30	2/24	2/24	1/12	1/12	1/42	1/42	11/42	11/42	38/294			

NOTE: For each feature, the number of actual occurrences is given as the numerator and the number of possible instances as the denominator of the fractions listed above.

The short dialogue contained cultural content suitable for the audience and may have been perceived as speech more typical of Utahns than non-Utahns because of this. However, since all speakers read the same script, it was assumed that this content would not affect ratings distinguishing Utahns from non-Utahns.

**PROCEDURE.** To participate in the study, listeners logged onto a Web site, filled out a brief demographic survey, and then listened to each of the 84 randomized excerpts (12 speakers  $\times$  7 excerpts) one at a time (randomization of the excerpts was different for each listener). Although there were 84 excerpts, each one was quite short, and it took listeners only about 40 minutes to complete. Using terminology we knew they would understand, we told the listeners that “some speakers they would hear would have strong Utah ‘accents,’ others only light ‘accents,’ and others may have no Utah accent at all.” The listeners rated these excerpts on a Likert scale, ranging from 0 (no Utah accent) to 6 (heavy Utah accent). They could listen to the sound file as many times as they wished, but the computer prevented them from rating the excerpt until they had listened to it entirely at least once. However, once listeners had marked their response, they were unable to replay the files and were not allowed to change their responses.

We used a forced-choice (i.e., was the speaker from Utah or not), instead of open-choice (i.e., which dialect is this speaker from?), method because we felt that the latter would have been too difficult for naive listeners who felt unsure of their abilities to complete a task with no guidance or limitations given for the dialects to choose from. It is very common in this region (because Utah English is a stigmatized variety) to speculate whether a speaker is or is not from Utah and to declare whether or not the speaker has a “strong” Utah accent. Thus, we felt the listeners would feel confident in performing this task. In addition, we attempted to have speakers from more than one age group in order to have the task as similar as possible to what speakers do as they encounter a typical speech situation.

**ANALYSIS 1: REGION OF ORIGIN.** In order to get an overall sense of the data, we averaged the listeners’ responses for each speaker across the seven short excerpts. All these scores are displayed in table 2. Before we determined whether a participant’s region of origin influences his or her ability to identify the degree to which a speaker sounds like a Utahn, we first ran an analysis on whether listeners in general (regardless of region of origin or amount of experience) were able to distinguish excerpts spoken by Utah versus non-Utah speakers. To this end, each listener’s ratings were averaged into two different scores, one for the excerpts spoken by Utahns and

TABLE 2  
Average Ratings on the Scale of Utah (6) to Non-Utah (0) for Each  
of the Twelve Speakers by the Origin of the Listeners

<i>Speaker</i>	<i>Utahns</i>	<i>Non-Utahns</i>	<i>Non-Westerners</i>	<i>Average</i>
<i>Utahns</i>				
female, age 21	2.54	2.32	2.60	2.48
female, age 42	3.14	3.21	3.71	3.35
female, age 65	3.86	3.83	4.06	3.91
male, age 23	3.20	2.78	2.91	2.97
male, age 45	4.07	3.71	3.53	3.77
male, age 67	4.04	3.94	4.08	4.02
TOTAL	3.48	3.30	3.43	3.42
<i>Non-Utahns</i>				
female, age 22	2.40	1.86	2.03	2.09
female, age 46	2.31	2.19	2.61	2.46
female, age 61	3.30	2.92	3.27	3.16
male, age 24	3.12	2.53	3.75	3.13
male, age 43	2.58	2.41	3.44	2.81
male, age 63	3.63	3.32	3.04	3.14
TOTAL	2.74	2.63	3.02	2.71

one for excerpts spoken by non-Utahns. These two scores were compared to each other using a paired *t*-test. We assumed that if the Utah score were significantly higher than the non-Utah score, then the listeners were able to accurately distinguish between Utahns and non-Utahns. This analysis demonstrated that listeners rated the excerpts spoken by Utah English speakers higher (3.42) (i.e., as having more of a Utah accent) than those spoken by non-Utahns (2.71), ( $t(91) = 6.951, p < 0.0001$ ). A Bonferroni adjustment was made to the *p*-value to account for the number of statistical tests performed in this study. The adjusted *p*-value is .000625 (.05 divided by the 8 paired *t*-tests performed in this study as described below). This suggests that the listeners were able to distinguish speakers of Utah English from speakers of other similar General Western American varieties of English. It should be noted that, even though statistical difference between the two groups was found, the difference between the scores was slight compared to the entire range of possible scores from 0 to 6 (Utah: 3.42; non-Utah: 2.71). However, in many perceptual experiments, listeners' accuracy scores were similar to those found in this study (i.e., Williams, Garrett, and Coupland 1999; Clopper and Pisoni 2004a).

Another analysis was completed to determine if a listener's region of origin (Utah, Western, or non-Western) influenced the ability to accurately

identify the degree to which a speaker has a Utah accent. These series of paired *t*-tests revealed that there was a significant difference between the ratings of Utah and non-Utah speakers for the Utah listeners (Utah: 3.48; non-Utah: 2.74;  $t(21) = 4.275$ ;  $p < 0.0001$ ) and the listeners from the Western United States (Utah: 3.30; non-Utah: 2.63;  $t(44) = 7.523$ ,  $p < 0.0001$ ), but not for the non-Western listeners (Utah: 3.43; non-Utah: 3.02;  $t(23) = 0.506$ ,  $p = 0.617$ ; see table 2 for specific scores). In other words, non-Westerners, unlike the other two groups, were unable to distinguish between Utah and non-Utah speakers.

We also examined whether region of origin influenced which phonetic characteristics of Utah English were most salient to the listeners in helping them identify Utah speakers. In order to establish a baseline, we first examined what phonetic characteristics listeners, regardless of their region of origin, used to identify Utah English speakers. To do so, we combined and averaged the scores for the three listener groups and placed each speaker's number of Utah characteristics examined in this study (averaged over their seven excerpts of speech) into a linear step-wise multiple regression analysis. The score for each speaker was the dependent variable and the characteristics of Utah English described above were the predictor variables. The results of this analysis indicated that listeners attended most closely to the FAIL-FELL and FEEL-FILL near mergers, epenthetic /t/ as in *Ol[t]son*, and pronounced /l/ as in *palm*. The combined contribution of these four factors accounted for an impressive 98% of the variance, strong evidence that these phonetic characteristics were what listeners used to determine whether someone did or did not speak Utah English.

Next, a similar analysis was done separately on each of the three groups to determine whether region of origin influenced which characteristics were used to identify speakers of Utah English. In all cases, the combined contribution of the factors used in this study predicted at least 74% of the variance in responses (see table 3). This analysis showed that the Utah group's judgments were based on the FAIL-FELL near merger ( $F(1,10) = 11.96$ ,  $p < .0006$ ). The Westerners also used the FAIL-FELL near merger, along with epenthetic [t] and pronounced /l/ ( $F(1,10) = 13.092$ ,  $p < .002$ ). The multiple regression analysis reveals what features the listeners attended to without indicating how accurate their perceptions were. Therefore, although the non-Westerners were unable to correctly distinguish Utahns, their (poor) judgments were still largely based on the FAIL-FELL and the FEEL-FILL near mergers ( $F(1,10) = 14.997$ ,  $p < .003$ ). As table 1 indicates, Utah speakers did not always merge lax vowels before /l/, while some non-Utahns did. As a result, using these two near mergers to determine how much of a Utah accent a speaker had was not foolproof and often led to erroneous classifications.

TABLE 3  
Linear Step-wise Multiple Regression Analysis of Phonetic Characteristics

Utahns	
FAIL/FELL near merger	$r = .74$
Westerners	
FAIL/FELL near merger	$r = .59$
intrusive /t/	$r = .35$
pronounced [l]	$r = .02$
TOTAL	$r = .96$
Non-Westerners	
FAIL/FELL near merger	$r = .78$
FEEL/FILL near merger	$r = .06$
TOTAL	$r = .84$

ANALYSIS 2: AMOUNT OF EXPERIENCE. The second major goal of the study was to determine whether amount of experience influenced the ability to accurately identify speakers of Utah English. To this end, we regrouped participants into three groups: those with one year or less, those with more than one and fewer than five years, and those with more than five years (up to 11 years) of residence in Utah. Long-time Utah residents were not included in this analysis because they all had lived in Utah for 15 to 20 years, while no one in any of the other groups had more than 11 years of experience. For this reason, a group composed of listeners with over 11 years of experience with Utah English would not differ from the group comprised of Utahns. The participants' ratings of the Utah speakers were then entered into a series of paired *t*-tests. Results of these analyses indicated that those with one or fewer years of experience living in Utah were unable to distinguish Utahns from non-Utahns (Utah, 3.27; non-Utah, 3.07;  $t(42) = 2.572$ ,  $p = 0.013$ ). (Note, although this appears to be a low *p*-value, because of the large number of statistical tests, a Bonferroni procedure was applied and the *p*-value was set at .0065; see above discussion.) On the other hand, those with more than one and less than five years of experience (Utah: 3.17; non-Utah, 2.68;  $t(19) = 3.913$ ,  $p = .002$ ) and those with more than five years (Utah: 3.36; non-Utah, 2.72;  $t(8) = 6.975$ ,  $p < 0.0001$ ) were able to identify Utah speakers from non-Utah speakers.

However, when linear stepwise multiple regression analyses were used to determine whether the three groups with varying amounts of experience differed in which phonetic characteristics they used to distinguish Utah English, it was found that they did not ( $p > .05$ ). In other words, regardless of the amount of experience listeners had, they used the same characteristics to identify Utah from non-Utah speakers. This is significant since it suggests that listeners from areas other than Utah do not alter which characteristics



of the variety they use to identify Utah English even with more experience with the variety.

One unusual finding is that Utah speakers over age 60 were the most likely to be rated as having a Utah accent even though their speech samples contained fewer Utah features (such as near vowel mergers before /l/) when compared with the younger speakers' samples. Reviewing what features these older speakers did use demonstrated that both the older Utah speakers pronounced *measure* [mɛɹɜ.ɹ] instead of [mɛɹɜ.ɹ], while none of the other Utah speakers did so. This feature, used only by older Utah speakers (Lillie 1998), may therefore be seen as a stereotypical feature of older speakers of Utah English.

It is also possible that listeners merely perceived an older voice as someone with a stronger accent for both Utah and non-Utah older speakers, since there is a folk linguistic belief that dialect differences are dying out and older people have stronger accents than younger speakers. However, a two-way (listener's  $\times$  speaker's region of origin) ANOVA performed only on the older speakers' productions (i.e., on the two older non-Utah speakers and the two older Utah speakers) revealed a significant effect of speaker's region of origin ( $F(1,95) = 17.84, p < .0001$ ) but no effect of listener's region of origin ( $F(2,95) = .556, p < .05$ ) nor a speaker's  $\times$  listener's region of origin interaction ( $F(1,95) = .461, p < .05$ ). In other words, all three participant groups (Utah, Westerner, non-Westerner) could determine the difference between the older Utah speakers and the older non-Utah speakers. Thus, the listeners were able to hear the difference between Utah and non-Utah speakers even at the older age group. Indeed, it may have been this older group of Utah speakers where the differences were the most salient, since even the non-Westerners were able to perceive a difference between Utahns and non-Utahns for this older age group.

## DISCUSSION

The present study focuses on how two measures of dialect familiarity, region of origin and amount of experience, influence listeners' ability to identify a variety of a language by its phonetic characteristics. Both measures of familiarity were found to influence dialect identification, although the degree and manner of influence was different for each.

**REGION OF ORIGIN.** Region of origin proved to be a significant factor in the listeners' ability to recognize differences between Utah and non-Utah speakers. In particular, the listeners from Utah and the West (i.e., those whose variety of English is either the same or relatively similar to the dialect

examined) were more adept at identifying Utah speakers based on phonetic characteristics than were the non-Western listeners, who were from more distant areas. This corroborates earlier findings by other researchers that region of origin is an important factor in dialect identification (i.e., Preston 1996; Kerswill and Williams 2002; Clopper and Pisoni 2004b).

The current study expands our knowledge of dialect identification in two ways. First, it demonstrates that region of origin not only affects one's ability to identify varieties of a language, it also affects which traits or characteristics one uses to distinguish or classify these varieties. The multiple regression analysis shows that different groups used different sets of phonetic characteristics of Utah English; the Utah listeners appeared to use only one of the phonetic characteristics we included, while Westerners (i.e., the listeners who are from a relatively similar dialect area) used the most.

Second, the three groups of listeners differed in the degree to which they used stereotypical characteristics of Utah English to determine the degree to which a speaker has a Utah accent. For example, the tense-lax near mergers before laterals (i.e., FAIL-FELL and FEEL-FILL) were the only traits that non-Westerners used to identify Utah English speakers; these two near mergers alone accounted for 84% of the variation in their identification scores. These same near mergers are the features that participants in an earlier study named as some of the most stereotypical of Utah English (Brickey and Sarver 2004). Interestingly, the listeners who used only these features to identify Utah speakers were also those who did the poorest job at correctly recognizing Utah speech, since the near mergers are not limited to Utah English.

By contrast, Western listeners used the FAIL-FELL near merger as well as the epenthetic /t/ and pronounced /l/ to determine the degree of Utah accent. In other words, listeners from regions close to Utah used phonetic characteristics in addition to the stereotypical ones used by the non-Westerners. This is not to say that characteristics such as epenthetic /t/ and pronounced /l/ are not common in Utah, only that they are less often stereotyped. Perhaps listeners from close regions are better able to attend to the characteristics that differ from their own speech and what they hear from Utahns. Non-Westerners, on the other hand, may perceive all Western dialects as similar, which makes them rely on stereotyped traits for recognition.

The role of stereotypes is further evidenced by the fact that the listeners from Utah used only one of the phonetic characteristics we included in this study, yet it accounted for much less of the variation in their scores (74%) than the characteristics used by the other groups (Westerners: 96% and non-Westerners: 84%). In other words, Utahns seem to be using phonetic characteristics that listeners from other areas do not attend to in addition to the stereotypical near vowel mergers before /l/. This is not to say that Utahns

do not use these near mergers to identify speakers from Utah, since 74% of the variance in their scores can be attributed to these features, which is a significant amount of the variation. Instead, these findings may indicate that the Utahns may have been attending to other features we did not examine in this study. More research needs to be conducted to determine what other characteristics listeners from Utah may have used for identifying Utah speakers and whether listeners native to a variety can typically identify features of their dialect that listeners not native to that variety cannot. We suggest that further research focus on intonation and vowel duration in Utah English, which, impressionistically, appear to be different in Utah English than in other regional Western varieties of English. For example, Utah English intonation appears to have more exaggerated pitch contours and elongated stressed vowels. It should be noted, however, that the features examined in this study accounted for an impressive amount of the variance in the data, which suggests that these features are the ones that speakers attend most to when determining the difference between Utah and non-Utah speakers.

Another interpretation of these data is that listeners may have used stereotypical phonetic characteristics for dialect identification because of their negative perceptions of Utah English. Both Utahns and non-Utahns often have negative perceptions of Utah English, especially of phonetic characteristics, such as the FEEL-FILL and FAIL-FELL near mergers (Brickey and Sarver 2004). Several studies on stigmatized varieties of English (such as African American English) hypothesize that such characteristics are specifically used for dialect identification (for a brief review see Thomas and Reaser 2004). For example, Surek-Clark (2000) demonstrated that perceived dialect prestige influences whether or not transplants to a community adopt the regional variety spoken there. The results of the current study suggest that perceived dialect prestige also may influence what aspects of a variety are used for dialect identification. Replication of the results of the present study with a more prestigious variety would indicate whether more stigmatized varieties (such as Utah English) are more readily recognizable than prestigious varieties.

**AMOUNT OF EXPERIENCE.** The second factor we examined was amount of experience, defined here as the amount of time spent living in Utah. We found that listeners with one year or less experience were unable to distinguish between Utah and non-Utah speakers, whereas those with more experience were able to do so. These findings have two important implications. The first is that perceiving characteristics of a new variety occurs much earlier than adopting the characteristics into one's own speech. In fact, Chambers (1992, 1998) observes that adults and children who have lived in a new dialect area for several years often have not adopted the characteristics of

the new dialect, particularly its phonetic characteristics. In other words, the results of our study, when combined with those of Chambers (1992, 1998), suggest that listeners perceive dialect variation much earlier than they assimilate dialectal traits into their own speech. This confirms the hypothesis that changes in one's speech occur first in perception and only later in production (Labov, Karen, and Miller 1991). Of course, one may argue that the listeners from other regions would not adopt features of Utah English since they were adults when they first were exposed to Utah English. As studies examining real time (i.e., the change of one's pronunciation or use of lexical features over the course of time) demonstrate, however, adults can and do change their use of many lexical and pronunciation features (i.e., Bailey 2002; Hollett 2006).

The second implication of amount of experience on dialect identification we identified is that listeners with more experience did not necessarily attune to different phonetic characteristics than those with less experience. Listeners with more experience were not able to perceive more characteristics of Utah English than those with less experience; they were simply more accurate at using the same characteristics to identify Utah speakers. One possible explanation for this is that region of origin plays a much greater role in what characteristics listeners focus on rather than amount of experience, at least as far as phonetic traits are concerned. Moreover, the characteristics one uses seem not to change over time. Most of our listeners had less than two years of experience with Utah English. Research on dialect acquisition suggests that much more experience is needed to acquire the phonetic characteristics of a dialect in comparison to its lexical/syntactic characteristics (Chambers 1992, 1998). Therefore, more variation may have been evident in the types of phonological characteristics chosen by listeners if they had had more experience with Utah English.

Another possible explanation for these findings is that listeners with more experience attended to characteristics of Utah English that were not examined in this study. These may be the same characteristics that the native Utah listeners focused on as well. Further research into other aspects of Utah English should shed light on whether listeners become more "native-like" over time in their use of the specific characteristics they use to distinguish native from nonnative speakers of a particular variety.

While these findings suggest that region of origin and amount of experience influence dialect identification, it should be noted that the listeners' ability to distinguish Utah and non-Utah speakers was not high. An extreme case of this is found when comparing the ratings of the 20-year-old male Utahn (3.20) and the 20-year-old non-Utah male (3.12). Their ratings differed very little. However, such findings are consistent with other studies involving

dialect identification (i.e., Williams, Garrett, and Coupland 1999; Clopper and Pisoni 2004a), which conclude that listeners are not always accurate at identifying regional varieties. Interestingly, listeners are able to accurately distinguish between very distinct varieties (i.e., African American English, Chicano English, and Regional White English) with very little input (Purnell, Idsardi, and Baugh 1999). An important finding of this study, however, is that listeners were able to identify differences between very similar regional varieties of English, although this ability depended on their amount of experience with a variety and their region of origin.

Further research on amount of experience, however, would be beneficial to determine the effects of long-term experience on dialect identification. While we found that amount of experience did play a role in dialect identification, most of the participants in our study had not lived in Utah for very long (on average two years). Thus, with a larger range of amount of experience, even greater differences between less and more experience could be found.

## CONCLUSIONS

Whatever the reasons for these findings, they provide evidence that region of origin and amount of experience are significant factors in dialect identification. Importantly, we found that listeners from the region examined are best able to identify speech samples of that variety and those of other similar varieties, in contrast to those from distant areas. This is true even though the listeners may not have been explicitly taught these differences. Moreover, listeners from other areas are able to identify speech samples of a different variety, even one with which they have little experience. This illustrates the complex nature of dialect identification and highlights the importance of including traits of the listeners themselves, such as their region of origin and amount of experience, as factors in dialect identification research. These must be taken into account along with the features of the variety examined (such as its perceived prestige) when investigating dialect identification.

## APPENDIX A

### Dialogue Excerpts

EXCERPT 1. Hey, do you know LAURA KENSINGTON, Jill Fatheringham's roommate? Is she KEATON OLSEN's girlfriend? Yeah, did you know she's actually DIVORCED? No BULL? That's something ELSE.

EXCERPT 2. REALLY, NELSON Cunningham told me. I mean how would you FEEL if you didn't find out until you were KNEELING across the altar to be SEALED? What would you do, rip off her VEIL or what? Would you BAIL out, or confront her on the spot, or just put a BULLET through your brain?

EXCERPT 3. That would be HORRIBLE. That's like Jared CLINTON when he fell for that girl while they were both touring with the FOLK dancers. He got all weird and started STALKING her.

EXCERPT 4. I don't even have time for dating. I've got too much SCHOOL work. Like this Thursday I've got a test in Faulkner's BOTANY class and an ORAL in religion. We actually have to memorize some of the PSALMS. I'm totally going to FAIL. Or I could cheat and write the answers on my PALM.

EXCERPT 5. Dude, I'm no FOOL. I'm not gonna break the rules. Just last week I saw someone get their test confiscated for cheating. It was so UNCOOL. They just PULLED it out of his hands, as if he'd done something illegal, not just a small INFRACTION like filling out a scantron with a PEN instead of a PENCIL. I wish my tests were all true-FALSE, but my profs think they are a bad MEASURE of your knowledge.

EXCERPT 6. Man, tests really stress me out. I think they're giving me ULCERS. My mom says the CALCIUM in WARM milk really helps, but I think she's FULL of it. Sometimes I just FEEL STALE or ROTTEN like there's no PLEASURE in life.

EXCERPT 7. Oh, CALM down. How about taking a break? Are you AVAILABLE tonight? We could play POOL or do a MATINEE. Or there's a free concert tonight. It's the MEN's CHORUS. Ok, but I can't be out late because I've got WARD council at seven on Sunday, so I've got to hit my SATIN pillow early or I'll never make it out of bed.

## APPENDIX B

### Key Words Used to Elicit Utah English Pronunciations

Epenthetic /t/: excerpt 1, *Olsen, else*; excerpt 2, *Nelson*; excerpt 5, *false*; excerpt 6, *ulcers, calcium*

POLE-PULL-POOL Merger: excerpt 1, *bull*; excerpt 2, *bullet*; excerpt 4, *school*; excerpt 5, *fool, uncool, pulled*; excerpt 6, *full*; excerpt 7, *pool*

FEEL-FILL Merger: excerpt 2, *really, feel, kneeling, sealed*; excerpt 6, *feel*

FAIL-FELL Merger: excerpt 2, *veil, bail*; excerpt 4, *fail*; excerpt 6, *stale*; excerpt 7, *available*

Pronounced /l/: excerpt 3, *folk, stalking*; excerpt 4, *Psalms, palm*; excerpt 7, *calm*

PEN-PIN Merger: excerpt 1, *Kensington*; excerpt 5, *pen, pencil*; excerpt 7, *Men's [eɪzə]* for [ɛzə]: excerpt 5, *measure*; excerpt 6, *pleasure*

CARD-CORD Merger: excerpt 1, *Laura, divorced*; excerpt 3, *horrible*; excerpt 4, *oral*; excerpt 6, *warm*; excerpt 7, *ward, Chorus*

Strong Glottalization: excerpt 1, *Keaton*; excerpt 3, *Clinton*; excerpt 4, *Botany*; excerpt 5, *infraction*; excerpt 6, *rotten*; excerpt 7, *matinee, satin*

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