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How We Feel About How We Talk: A Language Attitude Survey of Utah English

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of Utah English

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ABSTRACT

How We Feel About How We Talk: A Language Attitude Survey
of Utah English

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Research has shown that Utah English is a distinct variety of English, particularly as spoken in the Wasatch front region (Lillie 1998). It is characterized by particular linguistic features, including tense/lax vowel mergers before tautosyllabic /l/ (Di Paolo and Farber 1990) and the oral release of glottal stops in certain environments (Eddington and Savage 2012). The features of this variety have been studied; however, not much research has been done about the positive or negative attitudes people hold toward it.

Casual observation indicates that Utahans themselves may judge speakers of this variety more harshly than do people from other regions. The present study was conducted to determine if this is true, and to determine what other factors have an influence on a person's perception of Utah English.

A language attitude study was performed using the matched-guise method. Participants were asked to react to recorded speakers, judging how intelligent and friendly they sounded. When multiple Utah English features were combined in a passage, the majority of participants judged the speaker to be unintelligent and unfriendly; also, participants' judgments of the speakers' intelligence deviated significantly based on the participants' location of origin, with significant interactions between location of origin and age group. When Utah English features were looked at separately, participants' judgments of both the speakers' intelligence and the speakers' friendliness deviated significantly based on which feature was being heard and the gender of the participant, with interactions between feature and gender, feature and age group, and feature and location of origin. Overall, Utahan participants judged speech with Utah English features to be worse than did participants from other locations.

Keywords: Language attitude, matched-guise, Utah English, stigmatization

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1. Introduction

Language is, by necessity, a social phenomenon. Because of this, one might argue that the term "sociolinguistics" is redundant: what language could have developed, or even have existed, outside of the influence of people's social interactions? William Labov, the ostensible father of modern sociolinguistics, for a long time objected to the term, preferring the idea that the social aspects of language not be a separate venue of study, but rather that studying language in a social context be just the obvious best way to go about obtaining the most accurate information about the language (Labov 1964). In any case, what is clear is that the interplay of social phenomena and language is a rich field of study.

Labov himself found an interesting aspect of the social dimension of language in his seminal study in Martha's Vineyard (Labov 1962). In it, he studied the shift in various diphthongs used by the island's inhabitants. He found that a major predictor of the locals' dialectal differences was their attitude toward the island itself: those who identified (or wished to identify) the most strongly as Vineyarders were also the most likely to exhibit the shift. The Vineyarders' dialect was seen as a in-group marker, and the attitude the people had toward that group determined they way they spoke.

Language attitudes are an important factor of language use, especially when considering varieties of a particular language. Labov's study showed the interplay between people's attitudes and their own speech; another field of language attitude studies looks at people's attitudes toward the speech of others. Studies have been conducted comparing people's reactions to relatively well-known varieties, such as standard American English and Southern dialects (Fridland, Bartlett, and Kreuz 2004) or between standard and Chicano English (Arthur, Farrar, and Bradford 1974). However, the study of Utah English is, compared to these other varieties, relatively new. Little has been done to study the language attitudes people have toward Utah English, or the various social and demographic factors that

influence those attitudes. A very large portion of what has been done in this field is the work of Marianna Di Paolo, who has looked at various mergers (Di Paolo and Faber 1990, Di Paolo 1992) in Utah English. Because not much has previously been done to study attitudes about Utah English, the objective of this current study is, ideally, to expand the study of that aspect of the dialect; specifically, to perform a broad-scope study of the language attitudes toward Utah English and the individual phonetic features associated with it.

2. Review of Literature

Language attitudes have been the subject of much study. Hickey (2000) found that, when it comes to particular varieties of language, people often have broad, preconceived ideas about the speakers of that variety: they generalize and stereotype based on the speaker's language. Preston (1999) found, similarly, that people's awareness of linguistic stereotypes strongly informed their reactions to particular varieties. There is less in the literature about Utah English than there is about other varieties, such as Southern American English. As such, it is less predictable what reactions participants will have to it, although it seems reasonable to assume that Utahans, being the most familiar with Utah English, will be more likely to have stereotyped ideas about its speakers, and thus exhibit stronger reactions than other participants.

2.1 Features of Utah English

Earlier works have posited that Utah English is, for all intents and purposes, not distinct from the variety of English spoken in the greater Western states area (Labov, Boberg, and Ash 2006). However, more in-depth research (Bowie and Baker 2005) has shown that Utah English is, in fact, a distinct variety with several factors that set it apart from other nearby dialects. The features used in this study are derived from the features typical of Utah English as spoken in the Wasatch Front region, which is described by Lillie (1998) as being bordered by Logan, Utah, on the north and Payson, Utah,

on the south.

A highly salient feature of Utah English is the manner of release of glottalized /t/ in words such as "mountain" or "kitten." The phenomenon in question has been described as schwa epenthesis prior to the word-final /n/ (thus rendering /ʔən/ instead of /ʔn̩/) (Baker, Eddington, and Nay 2009). Eddington and Savage (2012) more specifically found that the determining difference was the manner of release of the glottal stop: oral release or nasal release, with oral release being the stereotypically Utahan variant. Personal experience indicates that this feature is both highly salient and highly stigmatized in Utahan speech, and the data from the present study appear to bear this out.

Another feature of Utah English is the laxing of vowels proceeding tautosyllabic dark /l/ (in other words, before syllable-final /l/). This precipitates two near mergers, referred to typically as the feel/fill near merger and the fail/fell near merger. Di Paolo and Farber (1990) found that, while impressionistic judgments indicate that these mergers are complete, acoustic analysis shows that distinctions are still maintained, however slight, between the two phonemes. Thus, the term *near merger* is more accurate. These two near mergers (feel/fill and fail/fell) have at times been treated separately, but for purposes of this study, the general phenomenon of vowel mergers before /l/ is considered as a single factor, and will be referred to simply as the *feel/fill near merger.* This feature, as well as the previous, has been seen to be used more by younger speakers.

Bowie (2003) investigated another feature considered part of the Wasatch variety of Utah English: the merging of /ɑr/ and /ɔr/, known generally as the cord/card merger. Much like the previously discussed features, this feature is one that Utahan speakers are aware of (many citing the pronunciation of American Fork, a town in Utah, as American "Fark" by some speakers). However, while the previously discussed features are often associated with younger speakers, this feature has been seen to be employed by older speakers.

There are other features identified as Utah English that were included in the present study.

Baker, Eddington, and Nay (2009) used nine different features as the primary indicators for Utah English, three of which have just been discussed: the oral release of glottalized /t/, vowel mergers before /l/ (which was treated as two separate phenomena), and the cord/card merger. Additionally, they used the following: epenthetic /t/ in C + /s/ environments (such as in words such as "Hansen" or "Chelsea"), pole/pull merger, pronunciation of /l/ in words such as "palm," the merging of /ɛ/ and /ɪ/ before nasals (known generally as the pin/pen merger), and diphthongization of the initial vowel in words such as "measure," rendering /meɪʒɹ/.

While conducting research to study the oral release of glottal stops (Eddington and Savage 2012), researchers found that there was some degree of stigmatization associated with that feature. However, this negative attitude seemed strongest amongst long-term Utahans themselves. The purpose of the present study is to test this hypothesis: that Utahan listeners, specifically, will perceive characteristics of Utah speech more negatively than will people of other areas. It is possible that other demographic factors are as important or more than region of origin; thus, these other factors will also be examined in the course of the study.

2.2 The Matched-Guise Method

In order to test this hypothesis, a method known as the matched-guise method will be used. Lambert et. al. (1960) developed this method for studying the attitudes people hold toward spoken language varieties. It requires a speaker who is capable of speaking convincingly in two different varieties of a language; the single speaker, speaking in the two different varieties, is presented to the participants as two separate speakers. Participants are asked to react to the two (ostensibly) different speakers based on recorded speech. This allows the researcher to control for essentially all variables other than the variety of the language being spoken. This method has been employed extensively since that time: examples include Arthur, Farrar, and Bradford (1974) who used it to gauge reactions to

Chicano versus standard English and Gaies and Beebe (1991) who used it to measure language attitudes in the context of language education programs. Giles and Bourhis (1976) employed this method outside of a strictly linguistic framework, using it to measure language stigmatization in the context of social psychology.

2.3 Intelligence versus Friendliness

Any study of standard versus non-standard language varieties will invariably involve some discussion of stigmatization. Measuring the degree to which a language variety is "stigmatized" is an unhelpfully vague description, however. Stigmatization can constitute a large variety of phenomena. A person's attitude toward language can include judgments on many factors, such as how intelligent, friendly, competent, or pleasant the language is. Generally put, stigmatization is anything that "conveys a social identity that is devalued in a particular social context" (Crocker et. al, 1998, p. 505). It is therefore important to determine what, exactly, is going to be examined in order to obtain a measurement of stigmatization.

Two factors that are frequently looked at are intelligence and friendliness. Perceptions of intelligence, specifically, have been often studied from the vantage point of language attitudes. Shepherd (2011) studied the way that teachers' evaluations of students were affected by demographic factors such as the gender and ethnicity of students. This study found that speakers of stigmatized varieties of language are very often considered unintelligent. Bucholdtz et. al. (2008), while comparing attitudes toward varieties of English spoken in northern and southern California, found that listeners often associate standard varieties of English with higher degrees of monetary and professional success, with associations to competence and intelligence.

Studies have found an interesting interplay between perceived intelligence and perceived friendliness. Preston (2003) found that Northerners (Michiganders, specifically) perceived their own

speech to be both the most correct (arguably an indicator of intelligence) and pleasant (connected to friendliness). Southerners (Alabamans), on the other hand, considered their own speech the most pleasant, but judged the northerners' speech to be the most correct. This is interesting, both in that it shows that these two judgments about people (intelligence/correctness and friendliness/pleasantness) exist independently of each other, but also that people in different geographic locations are prone to rendering different judgments about a particular speech variety.

In the present study, "stigmatization" has a fairly specialized meaning. It is used to mean any situation in which a person does not prefer a particular language variety. For instance, in a situation where a participant is asked which variety sounds more intelligent, the variety selected is considered the preferred variety, and the variety not selected is considered the stigmatized variety. In the present study, stigmatization is more narrowly used to mean the stigmatization, or non-preference, of Utah English.

2.4 Social Associations with Specific Speech Features

Variationist studies can often draw connections between certain speech features and particular demographic groups. Labov (1964) famously showed how the socioeconomic status was a factor in predicting New York speakers' rhoticization. Many studies have shown how region of origin has strong associations for many people: southern speech, for instance, is often highly stigmatized (Lippi-Green 1997). In terms of Utah English, Eddington and Savage (2012) found that younger women in Utah employed the orally-released glottal stop feature a good deal more than other groups. Bowie (2003) found that, often, the cord-card merger is employed by older Utahans to a greater degree than those of other ages.

In cases of linguistic stigmatization, it is generally the case that the disfavor is directed not at the speech feature itself (as an acoustic phenomenon) but rather at the individual or perceived group of

individuals that are associated with that speech feature. Gluszek and Dovidio (2010) studied extensively the nature of stigma against nonnative speakers of English, and found that linguistic stigmatization is inextricably connected to attitudes the listener has about the speaker, the culture, and him or herself.

This holding any significance, of course, is entirely dependent on the listener being aware of these demographic-feature associations. Studies have shown that the amount of exposure a person has to a language variety is a determinant of that person's ability to identify the variety successfully (Baker, Eddington, and Nay 2009). In the case of Utah English, it is expected that Utahans are more likely to be aware of the social groups associated with each speech feature. A participant in England, for instance, might have no notion of what age group spoke in what way, and thus not exhibit the prejudices that a participant more familiar with Utahan speech might. For example, Hiraga (2005) found that British listeners, when tasked with ranking various accents, ranked "American" speech roughly in the middle of all the options. In doing so, many British English speakers ranked various British varieties (i.e. RP) as better than American, and other British varieties (such as Birmingham) as worse. This belies a much more complex understanding of the various varieties of British English than of American English, due, at least in part, to the awareness the listeners had of the local varieties.

3. Methodology

The current study employs a modified version of the matched-guise method. Utah English is less well documented and understood than many of the varieties of English that have been compared to standard English with the matched-guise method—such as Chicano (Arthur, Farrar, and Bradford 1974) or Southern varieties (Fridland, Bartlett, and Kreuz 2004). In order to conduct a matched guise test of Utah English, it is necessary to have a speaker who can speak both with Utah characteristics and without them. A speaker is unlikely to be bidialectal (i.e. be able to speak both standard English and

Utah English) *and* be able to differentiate the dialects enough that they sound convincingly like two separate people. This problem is compounded by the fact that, in the current study, many of the sections only employ a single feature of Utah English. A speaker speaking in standard American English, and then only deviating from that by a single speech feature would make it very obvious that it was the same speaker in both recordings.

In order to address this problem, pairs of speakers were used rather than individual bidialectal speakers. Speakers were chosen such that those who were paired together were impressionistically deemed by the researcher to have voices as similar to each other as possible. The participants listened to two recordings: one with a speaker employing standard American English, and one with the paired speaker employing one or more Utah English features.

In an attempt to see what patterns would appear in listeners' reactions to Utah English, two types of judgments were elicited from participants. The questions in the survey are each related either to intelligence or friendliness. In this case, those two terms are used as shorthand: intelligence, in this case, also encompasses the idea of competence, and friendliness also encompasses ideas of interpersonal acceptance and availability. For example, after hearing the recordings, a participant would answer a question, "Which of the two speakers, do you think, is more intelligent?" and have the option of speaker 1 or speaker 2. For the purposes of the present study, speech that is highly stigmatized is defined as speech that is judged low on either the friendliness or intelligence measures. More specifics of the questions can be found in Appendix A.

3.1 Recordings

There were a total of twelve volunteers who were recorded for the survey. All of them were males in their early 20's. All were students enrolled at Brigham Young University, and were from Western states. Each of these volunteers was a speaker of standard American English; the participants

were selected based on their ability to both speak standard American English, but also to adopt Utah English features if needed.

Some degree of pronunciation coaching was necessary. Prior to recording, each of the volunteers was directed in how each of the key words needed to be said; for the most part, each speaker was given a recording that best fit his own natural speech patterns (thus necessitating the least degree of coaching). For instance, a few of the speakers naturally pronounced the /l/ in words such as "palm." These speakers were assigned the selections of text that dealt with that speech feature. Speakers were re-recorded as many times as necessary to ensure that the recordings were of adequate quality for the survey.

Each speaker was given one selection of text, and was recorded speaking it twice: once in standard American English, and again employing the feature (or features) of Utah English that corresponded with that text. Another speaker would then also record that same passage, both in standard and Utah English. The purpose of this was to control for preferences that might arise for an individual speaker's voice. The speakers were paired, as best as possible, with someone whose voice matched theirs in terms of pitch and intonation, but it is still possible that other characteristics of the speaker's voices could have influenced the way others judged their friendliness and intelligence.

In this method, each listener would hear one speaker who read the passage with Utah English features, and the other speaker who read it without: thus, each speaker heard each passage twice. However, *which* of the two speaker was employing the Utah English features was randomized by the Qualtrics software. If one speaker's voice was highly preferable, regardless of the features used, the alternation would ideally ensure that the results were not skewed toward that speaker.

The pole/pull merger and the pen/pin merger features were removed from analysis in this study, primarily because the volunteer speakers had difficulty producing these features convincingly. In the case of the pole/pull merger, speakers were unable to consistently use (or not use) the merger; they

would alternate while recording, thus creating inconsistencies. In the case of the pen/pin merger, the speakers, once they began using the merger, started to also employ other features common to Southern speech (i.e. a "drawl"). It was determined that these two features would be excessively difficult to record with acceptable quality, and were thus abandoned. The text used in the recordings is available in Appendix B.

3.2 Surveys

The primary mode of data gathering for this study was via two online surveys, built using the Qualtrics online survey platform. Participants were recruited via social media and word-of-mouth. The surveys were designed to look at the six features of Utah English previously outlined, i.e. oral release of glottal stops, the fill/feel merger, the cord/card merger, pronounced /l/, intrusive /t/, and measure pronouced as /meɪʒɹ/.

The first survey had six different sections of text. Each text was read by two different volunteers: one with Utahan features, and one without. Each of the sections of text were designed to exhibit as many of the Utahan speech features as possible. The two speakers who were paired together to read a text were impressionistically matched (by the researcher) as best as possible to have similar pitch and tone of voice, in an attempt to control for outside variables (or at least lessen their impact on the final outcome). Other measures were also implemented to ensure control of variation based on the individual speakers' voices (i.e. alternation of which speaker employed the Utah English features).

Initially, this was the only survey planned. However, a short pilot study was performed (with approximately 15 people), which was followed up by an interview to generate feedback about the survey. This pilot study found that, for many listeners, specific features had a much stronger effect on people's judgments when compared to other features. Thus, it became apparent that it was necessary to look at these features separate from each other.

Thus, the second survey was designed. It was functionally very similar to the first survey, except that each of the six pairs of speakers had only *one* feature of Utahan speech that they exhibited (for instance, one passage of text had multiple instances of oral release of glottalized /t/, and not any other of the features in question). The speakers were coached carefully to ensure that they only exhibited the desired linguistic feature in each recording. This second survey was aimed at isolating each of the features from the others, in order to be able to analyze the specific reactions to each.

Participants who took the online survey answered basic demographic questions, and then were randomly directed to either the first survey (with all Utah English speech features combined into each passage) or to the second survey (with all the features isolated from each other). Participants then listened to six different recordings. The following flowchart illustrates the pattern of the surveys in general:
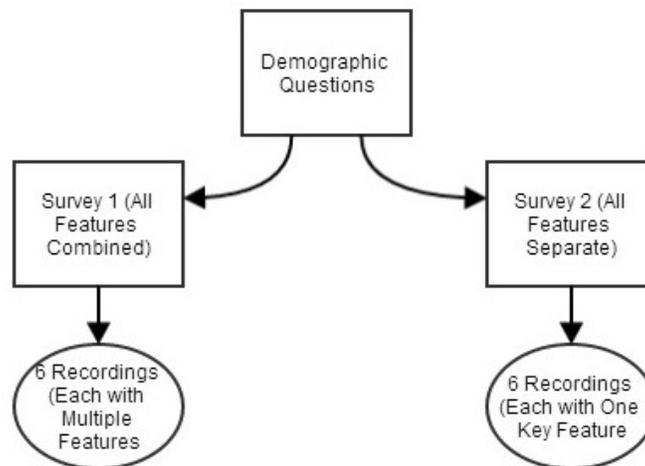
Figure 3.1: Flow of Surveys

Each of the six recordings that participants heard consisted of a pair of speakers each reading a passage of text. In one case, the first speaker spoke with Utah English features and the second without, while in the other case, the second speaker spoke with Utah English features and the first without. Participants were randomly (by the Qualtrics software) directed to one of the two. The following flow chart illustrates this:
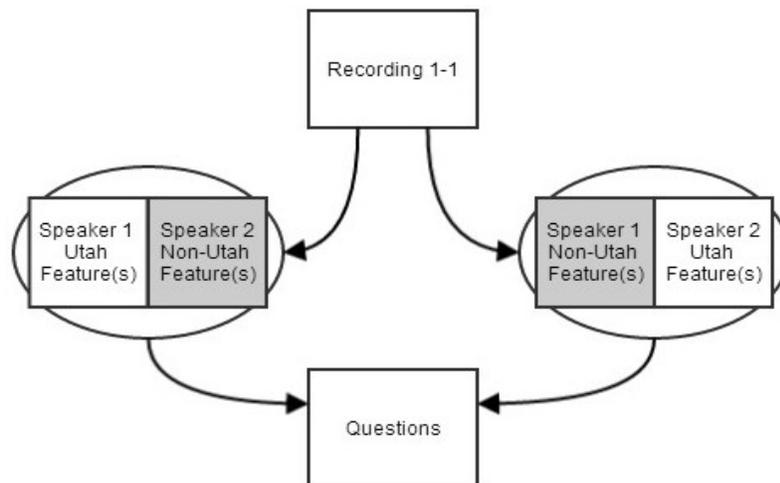
Figure 3.2: Flow of Recordings and Questions

As stated, in the first survey, the participants listened to six passages with combined Utah English features, and in the second survey, the participants listened to six passages, each of which contained a single Utah English feature. In both cases, after each recording the participants answered two questions ranking which speaker was deemed better in terms of intelligence/competence, and two questions ranking which speaker was better in terms of friendliness. The entire text of both surveys can be seen in Appendix A.

3.3 Controlling for Individual Speakers

In designing the survey, it became apparent that there was the possibility that extraneous aspects about the speakers' voices could potentially elicit reactions from survey participants, i.e. the pitch of the speaker's voice or their prosodic patterns might be appealing (or not) to a participant. A method was

devised to attempt to control for this effect, which has already been described: alternation of which speaker employed the Utah English features.

In order to measure how well this effect was controlled, random intercepts in survey 1 were used. Since survey 1 contained multiple Utahan speech features in each recording, the likelihood that a participant would favor a particular speaker based on the features used was reduced (because no *one* feature was employed in the recordings). Essentially, survey 1 is as close to neutral ground as possible, in determining if any unaccounted-for variables skewed participants' responses. The speaker was added as a random intercept variable in the statistical analysis in order to control for the possible effect of different speakers. If this random intercept were seen to be significant, it would mean that there was variation based on which speaker pair was speaking. If it were not significant, it would suggest that the controls implemented (matching speakers based on voice, and alternating which employed the Utahan features) succeeded in minimizing the effect of speaker pairs on the outcome of the survey.

This is not true, of course, of survey 2, which has a specific feature used by each speaker pair. When speaker was added as a random intercept for survey 2, it was found to be non-significant. In addition, the speaker variable would be confounded with which feature was being used. Thus, in survey 2, this random intercept was not added.

3.4 Method of Analysis

The results were analyzed using SPSS. Using this software, a mixed effects logistic regression analysis was performed, using participant and speaker as random intercepts (in survey 1) and participant as a random intercept (in survey 2).

The demographic information that was collected was broken down into the following variables. Also listed are variables based on the type of question the participants were answering, and the type of feature being heard. Together, these constitute the independent variables used in analysis:

- Age group of participants

    ○ 18–29

    ○ 30–39

    ○ 40–49

    ○ 50 and over

- Gender of participants

- Location selected by participant

    ○ Utah

    ○ Other Western states

    ○ Other

- Utahan speech feature in question

    ○ Epenthetic /t/

    ○ Cord/card merger

    ○ Fill/feel and fail/fell near merger

    ○ "Measure" as /meɪʒɹ/

    ○ Oral release of glottalized /t/

    ○ Pronounced /l/ in "palm," etc.

- Type of response

    ○ Gauging intelligence

    ○ Gauging friendliness

All demographic questions were asked at the beginning of the survey, on the first page after the

page featuring an initial consent agreement.

3.5 Participants

A total of 256 people participated in the two surveys. In the first survey (with all the speech features combined), 98 women and 32 men participated. In the second survey (with all the speech treated separately), 82 women and 44 men participated. The main strength of using an online survey to gather data is that it allows for the collection of large sets of data in relatively small amounts of time. However, as can be seen here, one of the drawbacks is that because the participants are, to a large extent, self-selecting, it is possible for there to be a disparity in the breakdown of the group. In this case, this is seen in the roughly 2:1 ratio of women to men, as well as the fact that significantly larger numbers of young people participated.

The following table shows the general breakdown of participants based on gender, age group, and which survey they participated in:

Age Group	Gender	Survey	Number of Participants
18-29	F	1	48
		2	36
	M	1	18
		2	15
30-39	F	1	22
		2	11
	M	1	2
		2	6
40-49	F	1	13
		2	7
	M	1	2
		2	0
50+	F	1	14
		2	28
	M	1	10
		2	23

Table 3.1: Participants by Age, Gender, and Survey

The participants were broken down by location, as well (this data is kept separate from the previous table to avoid it becoming overly long; adding it would cause the previous table to triple in length.)

Location	Survey	Number of Participants
Utah	1	35
	2	28
Western	1	40
	2	29
Other	1	51
	2	73

Table 3.2: Participants by Location and Survey

The survey question about where the participant was from was phrased in just that manner: they were simply asked where they were from. This question was left intentionally vague (as opposed to asking where the participant currently lived, or where they were born, or where they had spent the most time, etc.) in order to elicit what location the participants personally identified themselves with. Being "from" Utah might mean something different for one person than for another, but the key in this situation is that they identify themselves as being from a particular area. This admittedly introduces some degree of variation in the interpretation of the question, but an obvious alternative was not forthcoming.

4. Results

The data was originally divided into two sections, corresponding to the two different surveys: responses to the combined features of Utah English, and responses to the separate features of Utah

English. Additionally, the data was divided based on the type of question being asked: gauging intelligence, or gauging friendliness. Thus, there are four total data sets to be analyzed.

As was said before, the data was also coded such that any response that signified a preference for the non-Utah variant was coded as 1, while a response that signified preference for the Utah variant was coded as a 0. Thus, higher numbers and higher positions on graphs indicate a preference for the non-Utah English, while lower positions indicate . A few notes on the interpretation of the data are available in Appendix E.

The following sections will deal with inferential statistics and the breakdown of how specific factors influenced participants' responses. In terms of raw percentages, however, the following was found:

Survey and Question Type	% Prefer Utah English	& Prefer Non-Utah English
Survey 1, Gauging Friendliness	40%	60%
Survey 1, Gauging Intelligence	25%	75%
Survey 2, Gauging Friendliness	49%	51%
Survey 2, Gauging Intelligence	40%	60%

Table 3.3: Preference Percentages for Utah vs. Non-Utah English

These data, while showing the overall amount of preference or stigmatization that the varieties received, do not explain what specific factors account for that variation. The following data are necessary to for that.

4.1 Survey 1 (Combined Features), Gauging Friendliness

The analysis of the first section consisted of a mixed effects logistic regression with a random intercept for participant and speaker. The dependent variable was the determination of which speaker sounded more friendly. Responses favoring the non-Utah variant are considered stigmatization. The following results were found: gender was not significant ($F (1, 1507) = 2.560, p = .110$) as was age (*F*

(1, 1507) = 0.003, p = .960) and location: (F (2, 1507) = 1.017, p = .362). In other words, no

independent variables were significant predictors of the participants' responses. This means that, when

listening to the excerpts that contained multiple features of Utah English, no groups had significantly

different responses than the others. Essentially, the conglomerate effect of Utah English features does

not affect people's perception of a person's friendliness in any significantly discernible ways.

4.2 Survey 1 (Combined Features), Gauging Intelligence

The analysis of the second section likewise consisted of a mixed effects logistic regression with

a random intercept for participant and speaker; the difference from the previous analysis is that the

dependent variable was stigmatization as determined by the participants' choices of the most intelligent

sounding person. The following results were found: gender was significant (F (1, 1501) = 11.304, p = .

001). Location, on the other hand, was not significant (F (2, 1501) = 0.112, p = .894). Additionally, the

following significant interactions were found: gender by age Group (F (5, 1501) = 2.462, p = .031), and

location by gender (F (2, 1501) = 5.884, p = .003). Location was not found to be significant, but was

retained in the statistical model because the interaction of location by gender was found to be

significant.

In order to derive meaning from these statistics, further information is necessary. The following

table shows the coefficients and significance levels for the two non-interaction factors looked at in the

analysis:

Model Term	Coefficient ▶	Sig.
Intercept	1.425	.000
Gender= f	-0.694	.084
Gender= m	0[a]	
ThreeLocations=Other	-0.610	.048
ThreeLocations=Western	-0.683	.043
ThreeLocations=ZUT	0[a]	

Table 4.1: Coefficients and significance levels for survey 1, gauging intelligence

The 0[a] coefficient indicates that that particular factor was the baseline used for comparison. In this case, the male gender was used as the baseline. The female gender has a negative coefficient (−0.694) which shows that, in comparison to the male participants, the female participants stigmatized the speaker with Utah characteristics less often. In other words, in the data, the female listeners chose the speaker with Utah characteristics as more intelligent to a higher degree than the male listeners did. However, this trend does not reach the threshold of significance, making it impossible to assume that this pattern is representative of reality. Utah location was also used as the baseline. In comparison to participants from both the Western and Other locations, Utahan participants stigmatized significantly less, meaning that in the survey they were more likely to select the speaker using Utah English features as being more intelligent. A particularly interesting part of the data is shown in the interactions. The first interaction that was analyzed was between gender and the age group of the participants.
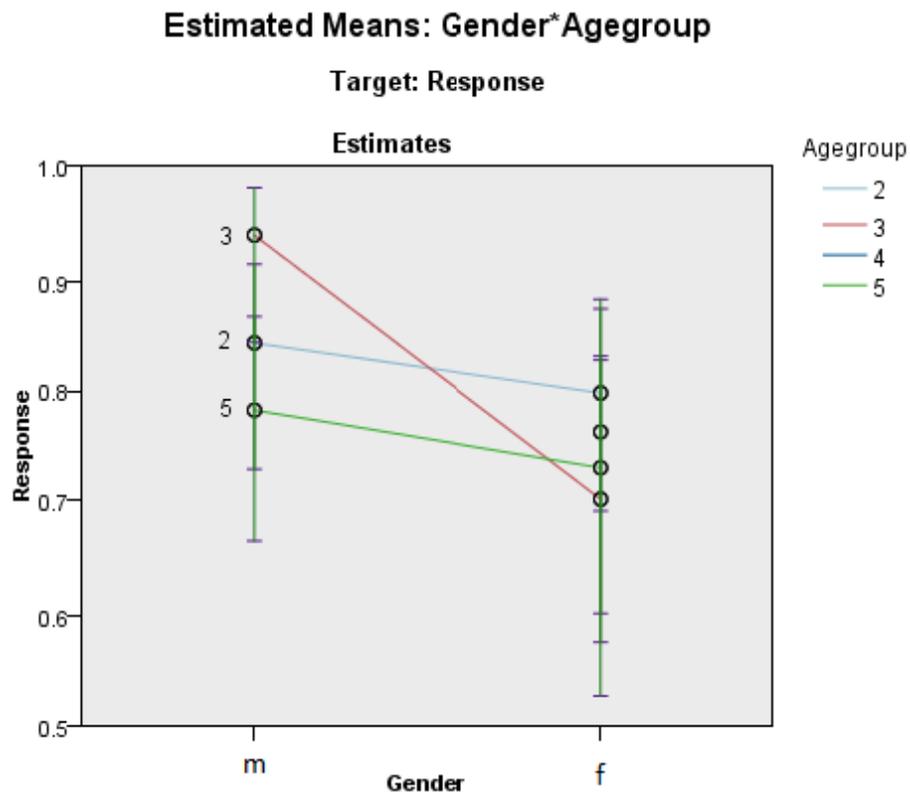
Estimated Means: Gender*Agegroup

Target: Response

Figure 4.1: Estimated means of stigmatization ratings for gender by age group

This graph shows the overall interaction of gender and age group. As can be seen, the male participants consistently stigmatized more than their female counterparts, and for the most part, the relative level of stigmatization by age group stayed the same (participants in their 20s more than those 50 and above). The exception to this is participants in their 30s. Among the male participants, this age group preferred the speakers with non-Utah characteristics to a greater degree than the female participants. Only among the participants in their 30s did the gender of the participant make a significant difference in the outcome. The data was insufficient to compare participants in their 40s (a gap in the data resulted in no tokens of male respondents in that age group). Another, perhaps clearer, way to view this data is seen in the following graphs. The graphs show the relative differences between genders among the various age groups. In these graphs, the levels of deviation from the mean are

measured. The line in the middle indicates the mean, and the bar graphs are gray (indicating non-significant levels) or black (indicating significant deviation from the mean).
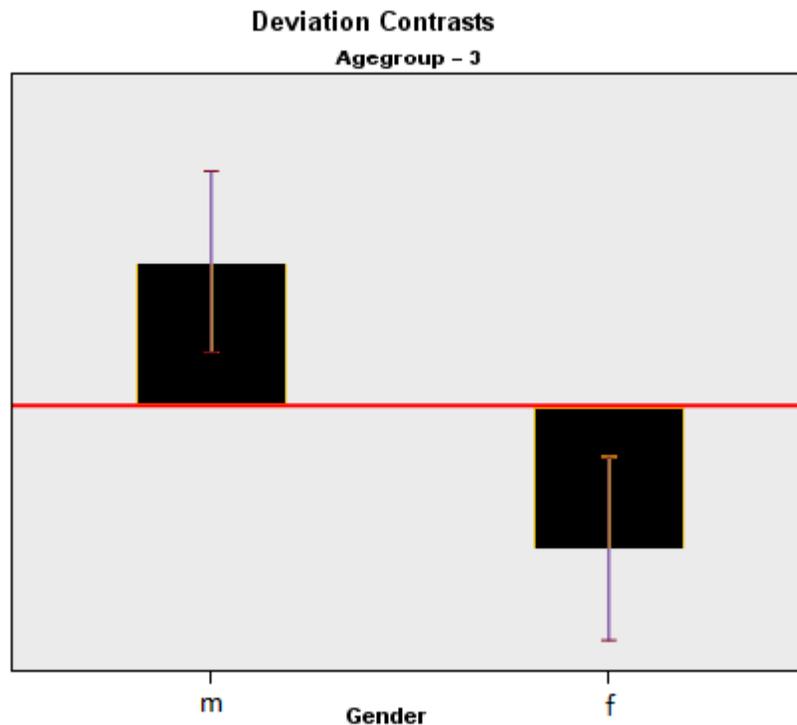

Figure 4.2: Deviation contrasts of males and females within the 30s age group

When visualizing the data in this way, the relationship between the gender and age group variables becomes very clear. Only in the 30s age group is it significant. Within that age group, the overall pattern is still visible (male participants stigmatizing more than female participants), but to a much greater degree than in the other cases. The second interaction that was measured was between the gender of the participants and their location.
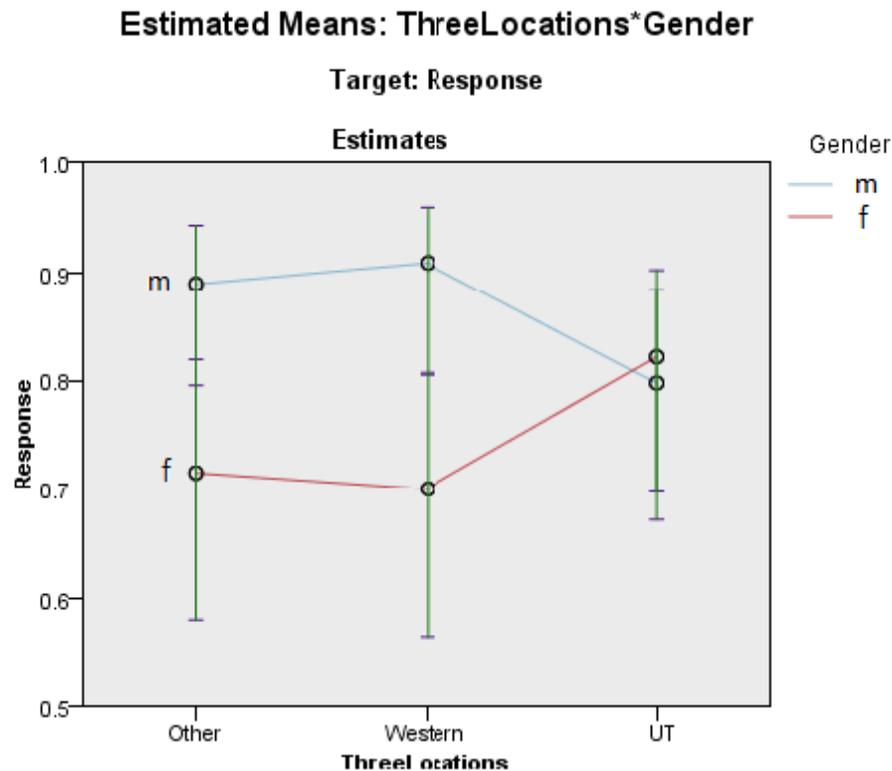
Figure 4.3: Estimated means of stigmatization ratings for location by gender

As can be seen, male participants stigmatized more than female participants overall, and this remained true among the Western participants and the participants from other locations. However, among participants from Utah, the trend is the opposite: women stigmatized more than men. Once again, visually showing the deviation from the mean can be a clearer way to visualize this data. (Note that in the following graphs, the significance shown is a significant deviation from others in the same gender group. In other words, significant deviations do not mean that there is a difference between men and women, but rather that there is a difference between men from a specific location and men from other locations, or else between women from a specific location and women from other locations).
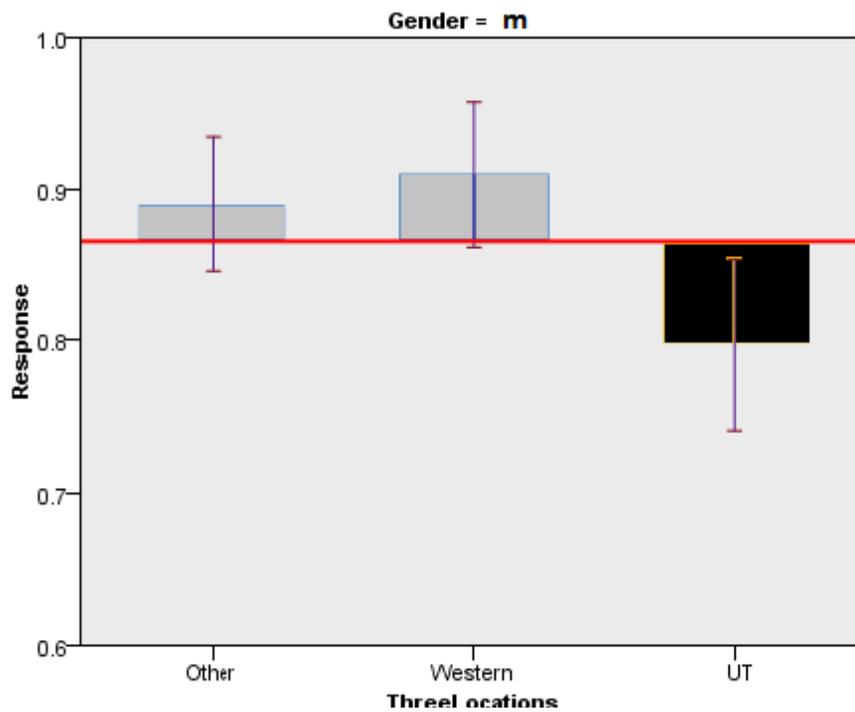
Figure 4.4: Deviation contrasts of males from three different locations

As can be seen here, male participants from Utah were more likely to have a positive attitude toward the Utah English variant than males from other locations. This is interesting, in that it goes against the general gender trend seen previously (see figure 4.3).
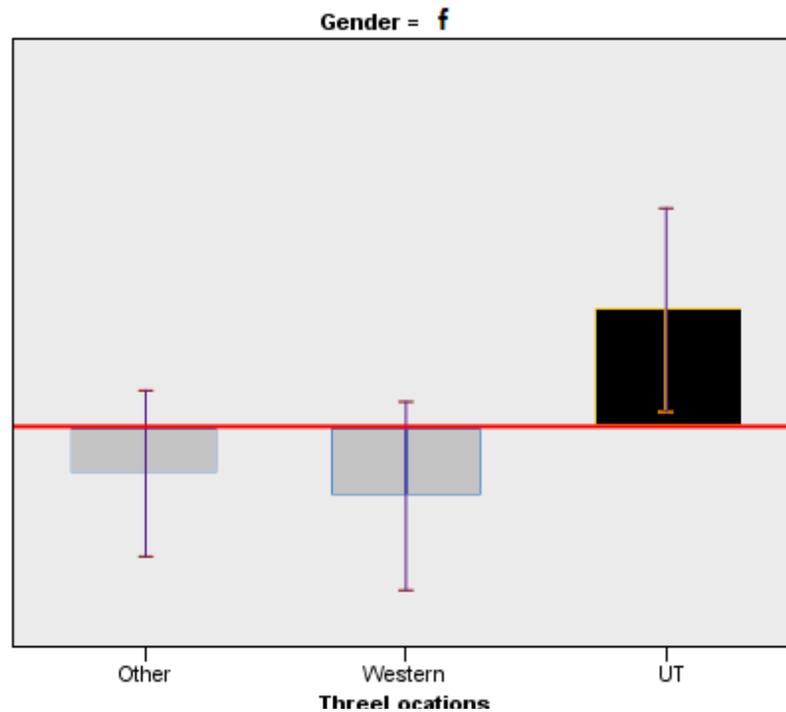
Figure 4.5: Deviation contrasts of females from three different locations

It becomes apparent that within Utah, the attitudes about Utah English not only show significant differences based on gender, but the attitudes also run contrary to the pattern found in other areas (e.g. in figure 4.6, non-Utahan participants stigmatized greater than the mean, while Utahan participants stigmatized significantly less).

The random intercepts by participant and speaker were included. It was found that listener was a significant random factor ($p < .001$), but that speaker was not ($p = .137$). The fact that speaker was not a significant random factor is an indication that the measures taken to control for variation in speakers' voices (as outlined in the methodology section) were successful in doing so.

4.3 Survey 2 (Separate Features), Gauging Friendliness

The analysis of the fourth section likewise consisted of a mixed effects logistic regression with a random intercept for participant. Speaker was not included as a random intercept, because each

speaker pair was assigned a particular feature of Utah English, and this causes the variables of speaker and feature to be confounded. The dependent variable was the determination of which speaker sounded more friendly. The following results were found: gender, was found to be non-significant (F (1, 1475) = .534, p = .465) as was location (F (2, 1475) = .384, p = .681), as was age group (F (3, 1475) = .867, p = .457). Feature (such as oral release, fill/feel, etc.) was found to be significant, (F (5, 1475) = 14.078, p < .001). In terms of interactions, feature by location was found to be significant, (F (10, 1475) = 1.901, p = .041) as was feature by age group (F (15, 1475) = 3.668, p < .001). Location and age group were retained in the analysis despite their non-significance because of their presence in significant interactions. The following graph shows the degree to which the participants preferred the speaker without each of the Utah characteristics over the speaker with the Utah characteristics. Higher numbers indicate that a speaker using a particular Utah English feature was judged as less friendly. (Note that these are presented in alphabetical order).
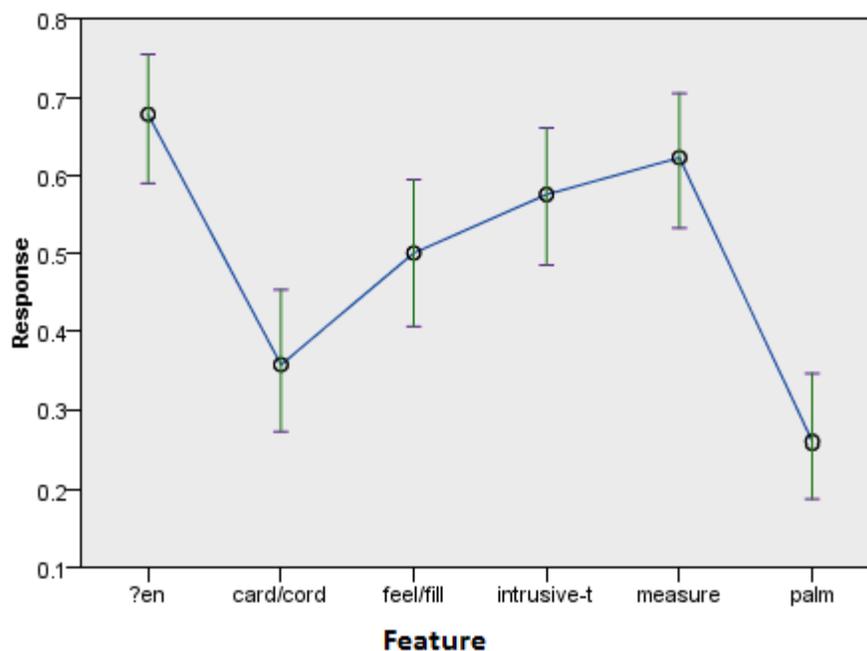
Figure 4.6: Response means for individual features

The card/cord merger and the pronounced /l/ feature (coded here as "palm") show very low levels of stigmatization overall, whereas the oral release feature (coded here as "?en") shows the highest level of stigmatization overall. All of the features, with the exception of the feel/fill merger, showed significant deviation from the mean:

Figure 4.7: Deviation contrasts of responses based on individual feature

The graph shows that there is significantly less positive attitude toward the oral release, intrusive /t/, and measure as /meɪʒɪ/ features. In addition to that, the following significant interactions were seen in the data, beginning with the interaction between location and feature.

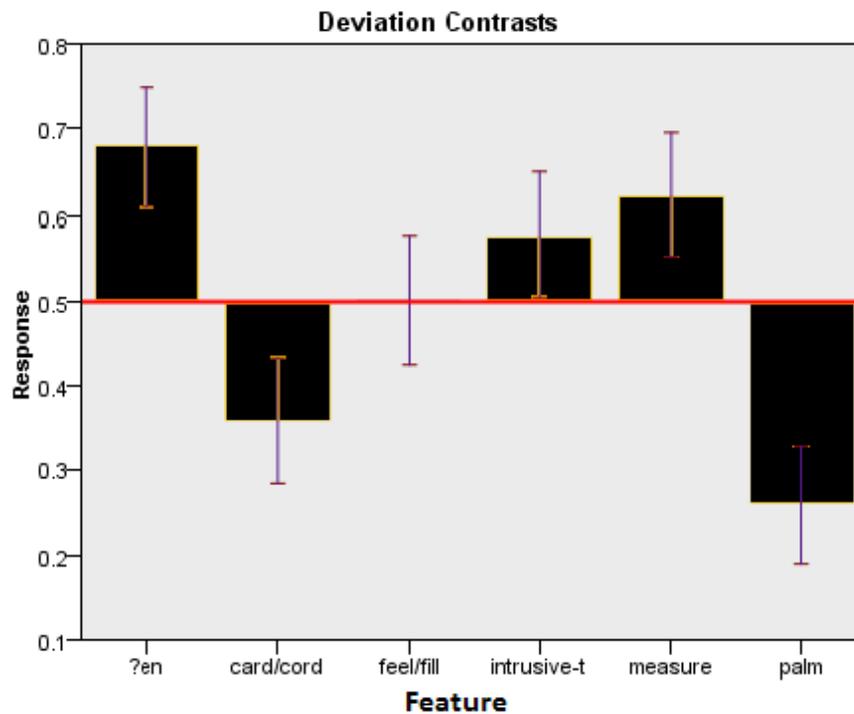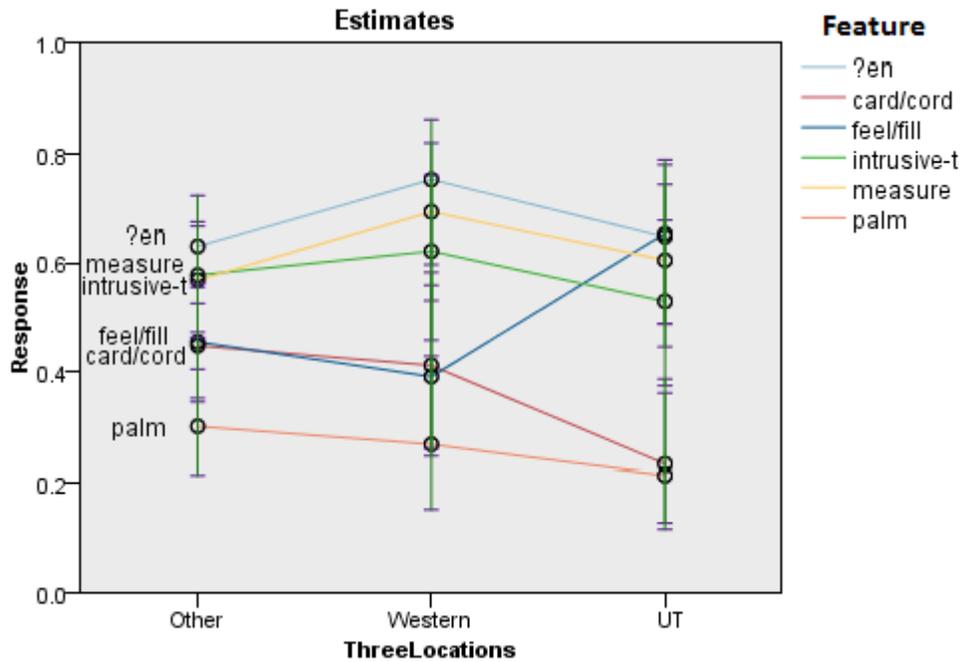*Figure 4.8: Estimated means of stigmatization ratings for location by feature*

The cord/card merger and pronounced /l/ feature show low overall stigmatization, while the intrusive /t/, oral release, and measure as /meɪʒɹɪ/ features show high levels of stigmatization. The feel/fill merger shows interesting differences based on location, which are further discussed with figure 4.10. When looking at the interaction of feature and location, the oral release, measure as /meɪʒɹɪ/, pronounced /l/, and intrusive /t/ do not show significant deviation from the mean, in terms of perceived friendliness. The following two graphs show the features that were significant in more detail:
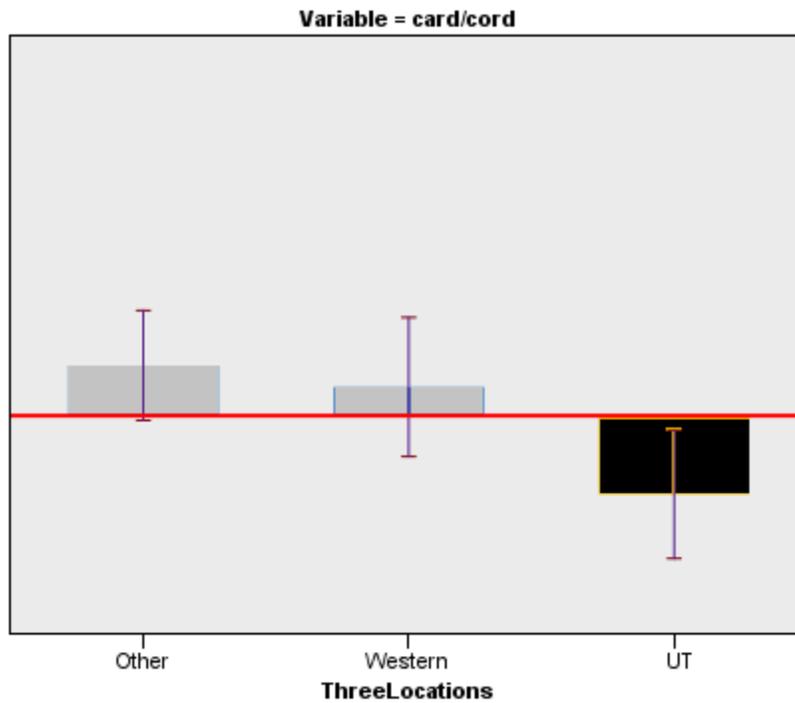
Figure 4.9: Deviation contrasts of card/cord feature in various locations

The card/cord merger showed a significant interaction with location. Participants from Utah favored this feature significantly more than did participants from other areas.
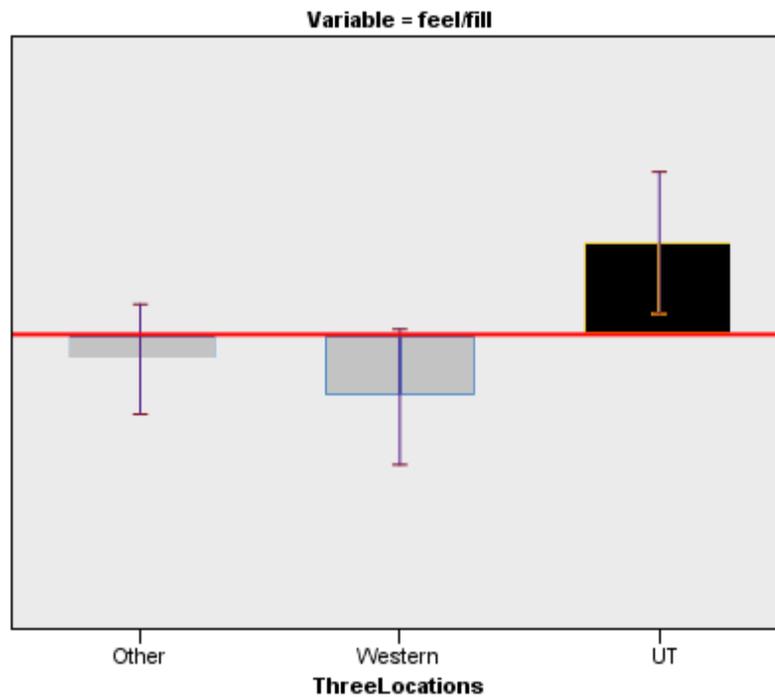
Figure 4.10: Deviation contrasts of feel/fill feature in various locations

Like the card/cord merger, the feel/fill merger did show some significant deviation from the mean, again in the case of Utahan participants. But while in the case of the cord/card merger participants from Utah favored the feature significantly more than the mean, in the case of the feel/fill merger, participants from Utah disfavored the feature significantly more than the mean.

The next significant interaction is age group by feature:
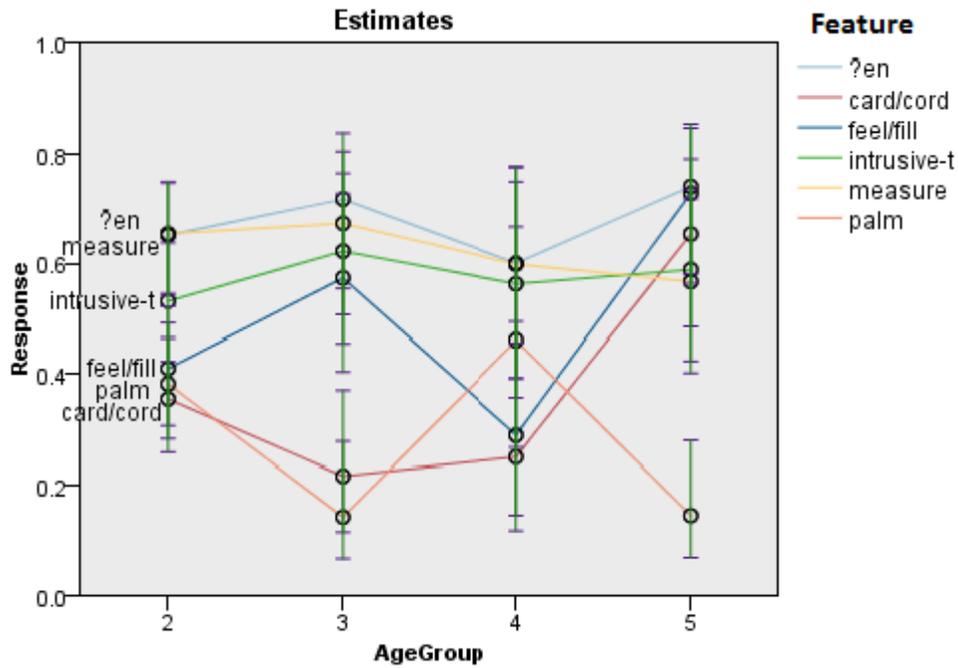
Figure 4.11: Estimated means of stigmatization for feature by age group

This interaction has a large amount of complicated elements, and so it will be most easily discussed when broken down into its constituent parts. Within the interaction of feature and age group, the oral release, intrusive /t/, and measure as /meɪʒɹ/ features did not show significant deviation from the mean. Interestingly, all three of these also exhibited relatively high levels of stigmatization, overall: they were the three most stigmatized features of all age groups except those above age 50.
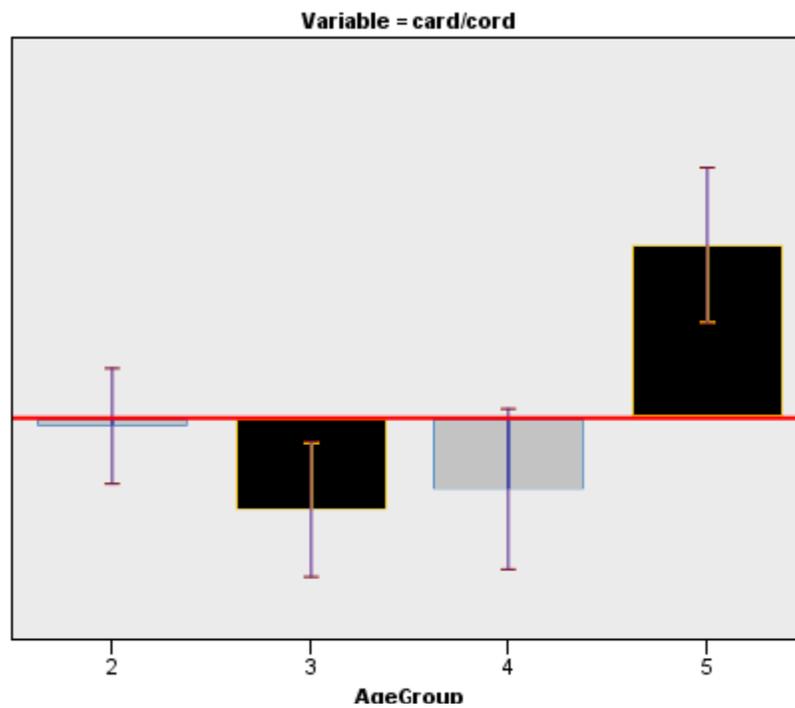
Figure 4.12: Deviation contrasts of card/cord feature by age group

Here, it can be seen that there are significant deviations from the mean when dealing with the card/cord merger. It is interesting to note that the age group of 50 and above stigmatized this feature more than any other group. In fact, overall, stigmatization of this feature is relatively low, with the exception of this older group. Possible age-related factors involved in this judgment will be discussed in later sections.
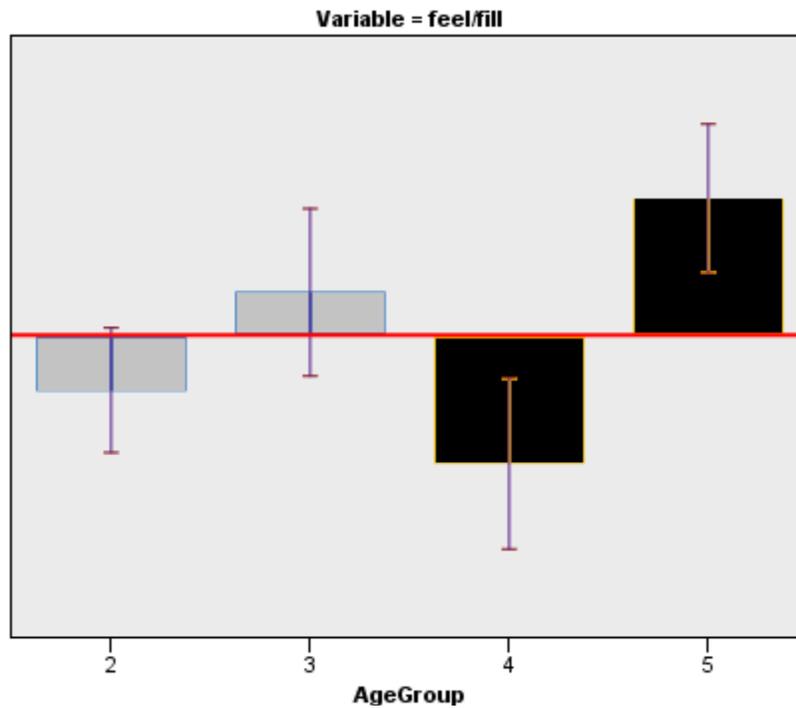
Figure 4.13: Deviation contrasts of feel/fill feature by age group

In terms of the feel/fill merger, only participants in their 40s or 50 and above deviated from the mean, but oddly, these two groups deviated in opposite directions. Participants in their 40s stigmatized this merger significantly less, while those 50 and older stigmatized it significantly more. It is hard to understand why these two back-to-back age groups would have such differing reactions to the same speech feature.
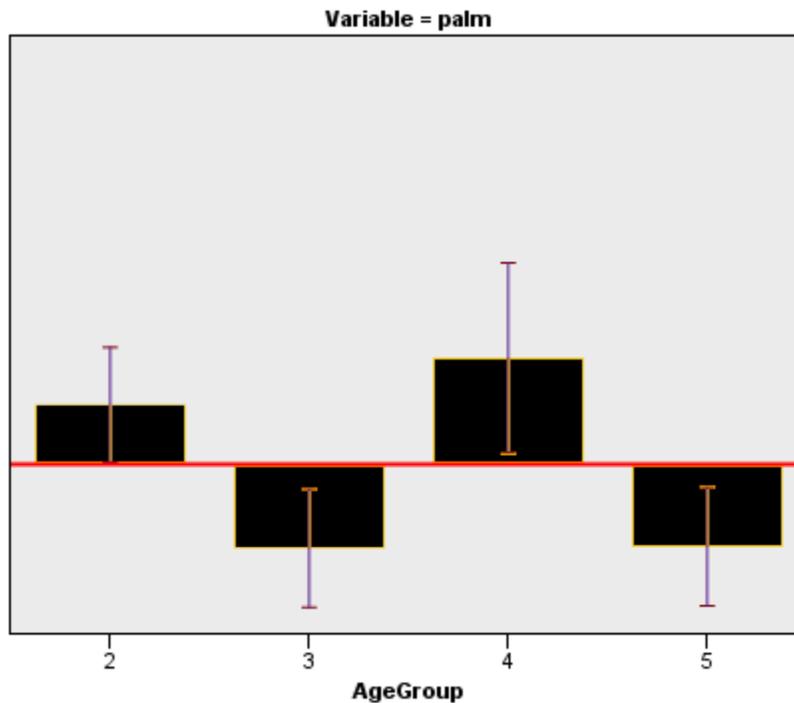
Figure 4.14: Deviation contrasts of pronounced /l/ feature by age group

The pronounced /l/ feature has shown, overall, a relatively low level of stigmatization. However, it can be seen here that the different age groups all deviated from the mean significantly. What is odd about this is the staggered, every-other age group pattern that is seen. Participants in their 20s and 40s stigmatize this usage more, whereas those in their 30s and 50 and over do so less. It is possible that there is some kind of generational factor at play here, but the data are insufficient by themselves to determine this.

4.4 Survey 2 (Separate Features), Gauging Intelligence

The analysis of the fourth section likewise consisted of a mixed effects logistic regression with a random intercept for participant. Just as in the previous section, speaker was not included as a random intercept. The difference from the previous analysis is that the dependent variable was stigmatization as determined by the participants' choices of most intelligent sounding person. The following results were found: Gender and location were not significant, (F (1, 1485) = .139, p = .709), nor was location (F (2, 1485) = .014, p = .986). However, age group was significant, (F (3, 1485) = 3.043, p = .028) as was feature (F (5, 1485) = 18.174, p < .001). Additionally, the interactions of gender by variable showed significance, (F (5, 1485) = 4.618, p < .001), as did location by feature (F (10, 1485) = 2.427, p = .007). Gender and location, despite being non-significant, were included in the analysis because of their involvement in significant interactions. The following table shows the coefficients for the three non-interaction variables that were found significant.

Fixed Coefficients

Target:Response
Reference Category:0

Model Term	Coefficient ▶	Sig.	Exp(Coefficient)
Intercept	-1.327	.007	0.265
Gender=f	0.977	.014	2.655
Gender=m	0ᵃ		
AgeGroup=2	0.027	.917	1.027
AgeGroup=3	0.367	.244	1.444
AgeGroup=4	-0.666	.054	0.514
AgeGroup=5	0ᵃ		
ThreeLocations=Other	0.146	.717	1.157
ThreeLocations=Western	0.197	.678	1.218
ThreeLocations=ZUT	0ᵃ		

Table 4.2: Coefficients and significance levels for survey 2, gauging intelligence

Again, the significance levels in the coefficient table indicate whether the various items in a group differ significantly from the one item used for baseline comparison. Whether these items are significant predictors of overall responses is seen in the previous table. In this case, it is possible to see a few patterns. First, female participants stigmatized more than male participants. In addition, it may

appear that in comparison to the 50s age group, the 40s age group stigmatized less, while the 30s groups and 20s group stigmatized more, and overall, both other groups stigmatized more than Utahans. However, this cannot be concluded because these factors did not reach the threshold of significance.

Which feature was being heard was deemed to be significant. The following graph shows the varying levels of stigmatization associated with each feature:
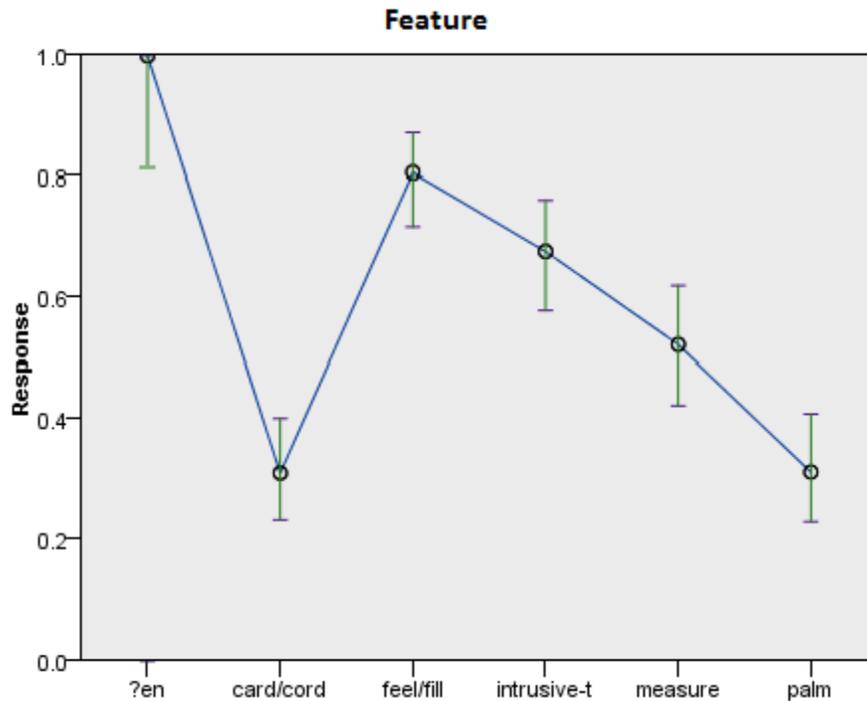
Figure 4.15: Stigmatization response percentages, survey 2, gauging intelligence

The oral release feature shows the highest degree of stigmatization, followed by the feel/fill merger. The card/cord merger and the pronounced /l/ feature are stigmatized to relatively low degrees. The following graph shows the deviation from the mean that each of the features show:
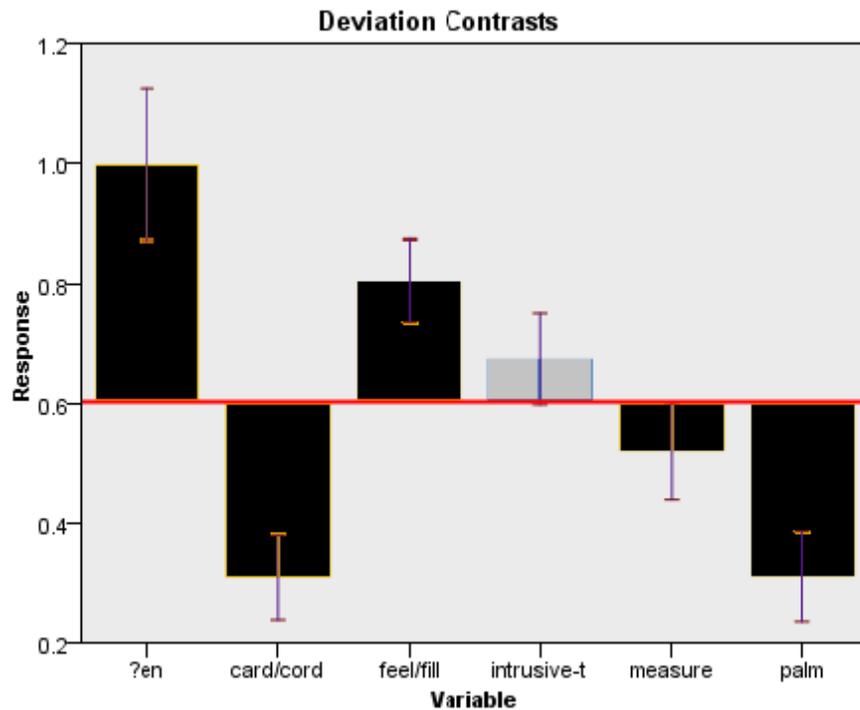
Figure 4.16: Deviation contrasts of various features

Similar to the previous graph, this shows the high degrees of deviance that each feature shows

from the mean. The intrusive /t/ feature is the only one not significantly different from the mean. The

same patterns can be seen here as before: high stigmatization of the oral release feature and the feel/fill

merger and very low stigmatization of the cord/card merger and the pronounced /l/ feature.

The following graphs look at the various interactions. The first significant interaction was

between gender and feature.
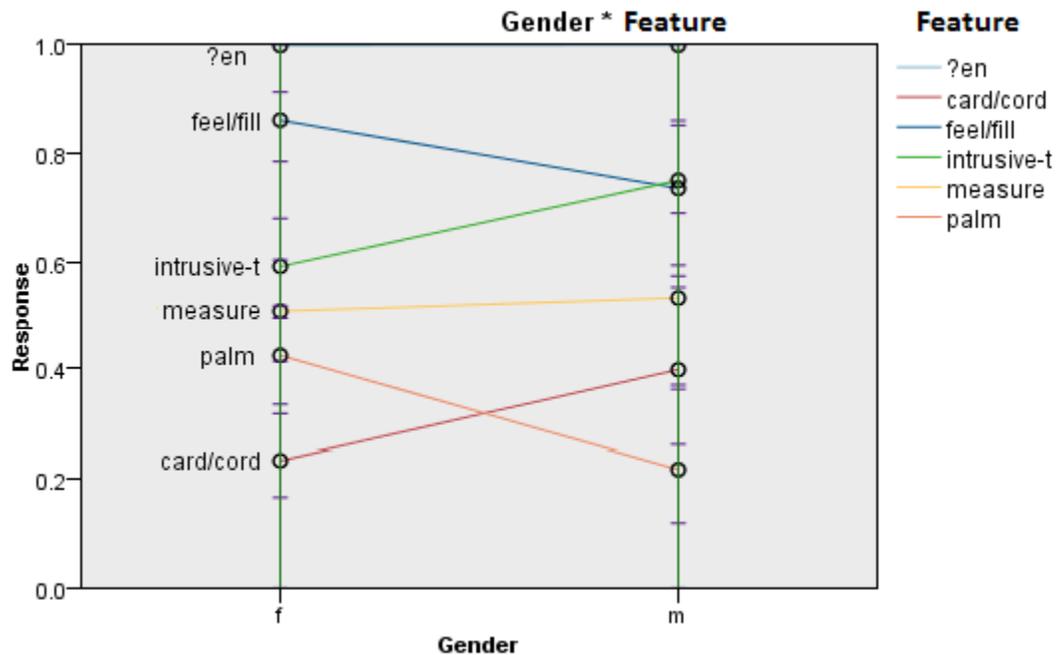
Figure 4.17: Estimated means of stigmatization ratings for gender by feature

A few interesting trends are visible in this graph. First, it is important to note that the oral release of glottalized /t/ feature (coded as "?en") is so highly stigmatized by both genders that it is almost not visible at the top of the graph. The pronunciation of measure as /meɪʒɹ/ has a similar degree of stigmatization across genders. However, it appears that male and female participants had opposite impressions of the cord/card merger and pronounced /l/: while they were stigmatized lowest of all features by both genders, female participants stigmatized the cord/card merger more, while male participants stigmatized pronounced /l/ more. Additionally, male participants seemed to stigmatize the intrusive /t/ feature and the feel/fill merger approximately the same amount, while female participants seemed to stigmatize intrusive /t/ less and the feel/fill merger more than male participants did.

Performing a pairwise contrast between the male and female participants yields the following results:

Pairwise Contrasts

Variable	Gender...	Contrast Estimate ▶	Adj. Sig.
?en	f - m	-0.001	0.988
	m - f	0.001	0.988
card/cord	f - m	-0.165	0.044
	m - f	0.165	0.044
feel/fill	f - m	0.125	0.081
	m - f	-0.125	0.081
intrusive-t	f - m	-0.158	0.048
	m - f	0.158	0.048
measure	f - m	-0.024	0.794
	m - f	0.024	0.794
palm	f - m	0.207	0.006
	m - f	-0.207	0.006

Significant contrasts are shaded gold. The least significant
difference adjusted significance level is .05.

*Table 4.3: Pairwise gender contrast, survey 2, gauging
intelligence*

As can be seen, the gender differences between the cord/card merger, the intrusive /t/, and the
pronounced /l/ are all significant. Although a difference is visible in the graph between genders in
regard to the feel/fill merger, it does not reach the threshold of significance here ($p < .05$).

The second significant interaction was between location and feature.
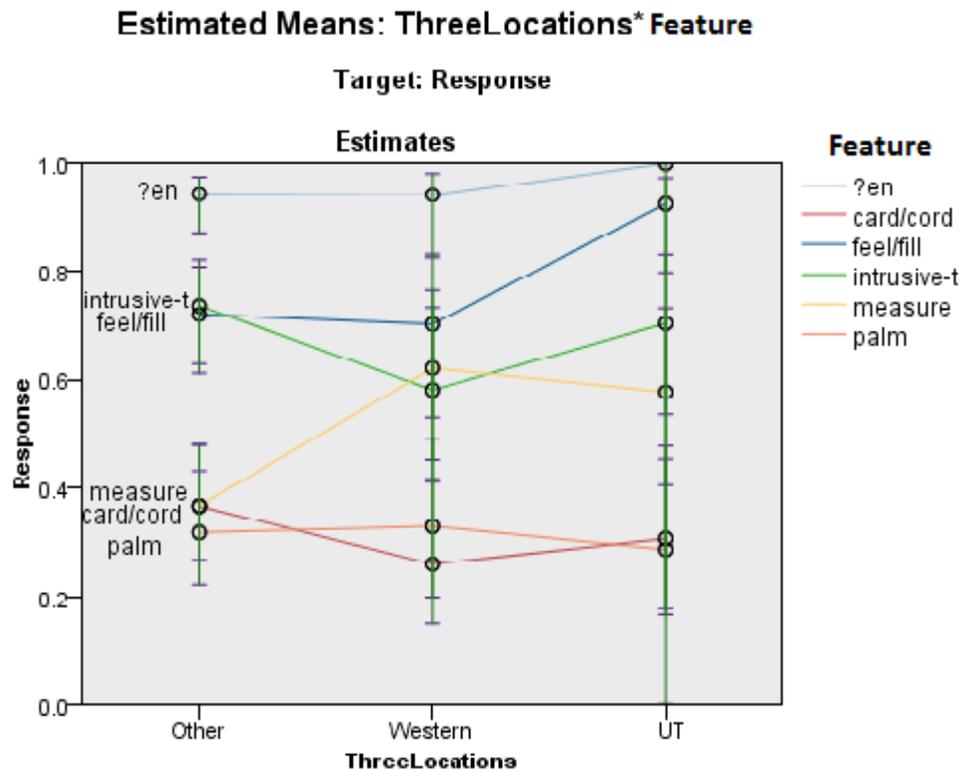
Figure 4.18: Estimated means of stigmatization ratings for location by feature

There are a lot of interesting interactions going on in this data; therefore, instead of attempting to discuss it all here, it will be discussed with each of the following graphs, which show the deviation from the mean. The pronounced /l/ feature and the cord/card merger are both stigmatized to a very low degree, and this is consistent across locations. The intrusive /t/ feature is stigmatized more, but there doesn't appear to be variation based on location. Thus, these features have non-significant deviations from the mean. This is not the case with other features, however.
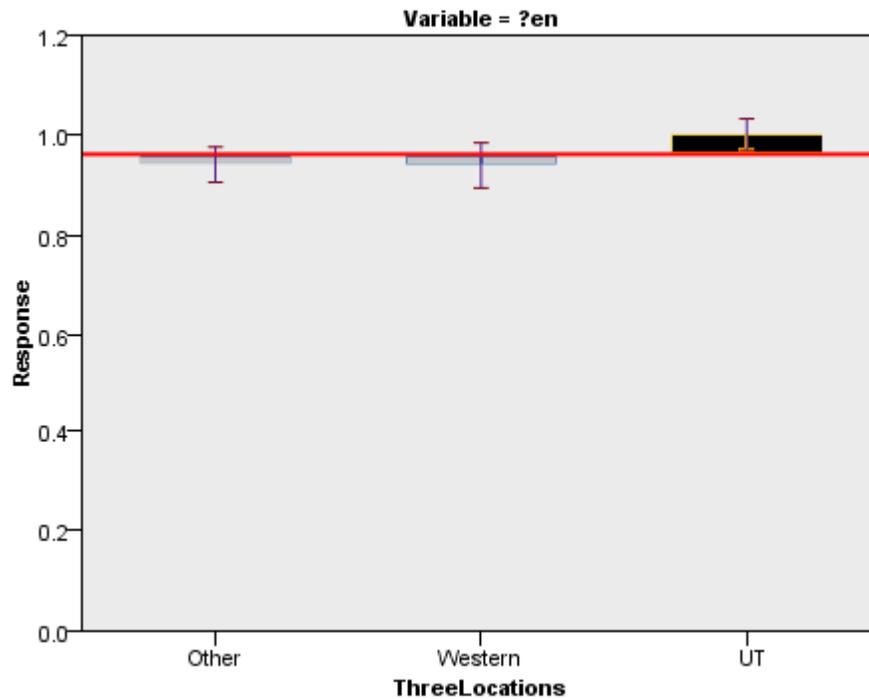
Figure 4.19: Deviation contrasts of oral release feature in various locations

What is interesting about the oral release feature, seen here, is that it received an incredibly high degree of stigmatization. When answering the intelligence-related questions, this feature was stigmatized in over 95% of total responses. What is exceptional here, then, is that even with such a high level of stigmatization, the Utahan respondents are able to show statistically significant deviation from the mean. It seems people think poorly of this feature, and Utahans do so more than anyone else.
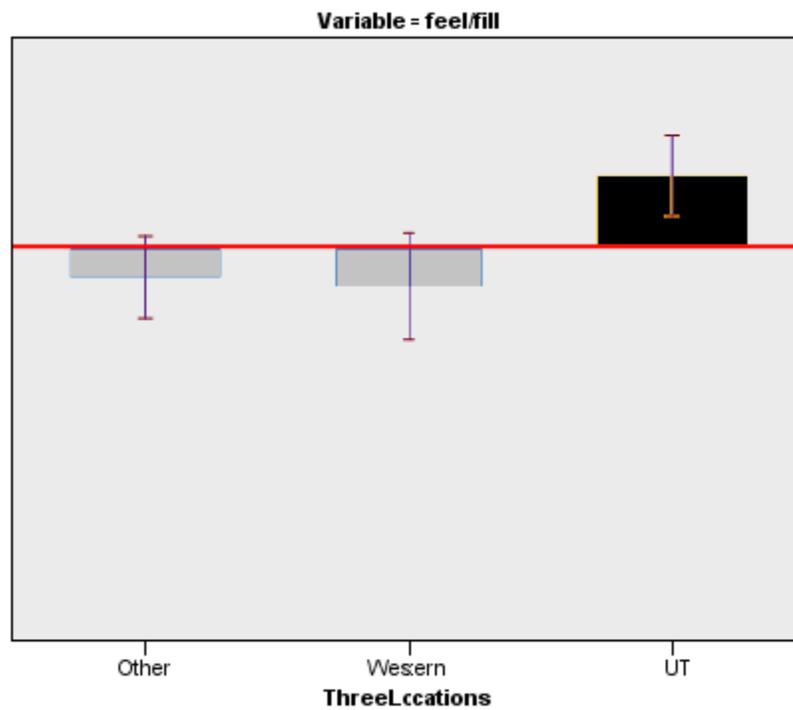
Figure 4.20: Deviation contrasts of feel/fill feature in various locations

Similar to the previous feature, the feel/fill merger is fairly highly stigmatized. Also similar to the previous feature, Utahans appear to have a particularly strong response, and stigmatize this feature more than people in other locations.
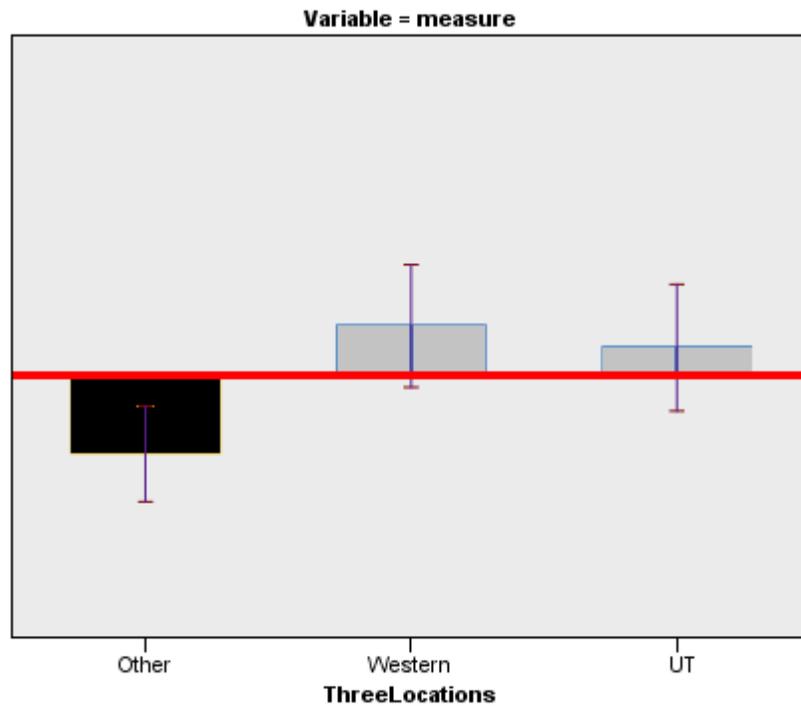
Figure 4.21: Deviation contrasts of /meɪʒɹ/ feature in various locations

While this feature ("measure" pronounced as /meɪʒɹ/) shows significance, contrary to the previous features, it is not the Utahans that are exhibiting a particularly different response. In the case of the "measure" as /meɪʒɹ/ feature, people from non-Western, non-Utahan locales stigmatize significantly less.

5. Discussion

The factors looked at were the age, gender, and location of origin of the participants, as well as the individual speech features in question. Additionally, the interactions between these factors was looked at. The following items are of particular interest when looking at the overall results.

One interesting factor in interpreting the results seen here is the location of origin of the participants. It was not uncommon to see that participants from Utah had very differing reactions to particular speech features than did people from other locations. Under the section of gauging intelligence based on combined features (section 4.2), figures 4.4 and 4.5 show how Utahans of either gender react significantly differently than non-Utahans, but in opposite ways. In section 4.3, about gauging friendliness based on separate features, figures 4.9 and 4.10 show how Utahans react with significant difference based on the specific features being looked at. In section 4.4, about gauging intelligence based on separate features, figures 4.19 and 4.20 show how Utahans once again react significantly differently than other location groups, based on the features. What this seems to suggest is that, at least in the case of certain speech features, the Utahan participants were more aware of them and had more specific attitudes associated with them. This, in turn, reinforces the concept of these features being considered a part of the Utah English speech variety. Interestingly, figure 4.21 shows that the non-Utahan, non-Western participants had a strongly different reaction to a particular feature (the /meɪʒɹɪ/ pronunciation). While it is possible that this is because that particular feature may hold a particular status amongst non-Western speakers, what seems more likely is that this is a more generally western speech feature, as opposed to a uniquely Utahan one, and that it is recognized by *both* the Utahan and Western participants. It may not be a stereotypical Utah English feature. This would cause the participants from other areas to show up as being significantly different from the Utahan and Western participants.

Another factor of note is the gender of the participants. Overall, it can be seen that (at least in

the combined features intelligence section) men stigmatize more than women, most notably in the 30s

age group (figure 4.2). However, this is not the case in Utah, where women are seen to have a

significantly higher level of stigmatization (figures 4.4 and 4.5). Within Utah, the men stigmatize

significantly less and the women significantly more. If the previously suggested idea is true—that

Utahan listeners are more aware of the speech features and thus have stronger associations with them,

and stronger reactions to them—it is interesting to see *how* the reactions differ. Men in Utah are more

accepting of the speech features than the average, while women appear to be more condemnatory.

The age groups of the participants is interesting, but somewhat difficult to interpret. Figures

4.13 and 4.14 illustrate this difficulty. It appears that there is some degree of alternation between every

other age group. If the stigmatization level steadily increased or decreased with age, it would be easy to

assign meaning to those results. As it is, the only thing that seems possible to explain the patterns in the

age group factor is that, perhaps, there is an alternating generational effect; people of one generation

are more accepting of non-standard speech, while the next is less accepting, and then the third reverts

back to the attitudes of the first. This is purely speculation; there is not enough data here to determine

with any confidence.

The factor perhaps most worthy of note is that of which speech feature was being judged.

Obviously, this factor only shows up in the second survey's results. Figures 4.7 and 4.16 are the clearest

representations of this, although the same patterns can be seen in the various interactions in sections 4.3

and 4.4. There is some variation in how much features are stigmatized, depending on whether the

gauge is of friendliness or intelligence. Regardless, the oral release of glottalized /t/ is, by a wide

margin, the most highly stigmatized individual speech feature, in terms of both friendliness and

intelligence. The cord/card merger and the pronounced /l/ feature both consistently receive a low

degree of stigmatization. Two of the variable features are the pronunciation of "measure" as /meɪʒɹ/ and

the feel/fill merger. The /meɪʒɹ/ pronunciation is stigmatized as showing a lack of friendliness much

more than a lack intelligence. At the same time, the feel/fill merger seems associated with a lack of

intelligence, but not a lack of friendliness.

5.1 Salience

One important thing to keep in mind is the level of salience that each of these features has. How

aware is the speaker of the speech feature in question? How much does it affect his or her judgment? In

Utah, personal experience seems to indicate a relatively high level of cultural awareness of at least

some of the speech features that comprise Utah English; when Utahan participants hear these features,

they react to them because they recognize them. A participant from elsewhere, despite hearing the same

recordings, will have a different set of features that he or she is aware of, or that are culturally relevant.

The amount of experience listeners have with a language variety has a strong effect on their perceptions

of it (Baker, Eddington, and Nay 2009). The levels of salience differ between participants from various

areas, but also between the specific features being heard, even among participants from a single

location. This is borne out in the data, particularly in section 4.4, specifically the data in figure 4.18, in

which the variation in responses can be seen based on the location of origin and specific feature.

5.2 Social Associations with Specific Speech Features

It is possible that the patterns of stigmatization that occur in the current study have their basis in

the perceived social groups. For instance, the oral release of glottal stops is predominantly employed by

younger speakers in Utah (Eddington and Savage 2012), and this features has been seen to be highly

salient and highly stigmatized against. By comparison, the card/cord merger is predominantly

employed by older speakers in Utah (Bowie 2003), and this feature was stigmatized among the least of

all features analyzed. While one might infer that speakers may be reacting to the associations these

features have to social groups, meaning older people are seen as better speakers overall than younger

people, the data is insufficient to make this assumption.

Again, this has ties to salience. A participant unfamiliar with Utah English would, in all

likelihood, be unaware of the relationship between age groups and feature usage, and would therefore be unlikely to be stigmatizing against a particular group when making judgments about the voice recordings. A Utahan participant, on the other hand, whether or not he or she is consciously aware of the features and their social associations, would at least have some degree of familiarity with them. Thus, any specific social factors here are more likely to be occurring within the Utahan participant group.

6. Conclusion

The purpose of this survey, generally, was to see how various factors influenced the attitudes people have toward Utah English; more specifically, it was to test the idea that Utahans themselves have are more disapproving of Utah English than are people from other areas. The results show that that assumption trends toward being true, but that it is more complicated of an issue than that. Utahans did generally show stronger reactions toward Utah English, but in differing ways, based on other factors. For example, Utahan men stigmatized less than other men, while Utahan women did so more than other women, and all participants were more influenced, overall, by the specific speech feature they heard than by where they were from.

6.1 Recommendations for Further Research

The current study has, admittedly, several limitations. Online studies are plagued by the problem of selection bias. Those who participated in the study are, by necessity, the type of people who are generally more willing to take surveys online. This can be a potentially confounding variable, because people with that kind of temperament may also be more likely to think certain ways about the survey content. By allowing people to self-select, it is also seen (in the present study) that general imbalance in groups can occur. While it is difficult to solicit responses from specific groups when performing an online survey, future research may attempt to better balance the demographic groups

from which the responses come.

Baker, Eddington, and Nay (2009) found that the amount of experience listeners have with a specific language variety influences their ability to identify it and its features. It stands to reason that it could also influence their attitudes toward the variety. In the present study, participants were not asked how much experience they had with Utah English: this was in an effort to avoid priming participants who had previously formed assumptions about Utah English. However, this admittedly does allow for a confounding variable in the data; listeners' level of experience with Utah English could be influencing their responses. Future research could find a way to gauge level of experience without overtly priming listeners, ideally eliminating that confounding variable while still maintaining the integrity of the rest of the data.

Additionally, the scope of the current study is relatively large, and there are many features being examined. This necessitated that each aspect not be looked at in as much detail as it could be. Future research, by focusing more narrowly on particular features, could garner more specific and detailed information about the stigmatization of that particular feature.

Another possibility for future studies would be to employ a greater number of speakers to make the initial recordings, thus facilitating better results. Although care was taken to ensure that the individual voice differences didn't overly affect responses, the fact that there were twelve speakers (in six pairs) makes it plausible that this did, in fact, happen. By increasing the number of speakers and varying which recordings participants hear, it becomes possible to control for confounding variables, such as these. However, having a much higher number of speakers becomes somewhat infeasible when undertaking a study of this scope; thus, it is recommended that future studies both increase the number of recorded speakers and decrease the features being studied (even down to a single feature). This will allow not only for a higher degree of control over confounding variables, but also for a deeper level of analysis of each of the individual features studied.

Simon and Murray (1999) found that they were able to enrich their study of language varieties by employing multiple research methods in the same study. In addition to other methodologies, they spoke candidly with their informants about their perspectives and attitudes about dialect variations. While introspection is not typically a reliable source of data for linguistic analysis, such information in addition to raw numbers and statistical data could prove useful in elucidating meaning behind some of the results seen. Future research may employ multiple methods, such as these, in order to provide a more comprehensive picture of the language attitude landscape.

Further research could also clarify the issue of what social groups are being associated with the speech features in question, as discussed previously. A survey similar to the current study could be conducted, but with the addition of questions asking the participants about what type of people they believed to use the features that they heard. This would give insight into what, if any, social connections participants assume exist while making their judgments. Simply asking the participants what kind of people, they think, typically talk the way they heard in the recordings could potentially provide some very illuminating data on why the participants are reacting in the ways that they are.

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Appendix A: Text of Surveys

-Text of Question

Please listen to the following recordings. The text is the same for both speakers, but different people are reading in each case. When you are done listening, please answer the following survey questions about both of the speakers.

[TEXT OF RECORDING]

Please answer the following questions about the two speakers you listened to. You can replay the recording as many times as you need.

-Text of Responses:

Which speaker, do you think, got better grades in high school?
- Speaker 1
- Speaker 2

Which speaker, do you think, would be more friendly when you first met them?
- Speaker 1
- Speaker 2

Which speaker, do you think, would be more likely to get hired for a job, based on a job interview?
- Speaker 1
- Speaker 2

Which speaker, do you think, has a larger group of friends?
- Speaker 1
- Speaker 2

Appendix B: Text of Recordings

Note on recordings: the features exhibited in each text are marked as follows:
1. Oral release.
2. Fill/feel merger.
3. Epenthetic /t/.
4. Cord/card merger.
5. Pronounced /l/.
6. "Measure" as /meɪʒɹɪ/.

The features were not marked in the actual survey.

Survey 1 - Multiple Features Per Recording

1. "I tried telling Mar[1]tin it really wasn't a good time, but it seems he didn't have any qua[5]lms about waking me up in the middle of the night. I think he gets some kind of perverse pl[6]easure out of bugging me at all hours. You'd have to s[2]ail around the world to get away from that guy."

2. "I would have written to tell you about it sooner, but I didn't feel like it was that urgent. It never f[2]ails to surprise me that uninf[4]ormed decisions like that so common."

3. "Sorry Nel[3]son, I didn't mean to b[2]ail on you last night, but that party was going at a sn[2]ail's pace. It was r[2]eally boring and un[4]organized. Plus, I had to get all the way back up to Lay[1]ton that night."

4. "My sister Chel[3]sea and I used to live near the old plant where they manufactured st[2]eel. We decided to [4]organize a garage sale. We sold a moun[1]tain of old stuff, but we had to take m[6]easures to make sure no one tried to st[2]eal anything."

5. "Nel[3]son doesn't f[2]eel well, but at least he's ca[5]lm. The doctor said to m[6]easure his medicine carefully. Maybe give him some kind of ba[5]lm or ointment. "

6. "It was some kind of foun[1]tain in Central Park, in New York. Col[1]ton Han[3]sen said all the coins at the bottom looked like tr[6]easure."

Survey 2 - One Feature Per Recording

1. "I was walking around in New Y[4]ork, and I have to say, they really could have [4]organized that place better. I walked around one c[4]orner and realized I was on the edge of Central Park. It looked like they had [4]organized some kind of protest; there were people f[4]ormed into a circle around the entrance. I never figured out what it was about, because I left right then. Maybe I'll be uninf[4]ormed forever, but it didn't seem like I'd have gotten a very w[4]arm reception there that day." (Cord/Card Merger)

2. "Surrounded here by the ocean breeze, the sun, and the pa[5]lm trees, how can you not feel ca[5]lmed? We've been planning this vacation for months, but now I wonder if it was even worth the effort. I've been so stressed that being here is like a ba[5]lm for my soul." (Pronounced /l/)

3. "There was that guy, Mar[1]tin, from my La[1]tin class sitting outside by the foun[1]tain. We talked for a

while and I found out he was from Bri[1]tain, which surprised me. I talked to him about that for a while; he told me his parents had wri[1]tten to him just the other day to tell him that they had adopted a new ki[1]tten." (Oral Release of Glottal Stop)

4. "He thought about buying the value m[2]eal, but in the long run it r[2]eally wasn't that great of a d[2]eal, especially, since he didn't f[2]eel all that hungry anyway. The guy at the register kept trying to make the s[2]ale, though. It was like he was afraid that if he f[2]ailed to close the d[2]eal, he'd get fired." (Fill/Feel Near Merger)

5. "We had the tr[6]easure map, but before we could go dig it up we had to m[6]easure the distance from where we were to the next spot. Alan wasn't helping, though. He just sat there and second-guessed all of us. It's like he got some weird kind of pl[6]easure from being unhelpful." (Measure as /meɪʒɹ/)

6. "Cory Han[3]sen and I were going to visit my sister Chel[3]sea this weekend.Unfortunately, Cory's brother Nel[3]son suddenly got sick and we decided we shouldn't go, or else he might get worse. Chel[3]sea was pretty disappointed; it was better that we didn't come, but it took me a while to get my point across." (Epenthetic /t/)

Appendix C: Survey Layout and Sample Page

BYU

BRIGHAM YOUNG

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Please listen to the following recordings. The text is the same for both groups of people, but different people are reading in each case. When you are done listening, please answer the following survey questions about both of the groups.

Text: "I was walking around in New York, and I have to say, they really could have organized that place better. I walked around one corner and realized I was on the edge of Central Park. It looked like they had organized some kind of protest; there were people formed into a circle around the entrance. I never figured out what it was about, because I left right then. Maybe I'll be uninformed forever, but it didn't seem like I'd have gotten a very warm reception there that day."

▶ | 00:00 |⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛ 00:00 | ◀ ·····||

Please answer the following questions about the two speakers you listened to. You can replay the recording as many times as you need.

Which speaker, do you think, got better grades in high school?

⚪ Speaker 1

⚪ Speaker 2

Which speaker, do you think, would be more friendly to you when you first met them?

⚪ Speaker 1

⚪ Speaker 2

Which speaker, do you think, would be more likely to get hired for a job based on a job interview?

⚪ Speaker 1

⚪ Speaker 2

Which speaker, do you think, has a larger group of friends?

⚪ Speaker 1

⚪ Speaker 2

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Appendix D: A Few Notes on Data Interpretation

In regard to some of the variables seen: the location variable was re-coded in analysis, such thatit consisted of participants from Utah, participants from other Western states, and participants from other locations. This variable was called "ThreeLocations" to differentiate it from the original location variable in the data. It had originally included many other locations, but these groups had very few participants in them, and thus they were recombined into a single group.

The age group variable was coded such that age group 2 corresponded to participants ages 18–29, age group 3 corresponded to participants in their 30s, age group 4 corresponded to participants in their 40s, and age group 5 corresponded to participants age 50 or older.