

Perceptual Dialectology in Ohio

Amber Torelli

Advisor: Kathryn Campbell-Kibler

Introduction

The Midwest of the United States is an interesting area for dialectologists to study because while some claim it has its own Midland dialect (Labov et al. 2006), others say it is only an area of transition from the North to the South (Davis and Houck 1992, 1995). One way to study this area is through folk linguistics. Benson (2003) and Preston (1999) discuss the importance of using folk linguistics to help learn about these dialect areas, especially in the Midland where the dialect boundaries are not clearly defined. While there may be concern as to whether or not non-linguists are up to this task, recent dialectologist studies say people can make dialectal decisions in smaller geographic regions (Benson 2005, Bucholtz et al. 2008, Campbell-Kibler 2012), but are they also able to articulate their perceptions of the language features that differentiate these dialect regions? Through the use of dialectology maps and a mimicry task, this current study investigates people's perceptions of dialects in Ohio, mainly where they think different dialects are and what language features are associated with these dialects, along with whether they are able to produce features. This study shows that people do have perceptions about dialects that are more or less accurate, although not complete. It is understandably easier for people to discuss where they believe dialects to be than to produce examples of these dialects.

Background Literature

The Midland has been garnering much interest among dialectologists recently, particularly the state of Ohio (Benson 2005). Not only is Ohio considered a transition state between the North and the South of the United States by some (Flangian 2000), it is also linguistically diverse due to the multiple migration patterns early Americans took as they settled the country (Carver 1987). In the first half of the nineteenth century, the majority of the people who settled in northeastern Ohio were originally from the New England states, those who settled in central Ohio came from the Mid-Atlantic states, and those who settled in southern Ohio were mainly from Virginia, West Virginia, and other southern states (Brownocker 1906, Carver 1987). These horizontal patterns mirror the three dialectal regions into which some experts divide the state. Labov et al. (2006) claims Ohio is host to the Inland North in the northeastern corner of the state, although the area south of Cleveland, including Canton and Akron, is considered a transitional area between the North and Midland dialects, the Midland in the center strip of the state, and the Southern in the Appalachian and Southern tip of the state, as shown in Figure 1.

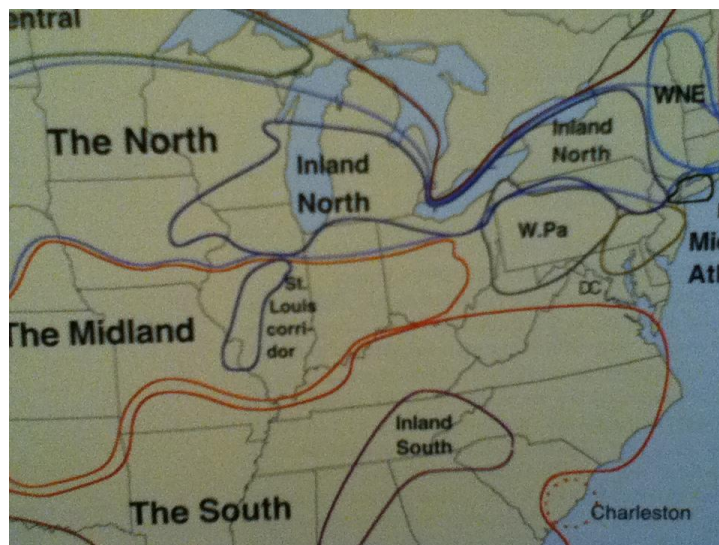


Figure 1: Map showing the dialect divisions of the Midwest according to Labov et al. (2006) from ANAE pg. 148

However, not everyone agrees with this analysis and instead debates whether the Midland can be considered a true dialect. The Midland is commonly thought by non-linguists to be non-accented, or standard American off of which other dialects sprout. This belief may be due to the fact that the Midland, as Labov et al. (2006) describes it, is an “undefined territory” that is characterized by a lack of distinct chain shifts such as those that are found in the North and South, yet they still describe the Midland as being an individual dialect. Flanigan (2000), however, poses the question as to whether the Midland is just a mix between the North and the South or if its dialect is something distinct. Davis and Houck (1992), as well as Carver (1987) disagree with the idea that the Midwest has an individual dialect and claim instead that it is a transition area, with more Southern dialect features emerging the farther south one travels.

Benson (2003) proposes that folk linguistics can reveal more than people’s perceptions of dialects; Preston (1999) discusses the importance of folk belief in any scientific investigation as well, especially in perceptual dialectology. It can help refine what and where the boundaries actually are. Recent dialectology studies (Benson 2005, Bucholtz et al. 2008, Campbell-Kibler 2011) have found that people are able to identify and discuss dialects in smaller geographical regions of the United States, suggesting that a smaller region such as Ohio would not be a difficult region for people to judge dialectally. So it would be important to investigate if people think there are different dialects in Ohio – especially if they believe the Midland is a separate dialect – and if so, where these dialects take place. To create a more complete understanding of Ohio dialects, it would also be important to find out which sounds, if any, people associate most with each dialect.

The pronunciation of vowels, more so than consonants, is a substantial part of a dialect's identity (Fox and Jacewicz 2012). The Inland North is defined by the Northern dialect and the South by the Southern Vowel Shift (Labov, et al 2006). Vowel shifting, or chain shifting, occurs when a particular vowel moves within the vowel quadrilateral, causing other vowels to move as well. These other vowels may be pushed out of the way by the first vowel or they may fill in the void left by the first vowel. Both the Northern Cities Shift in the Inland North and the Southern Vowel Shift in the South have distinct patterns of vowel movements.

One of the first vowels to move in the Northern dialect is /æ/ (Labov et al. 2006, Jacewicz and Fox, in press 2013), which could be why this is the most famous feature of this dialect. The /æ/ is raised and fronted, followed by a fronting of /ɔ/, a lowering of /ɑ/, a lowering and backing of /ɛ/, a backing of /ʌ/, and a backing and centralizing of /ɪ/. Overall, the vowels tend to move in a clockwise motion.

In the Southern Vowel Shift, the first vowel to change is the diphthong /aɪ/, which becomes the monophthong /a/ (Labov et al. 2006, Jacewicz and Fox, in press 2013). This change is followed by a lowering and centralizing of /e/, a fronting and raising of /ɛ/, a lowering of /i/, and a fronting and raising of /ɪ/. In addition to different vowel pronunciations, Southern speech is usually slower or has longer vowel duration than Northern speech (Salmons, et al. 2007). In another study, Jacewicz et al. (2007) also investigated vowel space size differences between these two dialects and found that while the shapes differed due to a farther backed /u/ in the Northern dialect, the overall area of the vowel spaces remained similar when considering normalized formant values.

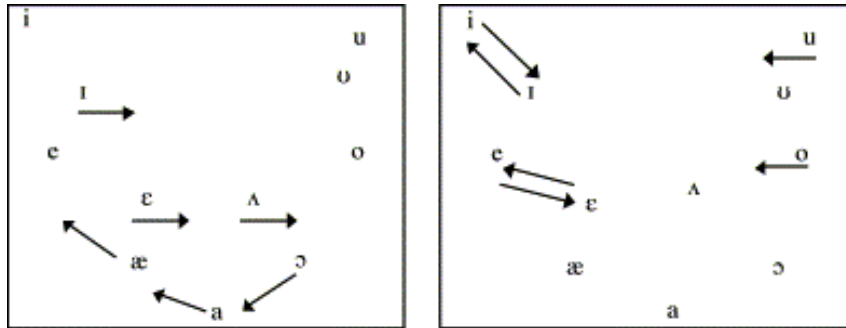


Figure 2: Graphical representation of the Northern Cities and Southern Vowel Shifts, from sciencedirect.com

In addition to these measurable differences between the dialects, there are also differences, across both people and dialects, in the perceptions people have of these dialects and of the people who speak these dialects. Attitudes about language can influence the perception one holds of the speaker's identity (Huttinger 2011, Allbritten 2011, Thorne 2005, Cargile and Giles 1997), so it is important to be aware of both what the language attitudes are and why they have evolved in that manner.

Methods

The data for this project were collected at COSI, an interactive science museum located in Columbus, Ohio. The Buckeye Language Network at the Ohio State University has a research lab in the Life Exhibit at COSI, which is where the experiments were conducted.

Thirty-five participants were recruited to voluntarily participate in the experiment. The majority of the participants were college-aged young adults who were native English speakers, although there were thirteen middle-aged adults and two teenagers. Most participants were from various cities in Ohio, including Cleveland, Columbus, Cincinnati, and suburbs of those cities. Twenty participants were male, and fifteen participants were

female. Participants ran through the experiment either individually or in groups of up to four, the most common group size being two.

Participants were given a map of Ohio along with an assortment of colored pencils and crayons. They were asked to color in the map using a different color for each area where they thought people spoke differently. They were then given a list of thirteen sentences chosen from the TIMIT database and were given a minute to familiarize themselves with the sentences. They were asked to read through the sentences as they would normally and then to choose a dialect from one of the places they had colored on their map and read through the sentences again while mimicking that dialect. Both readings were digitally recorded using a Marantz recorder. Afterwards I talked with each participant to ask about their language background and to learn what they were thinking during the mimicry task.

The recordings were segmented using the Penn State Online Forced Aligner, and the formant values of the vowels were measured using a Praat script. When analyzing the formant measurements I considered only the stressed vowels because when compared to unstressed vowels, their position is more peripheral or extreme in the vowel space. Stressed vowels are also produced with more emphasis and are likely to show more movement than unstressed vowels (Jacewicz and Fox, in press 2013), so if a speaker made a change to his speech during the mimicry task, he/she most likely did so during the stressed rather than unstressed vowels. This analysis focuses solely on the vowels because they are the leading feature that sets apart different varieties of American English (Fox and Jacewicz 2012).

To account for any error in segmenting or measuring, I first plotted every stressed vowel using the NORM online Vowel Normalization and Plotting Suite for each recording of each speaker. For any of the vowels that seemed to be outliers or in unusual positions, I checked the recording and textgrid in Praat to discern the reason. If the vowel borders were misplaced, I fixed them and then re-measured the formants by hand, picking the midpoint of the steady state. If the recording at that point was of low quality, usually due to the speaker laughing during the mimicry task, or if Praat had misplaced the formants so that I was unable to measure them by hand, I discarded the measurements for that particular vowel.

For the acoustic analysis, I removed data from any speaker who is not a native English speaker as their phonological maps may be different and it would not be proper to compare them. There were four participants who spoke a language other than English as their native language. The results from these speakers were still included in the map analysis, however, because they are able to have perceptions of dialects, especially since three of them now live in Ohio.

Maps

Traditional dialectology maps require participants to simply draw lines indicating where they believe dialectal boundaries to be. The method I used allows participants to color the map in a more detailed manner if they wish and to better articulate their perceptions of dialects within the state and where they believe contrasts are, as Figure 3 below shows. There are more details than just a few lines dividing the state.

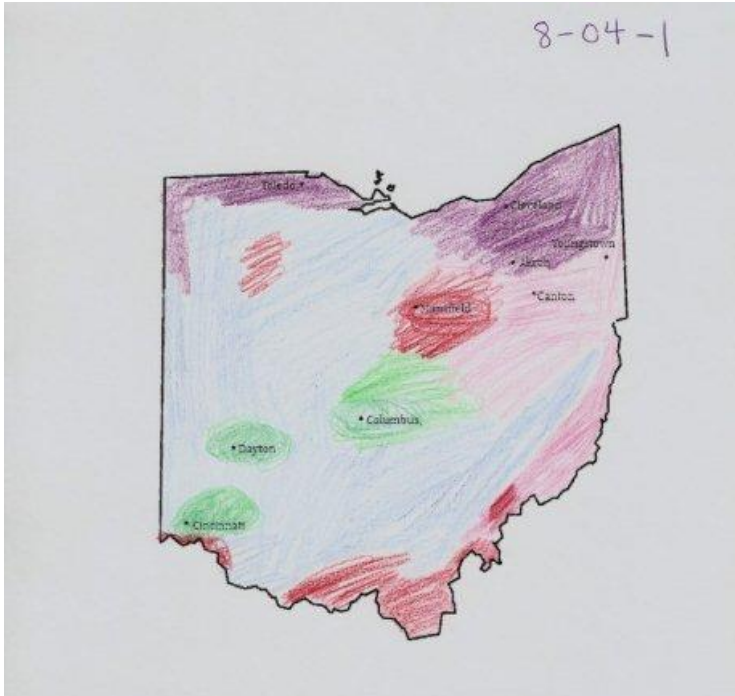


Figure 3: drawn by a 22 year old white-Asian female from Cincinnati (lived in Texas prior to Cincinnati). The circles drawn around the cities suggest that this participant perceives those dialects to be associated specifically with the cities.

While the above map is more detailed than most, everyone was able to color the maps and divide the state into dialect regions. The only instructions I gave the participants was to color in the maps using a different color for each area they thought people speak differently, so the participants had the freedom to interpret the directions in whatever way would best convey their perceptions. The group of participants included in this study utilized one of four methods when filling out their dialectology maps. The first method is drawing lines to section off parts of the state without coloring in any section; this occurred just once. The second is to color in the entire state with the same color to emphasize the belief that everyone speaks the same; this as well occurred just once. The third method is to color in specific places or cities while leaving the rest of the map blank; this occurred six times. The fourth method is to color in the entire map using different colors; this occurred twenty-seven times and was by far the most common.

Because I asked people to color in the areas of the map where they thought people spoke differently, I would expect that the colored areas represent what the participants perceive to be accented speech and the blank areas represent standard or non-accented speech for those participants who did not color the entire map. As mentioned above, this scenario occurred only six out of thirty-five times, while the other twenty-nine participants colored in the entire map. This could be an indication that people are starting to believe that all areas have some form of accented speech, or this could be a result of the way the map task was interpreted. Perhaps these participants thought they were supposed to color in the entire map. Perhaps they still have a notion that some areas have unaccented speech but they colored it in to further emphasize that it is different from the surrounding accented areas.



Figure 4: drawn by an 18 year old white male from Mason, OH (near Cincinnati)

In the above map, the Cleveland and Cincinnati areas are clearly marked as being separate because the lines separating off those areas are drawn with the same color as

those areas. The green area could represent either whatever is left over or it could represent a third dialect area. It is more difficult to conclude the latter interpretation with maps that leave parts blank. It would have been helpful to ask the participants to describe each section they colored after completing the map task.

However, the act of not coloring in an area on the map may not be a comment on the speech in that area but instead a lack of a comment. It is possible that the participants either did not know how to evaluate these areas, especially those with no cities marking them, and left it blank for that reason, or these areas were not linguistically meaningful to them. It is, however, interesting to note the different ways people interpreted the map task and the fact that most people felt competent enough in their perceptions of language to divide and color the entire state.

The majority of participants did divide the state into three or more sections; only one participant colored the full state one color to show that he believed everyone spoke more or less in the same manner. The graph in Figure 5 shows how many participants carved the state into how many sections.

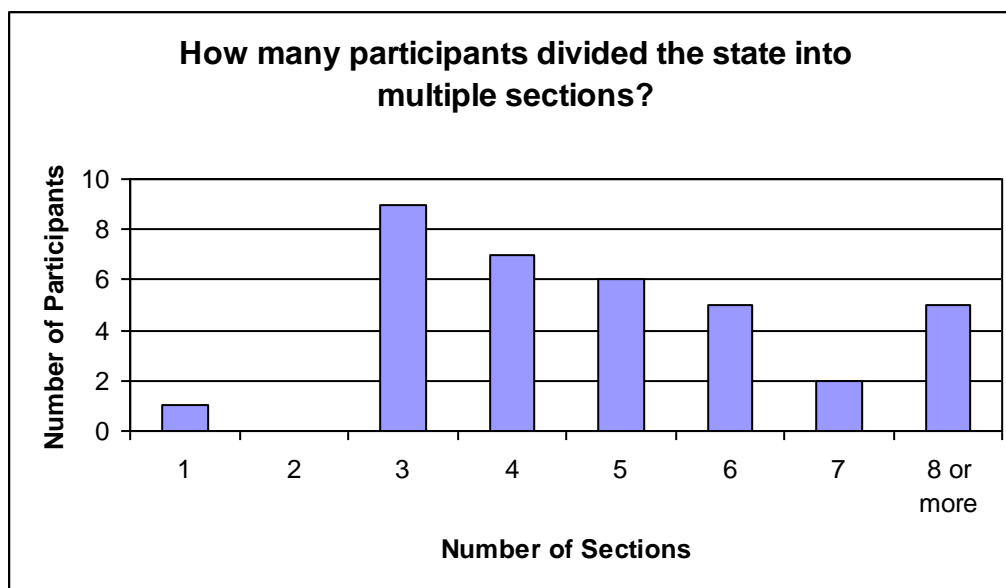


Figure 5 shows that the majority of participants believe there to be multiple dialect areas in Ohio.

The majority of participants (27 out of 35) divided the state into three to six sections, which shows that people recognize there are different ways of speaking, even within the state of Ohio.

When analyzing the maps, I first chose five reference points based on the patterns most of the maps seemed to be showcasing. These include Toledo or Northwest Ohio, Cleveland or Northeast Ohio, Columbus or central Ohio, Cincinnati or Southwest Ohio, and Appalachia or Southeast Ohio. I counted the number of times these points were sectioned off and separate from the other reference points, as well as the number of times they were colored to be in the same area as another reference point. If the same color was used for two different areas (see Figure 1 again: 8-4-1), I counted that as separate areas instead of being the same dialect in different places.

Northern Ohio

Cleveland is separated into its own section more often than any of the other reference points. While Toledo was separated from the rest of the reference points 21 times, or 60% of the time, Cleveland was separated from the rest of the reference points 26 times, or 74% of the time. Six of the nine remaining maps included Cleveland grouped in the same section with only Toledo, showing there is a strong perception of linguistic difference in the North of Ohio, if not especially the Northeast. The Northeast in particular seems to be linguistically meaningful to the majority of the participants, and the Cleveland dialect, described as being en route to enregisterment by Campbell-Kibler (2012), is becoming well-recognized as a linguistic object. It is worth noting, however, that Cleveland is in the corner of the state, making it geographically harder to include

with other reference points. This location, though, could also be helping the area remain separate and be providing to the strong perception of a dialect there.

Only six out of all of the participants sectioned off Cleveland more tightly, meaning that Cleveland was put into its own section that was not a part of the rest of the Northeast and that did not include any of the other Northeastern cities: Youngstown, Akron, or Canton, as seen in the map in Figure 6.

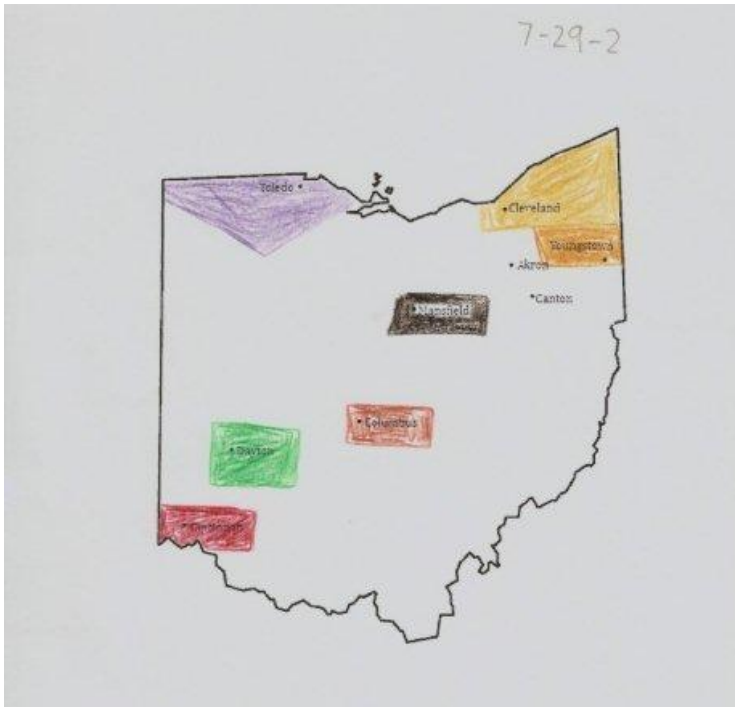


Figure 6: drawn by a 21 year old biracial male from Columbus (lived in Florida for 18 years prior to Columbus)

Campbell-Kibler and Bauer (ms) noticed that people from Cleveland tended to section Cleveland off in this manner more so than non-Clevelanders, due to a pride in a linguistic identity or the fact that being from the area, they are more prone to recognizing subtle differences in speech. I had only three participants who were natives of Cleveland; more participants, especially from Cleveland, would be needed in order to determine if Clevelanders do or do not think of themselves as linguistically different from the rest of the Northeast. Regardless, this pattern is not something I noticed in my data; only one of

the participants who sectioned Cleveland off as being separate from the rest of the Northeast was from Cleveland. The five other participants who tightly sectioned off Cleveland were from elsewhere in Ohio, mostly Columbus. The other participants from Cleveland were from elsewhere in Ohio, mostly Columbus. The other participants from Cleveland sectioned off the Northwest as being separate from the rest of the state, but paid no more attention to Cleveland than the other Northeastern cities, as is shown in Figure 7.



Figure 7: drawn by a 19 year old white male from Willoughby, OH (near Cleveland)

Central Ohio

Columbus was separated into its own section nineteen times, or 54% of the time. In the other 46% of the maps, Columbus was included with each reference point except for Cleveland at least once. Columbus was placed on a border three times, as in the following example.



Figure 8: drawn by an 18 year old white male from Howan Heights (near Cleveland)

This is something that rarely occurred with the other reference points (Cincinnati was placed on a border twice). The number of times this city was placed on a border is minimal, but I think it is important to note that these participants believed that it can happen and that Columbus, being in the center of the state, could be a part of any dialect in the state as opposed to having its own. None of the participants who placed Columbus on a border were from Columbus, which is expected since people from an area tend to section off their city more often than those not from that area because the citizens of that city would feel pride in their linguistic identity (Campbell-Kibler and Bauer, ms) and would more easily recognize a slight dialect than non-citizens would. Ten participants drew an obvious circle around Columbus, but only five of these people were Columbus-natives or had lived in Columbus for several years. The rest of the seven participants who were from Columbus or had lived in Columbus for several years either included

Columbus with another reference point or colored central Ohio separately from the other reference points without paying any special attention to the city of Columbus.

Columbus was included with other reference points with more variability than Cleveland. As mentioned earlier, Columbus was included with every other reference point besides the Cleveland or Northeast reference point while Cleveland was only included with Toledo when it was not in its own section (except for one map where everything was colored the same and two maps where Cleveland was left blank). This suggests that there is a stronger perception of a dialect in Cleveland than there is in Columbus; however Columbus is in the center of the state so geographically there is a bigger possibility for it to be included with other reference points. But again, because it is in the center of the state, there is a greater chance that it is linguistically diverse and affected by the surrounding dialects more so than Cleveland is (which is in the corner of the state and bordered by Lake Erie).

Southern Ohio

Cincinnati was separated into its own section 23 times, or 66% of the time. Appalachia in Southeastern Ohio was separated into its own section 20 times, or 57% of the time. Southeastern Ohio and Cincinnati were included in the same section only five times, which suggests that Southern Ohio is not seen as continuous linguistically but rather that speech in the Southeast and the speech in the Southwest are perceived differently.

It is important to note that the map I used did not have a city written on it in the Southeastern Appalachia area, while the other four reference points did. A written city

draws a person's attention to the area and automatically separates the city, and perhaps its surrounding area, from the rest of the state. This attention to cities is evidenced by the participants who colored the maps based on the cities. In the following map in Figure 9, the participant colored in only the cities.



Figure 9: drawn by a 44 year old white female from North Olmstead, OH (lived 10 years in Cleveland too)

The fact that Southeastern Ohio was separated into its own section about as many times as Cincinnati, which does have a city causing the participants to pay special attention to that area, suggests that there is a strong perception of the Southeastern area being linguistically different from the rest of Southern Ohio.

Benson (2005) observed that people's perceptions of dialects varied depending on where in Ohio they were from, mainly if they originated from Southern Ohio or not. People native to Central or Northwestern Ohio more often divided the state into several dialect regions while those from Southern Ohio tended to divide the state into fewer sections and would draw the line dividing the Northern and Southern parts of the state

above Columbus in an attempt to associate themselves with what they considered to be the mainstream dialect.

Southern Ohioans trying to differentiate themselves from the deep South is not a surprising concept. As Huttinger (2011) explains, the Southern dialect has been stigmatized since the mid-1800s when there was a definite boundary between the two halves of the country. The North viewed the South as old-fashioned due to its view on slavery and then later as the enemy during the Civil War. This explicit distinction between the North and the South created an *us-them* mentality, making it easier for people to notice language differences. This explanation can also clarify why the Cleveland dialect, which is part of the Northern dialect, is only recently beginning the enregisterment process (Campbell-Kibler 2011). It is not as well-known or established as the Southern dialect and also does not take place in an area that has been historically separated from the rest of the state or country.

My data supports Benson's (2005) claim, as five out of the seven participants who drew a North-South line on their maps above Columbus were from the South of the United States. Three participants drew the North-South line above Columbus and also divided the South into two or three sections, separating the Southeast and the Southwest, as seen in Figure 10.



Figure 10: drawn by an 18 year old white male from Howan Heights, OH (near Cleveland)

These participants were from Cleveland, Florida, and North Carolina. Four participants drew the North-South line above Columbus, or on Columbus in one case, and did not further divide the South, as seen below. All of these participants were from Northern Kentucky, Cincinnati, or Texas.

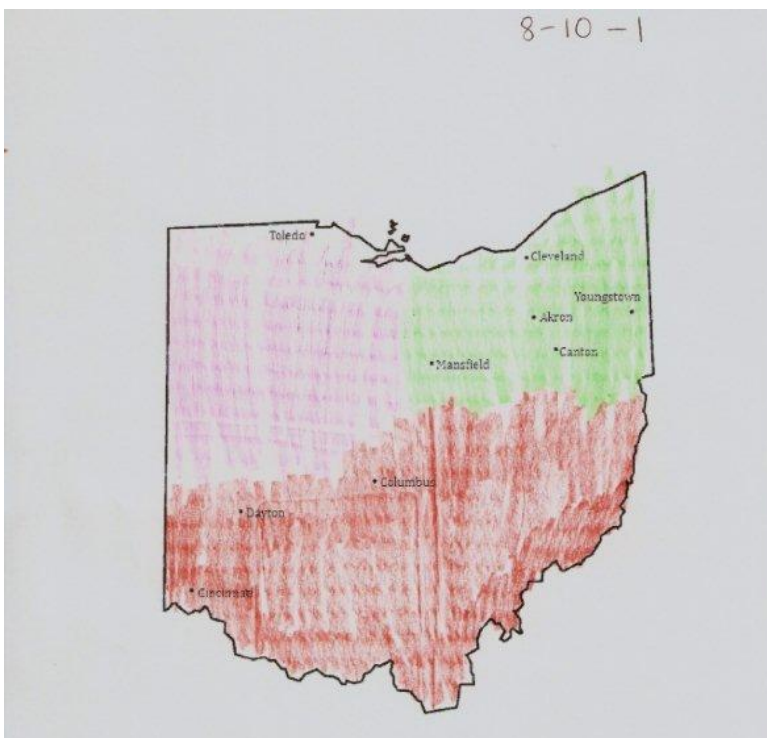


Figure 11: drawn by an 18 year old white female from Northern Kentucky

The other participants from Southwest or Southeast Ohio did not draw the North-South line above Columbus but instead sectioned off their hometown area, which shows that not everyone from the South tried to align themselves with more accepted dialects. However, the majority of participants who did draw the North-South line above Columbus were from the South, which suggests that they did so because of linguistic insecurity about their dialect.

Acoustic Analysis

While most participants were able to recognize different dialects, it was harder for them to replicate the dialects. Three participants chose not to complete the mimicry part of the experiment, their reasoning being that they were not familiar enough with Ohio to feel comfortable mimicking a dialect.

For the analysis, I included NE Ohio with the Cleveland dialects, and the Appalachian with the Southern dialects. The graph in Figure 11 shows how many people chose which dialects to mimic, according to their descriptions of what dialect they chose.

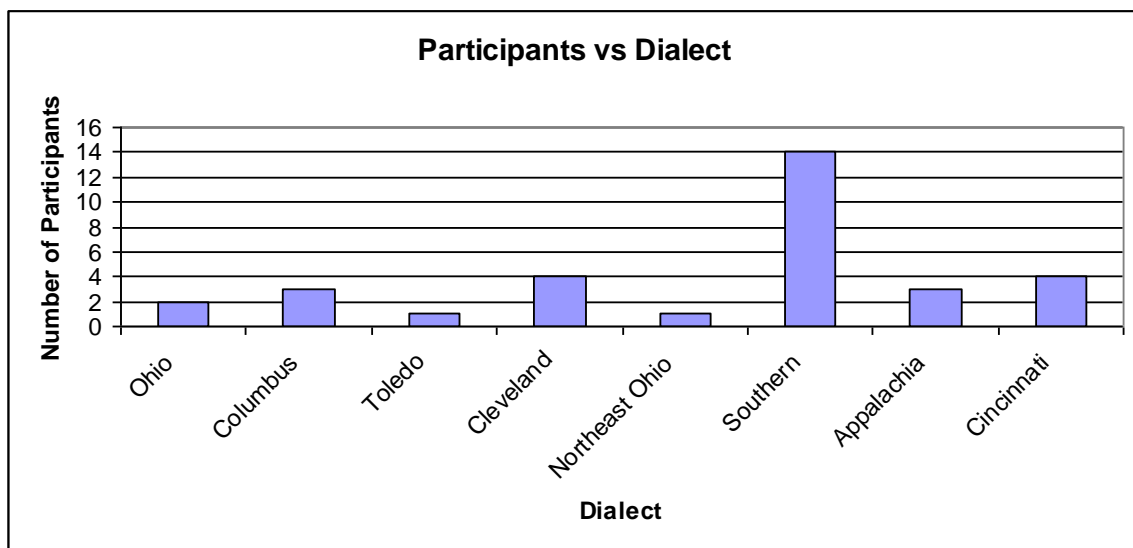


Figure 12: graph of participants vs dialect based on the names the participants used to identify each dialect

The fact that the majority of the participants chose to imitate a Southern dialect speaks to the degree that the Southern dialect is enregistered compared to the other dialects in Ohio. People tend to choose dialects that they feel comfortable and competent imitating, and the Southern dialect is more well-known and widespread than the other dialects within Ohio.

Some participants had a difficult time choosing a dialect to mimic while others were immediately ready to complete this section of the experiment, but almost all of the participants had at least something to say about the dialect they chose. The Columbus dialect was described as being Midwestern, relaxed, and proper. The Southern dialect was described as “rednecks”, a “farmer dialect”, and as having a twang. It was also described as both being slower and more relaxed and as being faster and not punctuated properly. One participant mentioned a physical difference and described the way the mouth is held: the chin is out, the tongue is different and touches the back teeth more often, and the cheek pockets fill with saliva. Several participants described the Southern dialect by saying that certain sounds or words are drawn out and emphasized more than others. Examples of these different sounds include different e’s and u’s (in the participant’s words), yer for your, Ah’d for I’d, and an emphasized r. The main descriptors of the Cleveland dialect depicted it as being either monotone, lacking in personality, and spoken carefully – one participant said it sounded like “nothing” – or as being nasally with a special attention on the vowels. These descriptions show that people have perceptions of dialects whether or not they are linguistically accurate. People are able to discuss and describe dialects, such as those who called the Southern dialect either slower and faster. Of course the same dialect cannot simultaneously have opposite

features, and studies have shown the Southern dialect to have a slower speech rate (Salmons et al. 2007, Clopper et al. 2005). However, the participant who described the Southern dialect as being faster, although not correct, is still aware that various dialects exist that are differentiated by features such as speech rate or vowel production.

Participants were asked to discuss the mimicry task after it was completed, and almost all of them mentioned a person they knew or had encountered at some point who spoke in the dialect they chose to mimic. Only one participant thought of the movies rather than thinking of a time he/she heard the dialect from someone directly. Six participants thought of a specific person they were trying to imitate while the rest of the participants said they either knew people or heard the dialect around. Those who thought of specific people thought of a family member, a friend, a neighbor, or a pastor, which are all people that the participants would have heard speak frequently. Those who said they just heard the dialect around mostly said they lived in the area where the dialect exists and heard it there. All this shows how people cultivate their impressions of dialects; as people move, travel, or attend school away from home, they come into contact with more people who speak differently. People learn what dialects sound like and where they thrive from interactions with people who have those dialects.

Cartei et al. (2012) found in a gender mimicry task that adults can identify and reproduce some acoustic cues associated with the expression of gender, mainly the raising and lowering of pitch. However, controlling the cues associated with dialects is perhaps more complex than controlling those associated with gender, perhaps because while there are two traditional genders that people generally come into contact with every day, there are multiple dialects that not everyone hears daily. Whether participants

understand the acoustic cues related to the Southern dialect, they were not able to consistently reproduce them. I focused on only the Southern dialect during the acoustic analysis because the majority of participants chose it to mimic. When analyzing the vowel formants, I used the online NORM: Vowel Normalization Suite 1.1 to normalize the formant values and then to calculate the average formant value for each vowel. The vowel plot in Figure 13 shows the vowel means for the Lobanov normalized formant values.

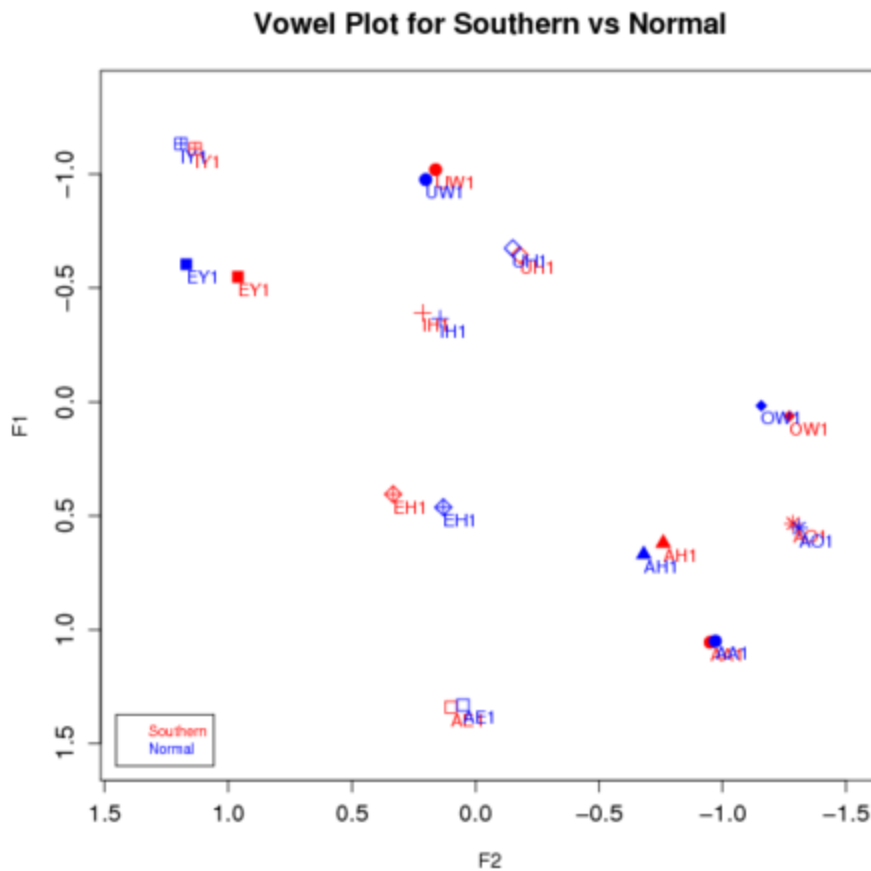


Figure 13: means of Lobanov normalized formant means for each vowel for all speakers who imitated the Southern dialect

As evidenced in the vowel plot, for most vowels there are not major changes in the way the vowel is pronounced from the speaker's normal voice to the speaker's imitated Southern dialect. Indeed, a general linear model does not show a significant difference

between the speaker's normal voice and the speaker's imitated Southern dialect for F1 and for F2 ($p > 0.05$) for all vowels except for /e/ and /ɛ/, represented by EY and EH respectively in the above vowel plot. For /e/'s F2 values, the general linear model shows a significant difference between the speaker's normal voice and the speaker's imitated Southern dialect ($F=11.5$, $p < 0.01$). For /ɛ/'s F2 values, the general linear model shows a significant difference between the speaker's normal voice and the speaker's imitated Southern dialect ($F=20.62$, $p < 0.01$).

Participants are significantly centralizing /e/ and fronting /ɛ/, both of which are characteristics of the Southern Vowel Shift. These changes could be what participants associate most with the Southern dialect. Or perhaps these are the features that are easiest for these participants to change/imitate. At least this shows that people are doing *something* different when imitating the Southern dialect and that they are *collectively* doing this something different. The vowels /i/ and /ɪ/, represented as IY and IH on the vowel plot above, seem to show a slight trend in the same direction as /e/ and /ɛ/, but this change is not statistically significant. Because these changes, although small in number, are accurate, it suggests that the perceptions people hold on dialects, the Southern Vowel Shift in particular, are accurate if not complete.

A notable feature of the Southern Vowel Shift is the monophthongization of the diphthong /aɪ/ to /a/. This change, however, was unexpectedly not exhibited in the data. When listening to the recordings, it seems like almost half of the speakers did monophthongize this vowel on a single word "mine" in the sentence "Why buy oil when you always use mine?" The two spectrograms below show this manifestation of monophthongization; the changing formant values in Figure 14 represent a diphthong in a

participant's normal voice while the flat formant values in Figure 15 represent a monophthong in the same participant's imitated Southern dialect.

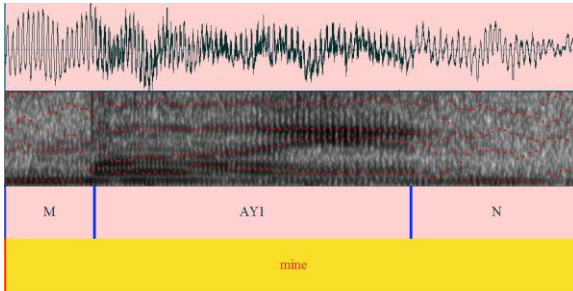


Figure 14: spectrogram image from Praat of "mine" showing that AY is produced as a diphthong in the speaker's normal voice

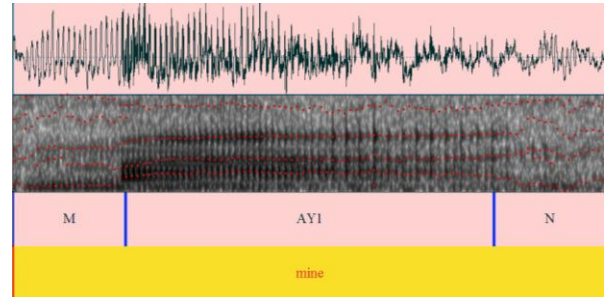


Figure 15: spectrogram image from Praat of "mine" showing AY is produced as a monophthong in the speaker's imitated Southern dialect

To check if this was a significant change across all participants, I used the online NORM: Vowel Normalization Suite 1.1 to normalize the formant values at the 20% and 80% points in the vowel. I calculated the F1 and F2 differences between these two points for each vowel in order to compare if the differences were greater for the speaker's normal speech than for the speaker's imitated speech. A general linear model of these differences, however, did not give significant results for either F1 or F2. A general linear model of these differences solely for the vowel in the word "mine" did not give significant results either. There is not sufficient evidence to claim that most participants are monophthongizing /aɪ/ to /a/ as a method of portraying the Southern dialect.

In addition to potentially changing vowel positions when participants mimicked a dialect, I also investigated whether participants changed their speech rate by comparing vowel durations. Because the participants read the same list of sentences in their everyday voices and while mimicking an dialect, it would have been ideal to simply measure the length of time it took to complete each reading; however many participants

paused in between sentences to laugh, make comments, etc, so that approach would not give an accurate representation of speech rate. Instead I compared the vowel duration for each vowel of the participant's normal voice with the participant's mimicked dialect. While this is only one aspect of speech rate, it can indicate speech rate since vowels are the nuclei of most syllables. These duration measurements were also gathered by the same script that gathered the formant measurements.

Although Salmons, Jacewicz, and Fox (2007) and Jacewicz et al. (2009) found that North Carolina speakers had longer vowels than Wisconsin speakers had for all levels of vowel emphasis, I included only the stressed vowels in my analysis. Salmons, Jacewicz, and Fox (2007) also found that vowel duration depended on the vowel's environment; vowels were longer if a voiced consonant followed rather than a voiceless consonant. However they also stated that:

“Overall, then, the dialectal differences in vowel duration were well manifested across all vowels and did not disappear with the contextual variation such as immediate consonantal context of a vowel or variable stress and emphasis in a sentence. North Carolina vowels were always significantly longer than Wisconsin vowels and, except for /á/, significantly longer than Ohio vowels. However, although the latter tended to be longer than Wisconsin vowels, the difference between them was not significant.”

All speakers for each dialect read the same sentences, so the vowel lengths that were measured came from vowels had the same contexts (we're not comparing, for example, a Southern dialect with a context that would make the vowel longer anyway). Articulation rate usually refers to spontaneous speech, but Jacewicz et al. (2009) found that the

articulation rate of Northern speakers was higher than that of Southern speakers whether the speakers were reading or talking informally.

Clopper, et al. (2005) found a significant dialect-by-vowel interaction; not all Southern vowels were longer, only /ε/ and /ʌ/ were found to be significantly longer than Northern vowels. If the participants consciously perceived a difference in speech rate, I would expect those mimicking a Southern dialect to increase their vowel lengths significantly more than those mimicking a Cleveland dialect.

I did not consider the effect of gender on vowel duration as there was a mix of genders mimicking each dialect. Salmons, et al. (2007) found that gender did not affect vowel duration as much as dialect did. Except for their Wisconsin speakers, vowel duration for female speakers tended to be slightly longer and thus they called it a tendency rather than an effect.

I compared the duration of the stressed vowels from the participants' normal speech with those from the participants' imitated speech and found that the seventeen people who chose a Southern or Appalachian dialect to mimic slowed down significantly when they were mimicking the Southern dialect. A general linear model in Minitab shows a significant difference between the participants' normal voice and their Southern dialect ($F=24.49$, $p<0.01$). However, this does not tell us why the participants are slowing their speech rate. It is important to consider, when using this approach, that the participants may be slowing their speech rate while mimicking a dialect because it is not their natural way of speaking and they might use more time thinking about how they will pronounce the sounds. So if the vowel durations are longer for a mimicked Southern dialect compared to the everyday speech, it may not necessarily mean that the participant

actually perceives Southern speech to be slower and is actively decreasing his/her speech rate. To investigate whether the participants perceive the Southern dialect to be slower and are trying to manifest that in their imitation or if they are reading more carefully and slowly because they are speaking in an unfamiliar manner, I compared the change in vowel duration of those who imitated the Southern dialect and those who imitated the Cleveland dialect.

For the five participants who imitated a Cleveland or Northeast Ohio dialect, a general linear model in Minitab also shows a significant difference between the participants' normal voice and their Cleveland dialect ($F=19.42$, $p<0.01$). To examine whether the participants who chose to mimic the Southern dialect are slowing down more than those who chose the Cleveland dialect, I calculated for each vowel the difference between the participant's imitated voice and normal voice. The participants read the same list of sentences when speaking in their normal voice and when mimicking a dialect, so I was able to subtract the vowel duration of the participants' normal speech from the vowel duration of the participants' imitated speech in order to see how much the participants are slowing down when mimicking a dialect. Because sometimes the participants read a word twice or skipped over a word, there were some instances in which there was not an exact match of words in the Southern and imitated speech. For these instances, I did not include the extra words in this analysis. I compared how much the participants were slowing down for the Southern dialect to how much they were slowing down for the Cleveland dialect but a general linear model in Minitab did not show a significant difference ($F=3.38$, $p=0.066$). These statistics give no evidence that participants are slowing down their speech when mimicking a Southern dialect because

they perceive the Southern dialect to be slower or that a slower speech rate is the most prevalent aspect that people associate specifically with the Southern dialect.

Discussion

Most people are able to recognize and place different dialects, as everyone was able to draw detailed maps of Ohio with consistent trends emerging despite each individual map varying somewhat. The North and South are separated, the boundary usually being below Columbus, and the East and West are separated, marking off Cleveland from the Northwest and Cincinnati from the Southeast. With the exception of one participant who colored the entire state one color, everyone else divided the state into at least three sections, implying that people do perceive there to be multiple accents in Ohio. Participants had less consistent patterns in the mimicry task, however, the only significant ones being the fronting of /ɛ/ and the centralizing of /e/. While this change is accurate, it is unclear from this current study whether this change is the biggest identifying feature of the Southern dialect or if it is simply the easiest to produce. However, because /i/ and /ɪ/ begin to show a change consistent with the Southern dialect and because several participants did monophthongize /aɪ/ in certain words, it seems that the participants, while not everyone, do have accurate, if somewhat incomplete, perceptions of the Southern dialect. Indeed, Clopper and Pisoni (2004) found that people are able to recognize phonetic features and use them to classify speakers into different dialect regions with above chance accuracy. This suggests that instead of a lack of knowledge of the acoustic cues associated with the Southern dialect, it is more difficult for people to replicate the dialects. This difficulty could be due to various reasons, such

as not having the linguistic ability to do so, not wanting to sound stereotypically Southern, or simply being shy or uncertain. Bucholtz et al. (2008) discusses this “political correctness effect” where participants of her perceptual dialectology study of California used several strategies revealing their reluctance to freely talk about other people’s speech because they did not want to offend anyone. Further analysis of the Cleveland dialect would be helpful to determine if the acoustic changes of those that mimicked the Cleveland dialect are also inconsistent but starting in the right direction.

References

- Allbritten, Rachael M. 2011. *Sounding Southern: Phonetic Features and Dialect Perceptions*. Washington, D.C.: Georgetown University. PhD dissertation.
- Benson, Erica J. 2003. Folk Linguistic Perceptions and the Mapping of Dialect Boundaries. *American Speech* 78:3, 307-330.
- Benson, Erica J. 2005. Folk Perceptions of Dialects in Ohio. In Brian D. Joseph, Carol G. Preston, and Dennis R. Preston (eds.) *Language Diversity in Michigan and Ohio: Towards Two State Linguistic Profiles*, 35–60. Ann Arbor, Michigan: Caravan Books.
- Brownocker, J.A. 1906. *The Geography of Ohio*. Rand, McNally, and Company.
- Bucholtz, Mary; Bermudez, Nancy; Fung, Victor; Vargas, Rosalva; and Edwards, Lisa. The Normative North and the Stigmatized South: Ideology and Methodology in the Perceptual Dialectology of California. 2008. *Journal of English Linguistics* 36:1, 62-87.
- Campbell-Kibler, Kathryn. 2011. *Contestation and Enregisterment in Ohio's Imagined Dialects*. The Ohio State University.
- Cargile, Aaron Castelan and Giles, Howard. 1997. Understanding Language Attitudes: Exploring Listener Affect and Identity. *Language and Communication* 17:3, 195-217.
- Cartei, Cowles, and Reby. 2012. Spontaneous Voice Gender Imitation Abilities in Adult Speakers. *PLoS ONE* 7(2): e31353. doi:10.1371/journal.pone.0031353.
- Carver, Craig. 1987. *American Regional Dialects: A Word Geography*. The University of Michigan Press: Ann Arbor, MI.

- Clopper, Cynthia and Pisoni, David. 2004. Some Acoustic Cues for the Perceptual Categorization of American English Regional Dialects. *Journal of Phonetics* 32:111-140.
- Clopper, Pisoni, and de Jong. 2005. Acoustic Characteristics of the Vowel Systems of Six Regional Varieties of American English. *Journal of the Acoustical Society of America* 118: 1661–76.
- Davis, Lawrence and Houck, Charles. Is There a Midland Dialect Area? – Again. 1992. *American Speech* 67:1, 61-70.
- Davis, Lawrence and Houck, Charles. 1995. What Determines a Dialect Area? Evidence from the Linguistic Atlas of the Upper Midwest. *American Speech* 70:4, 371-386.
- Flanigan, Beverly Olson. 2000. Mapping the Ohio Valley, South Midland, Lower North, or Appalachians. *American Speech* 74:4, 344-347.
- Fox, Robert and Jacewicz, Ewa. 2011. Perceptual sensitivity to dialectal and generational variations in vowels. *Interspeech 2011* 2921-2924.
- Fox, Robert and Jacewicz, Ewa. (2012). Dialectal and generational variations in vowels in spontaneous speech. *Interspeech 2012: Proceedings of the 13th Annual Conference of the International Speech Communication Association*, Portland OR (Wed.06c.03, 4 pages).
- Hüttinger, Dorothea Evelyn. 2011. Attitudes Toward Standard and Non-standard Dialects in Linguistically Stigmatized and Linguistically Prestigious Regions in the United States and Germany. University of South Carolina. PhD dissertation.
- Jacewicz, Fox, and Salmons. 2007. Vowel space areas across dialects and

- gender. *Proceedings of the XVith International Congress of Phonetic Sciences*, J. Trouvain and W.J. Barry (eds.), pp. 1465-1468. Saarbrücken, Germany.
- Jacewicz, E., Fox, R., O'Neill, C., and Salmons, J. 2009. Articulation rate across dialect, age, and gender. *Language Variation and Change*. 21: 233-256.
- Jacewicz, Ewa and Fox, Robert. In press, 2013. Cross-Dialectal Differences in Dynamic Formant Patterns in American English Vowels. *Vowel Inherent Spectral Change*, ed. by Geoffrey S. Morrison and Peter Assmann. New York: Springer-Verlag, pp. 177-198.
- Labov, W., Ash, S., and Boberg, C. 2006. Atlas of North American English: Phonetics, Phonology, and Sound Change. Mouton de Gruyter, Berlin.
- Preston, Dennis, ed. 1999. Handbook of Perceptual Dialectology: Volume 1. John Benjamins Publishing Company: Philadelphia, PA.
- Salmons, J, Jacewicz, E. and Fox, R.A. 2007. Vowel duration in three American English dialects. *American Speech*, 82: 367-385.
- Thorne, Steve. 2005. Accent Pride and Prejudice: Are Speakers of Stigmatized Variants Really Less Loyal? *Journal of Quantitative Linguistics* 2:2-3, 151-166.