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The Effect of Dialect on Lexical Recall

by

Chandler Douglas

A thesis submitted to the faculty of The University of Mississippi in partial fulfillment of the requirements of the Sally McDonnell Barksdale Honors College.

Oxford

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2020

Chandler Douglas

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ABSTRACT

Investigating the performance of listeners as they attempt to recall words in both a familiar and unfamiliar dialect could likely lend some insight to the cognitive processes concerning speech perception. Specifically, the current study investigates whether speech spoken in an unfamiliar accent in a listener's language influences comprehension and, therefore, memory recall of content. To test this, a group of speakers of General American English and a group of speakers of Southern American English listened to two sets of words: one in General American and one in Southern American English. Participants were then asked to write down or type the maximum number of words that they could recall. The results determined that a greater percentage of participants better recalled words heard in General American. Yet the uniformly low recall percentages indicate that the role of dialect might not be as pronounced as initially hypothesized.

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CHAPTER 1 INTRODUCTION

The multifaceted nature of obtaining information via speech is studied through perceptual dialectology. Throughout discourse, moments occur when new phonological forms are introduced to an interlocutor and potentially inhibit the listeners' perception to a point at which the information conveyed might be disrupted or lost. Whether this occurs in a casual standpoint or in a more professional one (school or work), it proves beneficial to determine whether these losses in comprehension truly result from a lack of linguistic competence, or if listeners' perceptions of certain dialectal forms serve as a source of inhibition. Thus, a study using input data from participants will be used in an effort to explain the prevalence of this particular phenomenon.

American English

Dialects of American English can be divided regionally, socially, diachronically, or situationally. In phonology, the six regional dialects are in the South, West, Northeast, Midlands, North Central, and Inland North (see Map 1 below). This study concerns two of these regional dialects, the General American of the Midlands and Southern American English of the South, due to their phonological differences.

These two dialects remained contrastive due to the gradual, deliberate vowel shifts that have occurred throughout the history of English in certain. The General American dialect thus retains many features once considered to be the defaults. Meanwhile, the Southern American dialect saw its vowels shift and merge, explaining the similar sounds of words such as pen and pin or the monophthongization of words like the pronoun I (which shifted from the standard

diphthong /ai/ to /a/). As a result of this salient difference, word selections differing in terms of their monophthongs and diphthongs should be sufficiently plentiful. This could prove especially true in the case of a study wherein lists of pronunciation features are important in the continuum of what distinguishes standard dialects and varieties of vernacular dialects (Wolfram & Schilling-Estes, 2000, 194).

Map 1. General major dialect areas of the United States



Note that the stars denote the exact region in which the two speakers live.

Comprehension of speech

The initial step of speech comprehension, decoding, begins with utterances reaching the auditory system as acoustic sequences. This requires listeners to distinguish speech from any other

auditory inputs – a process that is made simple by the continuous nature of speech (Cutler & Clifton, 1999, 125). Phonemes hold the smallest units of meaning in their relatively small manifestations, and as such introduce phonological features that are commonly misinterpreted (so /k/ is more likely to be misheard as /g/ than, say, /d/ due to their point and manner of articulation in the mouth being the same). Thus, as the overall process reaches the word identification phase, mistakes might have already occurred.

Memory

Cognitive linguistics emphasizes either the grammatical units of language or its lexical-semantic units. It expands on the arbitrariness of the linguistic sign to provide the bases for principles explaining why there is no clear distinction between linguistic and encyclopedic knowledge (Filipović , 2010, 14). There are several key components to this psycholinguistic process that will be necessarily defined.

Memory processing involves all the processes used to acquire, retain, and later retrieve information; it involves the domains of encoding, storage, and retrieval. Working memory is the cognitive system with a limited capacity that can hold information temporarily. It performs the processing of short-term memory: that which processes information in a short period of time. Long-term memory, on the other hand, stores information for long periods of time, and can be retrieved consciously or unconsciously.

Central to this study is the concept of false memories, or cases where people remember events differently from how they actually occurred, or even entirely original events. Their deceptiveness lies in how detailed they are and how confidently they may be remembered.

Research questions

My study ponders the following questions invoked by literature in the field:

1. Does lack of exposure to a non-familiar dialect influence recall of words spoken in the unfamiliar dialect?
2. Does exposure to a familiar dialect influence recall of words spoken in the familiar dialect?
3. Do speakers of Southern American English recall more words than speakers of General American English after listening to a list of words read in Southern American English?
4. Do speakers of General American English recall more words after listening to a list of words read in General American English than after listening to a list of words read in Southern American English?

Here are the two principal questions that I investigate in my study:

RQ1: Are word recall accuracy percentages for words read in a General American dialect higher than those read in a Southern American dialect?

RQ2: Does exposure to a non-native dialect influence perception of words spoken in that dialect? That is, do speakers of a Southern American dialect perform more accurately in the word recall in a Southern American dialect than speakers of only General American?

Sequence of chapters

Using research to elaborate upon American English, speech comprehension, and memory, this thesis will examine the link between dialectal exposure and proficiency in recalling words spoken in them. This experiment will achieve this through exposing random participants to similar word lists in two contrastive dialects.

This thesis first contemplates further literature relevant to dialects and the related concepts of speech comprehension and memory, before posing a series of hypothetical questions, describing the employed methodology, listing the results, describing the results, and discussing their effectiveness in responding to the hypothetical questions.

Terms

Here are some common terms found in this thesis.

BIAS: unequal symmetry in word choice that reflects social-category conditions applied to a group or an individual.

COMPREHENSION: the act or capability of understanding something.

CONCRETE/ABSTRACT: denoting material objects (concrete) or ideas, qualities, or states (abstract).

DIALECT/VARIETY: a particular form of a language unique to a specific region or social group.

DIPHTHONG: a sound formed by the combination of two vowels in a single syllable, as in the word “loud.”

DISCOURSE: a connected series of utterances; a text or conversation.

GIST: the sense or essence of a speech or text.

ICONICITY: a relationship of similarity or resemblance between the form and meaning of a linguistic sign.

INTERLOCUTOR: a person who takes part in a dialogue or conversation.

LINGUISTIC EVENT: an occurrence in which listeners will hear and internalize speech; hearing a word in an informal context may lead to weaker internalized encoding.

PHONOLOGY: linguistic domain dealing with systems of sounds that constitute the fundamental components of a particular language; may include or exclude phonetics.

RHETORIC: how language is used to organize and maintain social groups, construct meanings and identities, and create knowledge.

RHOTICITY: relating to or denoting a dialect or variety of English, in which “r” is pronounced before a consonant and at the end of words.

SEGMENT: the smallest distinct part of a spoken utterance, especially the vowels and consonants.

SEMANTIC PRIMING: the observation that a response to a target is faster when it is preceded by a semantically related prime compared to an unrelated one. E.g., if “dog” is the target, the co-occurrence of “cat” makes memorization easier than “tree.”

SEMANTIC SPREAD: wider semantic recall ranges depending on a listener’s memory for particular words; limited spread typically aids recall.

SEMANTICS: linguistic domain concerned with the meaning of a word, phrase, sentence, or text.

SERIAL-POSITION EFFECT: the psychological tendency of a person to recall the first and last items in a series best.

STANDARD/NONSTANDARD: denotes the default form of a language in terms of its dialect, as is used most frequently in the media.

SUPRASEGMENTAL: denoting a feature of an utterance other than the consonantal and vocalic components, e.g., stress and intonation.

VERBATIM: in exactly the same words as were originally used.

VOWEL RAISING: the heightened acoustic quality afforded vowels in various dialects.

CHAPTER 2: LITERATURE REVIEW

Comprehension of speech is influenced by many factors such as topic, rhetorical structure, terminology, syntax, and more. Comprehension of individual words plays a crucial role in aiding a listener understand the content of speech. The comprehension of words in turn relies on the perception of phonological features such as individual segments (i.e., consonants, vowels), suprasegmentals (stress, intonation, rate), and other elements. Additionally, there may be sociocultural factors (social class or education levels, for instance) that impact the understanding of speech.

2.1 Comprehending speech in an L1

An important distinction is to be made among two possible scopes of the encoding process, verbatim and gist. These can be likened to memorizing exactly what was said or just the general idea thereof, respectively. The former case typically increases memory capacity for particular words, thereby restricting semantic spread and helping the listener recall. The latter case results more frequently in false memories. Previous studies address possible instances in which negative experiences influence recall rates or lead to the production of false memory (Brainerd et al., 2008). While the words were chosen not to be severe enough to remind participants of any traumatic experiences, the data suggest the benefits of avoiding target terms that may be associated with negative experiences.

Such an investigation interests this study in that it might clarify how misunderstandings and false memories can arise even when both interlocutors have spoken the same language as their L1.

2.2 Comprehending dialect

Studies conducted by linguist William Labov (1972) explored the potential influence of spoken certain dialectal features on how well the speech was processed. Most notably, his seminal work on a department store experiment recognized the varying production of the [ə] vowel relative to New Yorker social classes' r-dropping and how this feature could become processed less easily to the listener (cited in Sumner & Samuel, 2009).

Several studies have established the importance of not only grouping the speakers of a study's dialects, but also the listeners. Bowie (2000), for instance, observed the /u/ vowel merger in Maryland and grouped the listening participants into natives and exiles. The former group had always lived in the region of Maryland in which the relevant phonological types occurred, while the exiles had moved elsewhere in their adulthood before returning (cited in Sumner and Samuel, 2008). Bowie found that the exile group better recognized the dialect's unique mergers, which he stated was a result of having been around the non-merged dialects.

Precise acoustic features appear to trigger accurate identification in the realm of sociolinguistics. This might explain the easy connection listeners have upon listening to Southerners' lazy and drawled vowels and their notions of bias on which the review section will later elaborate (Preston & Robinson, 2005, p. 1).

Even though experiments such as these explain the interplay between dialectal familiarity and processing, there is not much that we know about the mechanisms at play. While the assumption is that one's production reveals his or her dialect, the results of a study conducted by Sumner and Sumner (2009) suggested that dialectal aspects may differ within an individual as they do between individuals. And so what does this lead you to believe about your study being necessary?

2.3 Social biases in comprehension

On underlying biases, Edwards (1982) provided a summary: "... people's reactions to language varieties reveal much of their perception of the speakers of these varieties" (Preston & Robinson, 2005, 20). Negative attitudes thus introduce the possibility of testing bias and present important questions to the fields of speech-language pathology and audiology.

It has been determined that standard speakers of American English were most often judged highest on their competence, while nonstandard speakers were rated higher in terms of their integrity and attractiveness. Iconicity functions similarly, and in many cases trigger negative evaluations without the need for specific group association (Preston & Robinson, 2005). Even such spoken aspects as rate are important, even for an individual feature. Focusing on these aspects will help the variables of the experiment maintain authenticity.

2.4 Recall of dialect

In an effort not to add potential sources of false recognition, such experiments typically only measure the quantity of recalled words from the target term list. Moreover, previous experiments' tendencies to insert unrelated distractors (thereby additionally measuring variables of response bias) might be vigilantly avoided. Similarly, due to the possibility of semantic associations being formed, the incorporation of relevant concepts might lead to further memory loss. Yet in the context of this experiment, listeners' tendencies to form semantic associations is preferable because it permits an effective memorization strategy.

The experiment by Brainerd et al. (2008) also developed the emotional spectrum with regards to the effects on memory. Namely, the researchers determined that remembering negative word lists causes false memory, while lists containing positive items actually mitigated this effect. They assert that negative emotional valences "greatly enhance the familiarity of the semantic content of critical distractors, whereas positive valence has the opposite effect" (p. 6). Thus, in the realm of this experiment, the words presented to the listeners will be thematically consistent and neutral in terms of the experiences with which they may be linked.

In contemplating three distinct dialects, Sumner and Kataoka (2013) examine listeners' abilities to maintain speed and proficiency as they understand and record the phonetically varied forms to which they were exposed. The researchers based their experiment around the concept of spoken linguistic "events" and their resulting semantic encodings. Individual linguistic events form dense clusters of episodes that activate acoustically similar productions; this occurs more frequently in these contexts than in those of less dense clusters. The input in this case was

multifaceted, as the authors recognized the importance of including both a prestigious standard variant and one that is often assigned lower status. Yet the inclusion of a semantic priming methodology might slightly weaken the experiment, as semantic priming “is heavily modulated by attention” (Sumner & Kataoka, 2013, p. 7). Nonetheless, an attention-modulated component will be necessary for this experiment, given that listeners must hear the information they are attempting to memorize without pause.

2.5. Testing recall

An additional selection of literature exists to help contemplation of the effect(s) a prolonged memory test may have on its participants. Here the literature review section considers the matters of interfering psychological phenomena such as the following.

2.5.1 Testing fatigue

A test conducted in a Danish public school system assessed students’ testing performance relative to the time of day. It discovered that, for every hour later in the day, test performance decreased, especially in the context that breaks were not allowed. It was further determined that cognitive fatigue should be a variable one determining frequencies of learning periods and their interrupting breaks. Similarly, these and other such external factors would be valuable domains to control to maintain emphasis on test scores (Sievertsen, Gino, & Piovesan, 2016, p. 2621).

2.5.2 Attention

Cognitive attention has been studied by linguists working in the domain of second language acquisition. Problems often arise in the various linguistic domains due to attention and its component processes. Cognitive attention has been conceptualized into an integrated human attention system with three separate, interrelated networks: alertness, orientation, and detection (Tomlin & Villa, 1994, p. 183).

2.5.3 The serial effect

The enhanced recall of the first-presented items relative to the middle ones (which alone is referred to as the primacy effect) has been another source of study. This serial effect phenomenon, besides the aforementioned effect, results in the learner reaching a steady state of information overload so that additional items throughout the middle of the list are processed nearly equivalently relative to each other, with a lower amount of overall processing. Yet the lattermost items in a series retain the trend of the initial ones: enhanced recall of the last few items in an immediate test for free recall (Garcea, 2009, p. 29).

2.6. Conclusions from previous studies

In conclusion, previous studies have asserted the importance of dialectal differences in terms of their effects on listener perception of the speaker, to the point of inhibiting the psycholinguistic processing of speech. Research investigating potentially interrupting factors like fatigue and positional effects has been incorporated. Yet these sources do not provide much in

the way of raw memory assessment using contrastive dialects as input. As such, my study will address the insufficiency in previous studies and seek to answer the proposed research questions more directly.

CHAPTER 3: METHODOLOGY

The following section discusses the participants, methods, stimuli, and procedure.

3.1 *Participants*

3.1.1 *Recall task participants*

A total of 31 participants were recruited by a flyer (see Appendix for flyer). Almost all participants were university students, ages 18-26, recruited at the University of Mississippi. The participants consisted of Americans who had not lived in the South prior to their college years ($n = 10$), and Americans who have lived in the South their entire lives ($n = 21$). This status was determined by the regions they listed on their answer documents, as related to map 1. The speakers had various experiences with General American and Southern American English. For example, many of the non-Southern Americans lived in Mississippi to attend university for several years. Appendix C shows the exposure of each participant and their background information (e.g., university student).

This study seeks to limit any potential effects age might have on working memory. As a result, participants could be unified by maintaining the target age range falling between 18 and 26 years of age.

With the 31 participants, 25 meetings took place via Zoom, while the other 6 took place in person. I was sure to distinguish them further via their input to the pre-test questions: where they have lived throughout their lives and for how long. Twenty of the 31 participants reported having lived in the Southern United States for all of their lives. The other 11 participants reported a mixture of living arrangements, unified only in the fact that they have spent between one and four years in the Southern United States for their attendance at the University of Mississippi.

3.1.2 *Word list speakers*

To prepare the word list for participants, two speakers read word lists: the Southern American English (SAE) dialect was represented by a lifelong Mississippian, and the General American (GA) dialect was represented by a lifelong Wisconsinite. Both are representative of their region while not incorporating elements of any local sub-dialects.

3.2. *Methods – word recall task*

The method employed by this study was a word recall task. Participants listened to a list of words, and then wrote down on paper or typed (depending on the distribution format) the words they could recall from the list that they heard.

Written or typed elicitation tasks were distributed to accompany the audio playback of two dialectically distinct word sets, General American (GA) and Southern American English

(SAE). Participants heard both word sets, writing the words that they recalled immediately after the playback of each of list concluded.

How the task was conducted varied among the 31 participants due to the necessary pandemic precautions. For the 25 participants with whom I conducted the study via Zoom, it was necessary to proctor with more caution. I emailed the participants both the relevant files: two MP3 files of the word lists and two Word documents on which they could consent to participate, and then write the words they recalled from the sound files. I then told them the order in which to open them, and requested that they mute their microphones while listening to the word lists to prevent potential echo during the call. However, for the tests occurring in person, I had control over audio playback, so paper answer documents were distributed (see Appendix B).

3.3 Stimuli – Word list

Stimuli were presented in the form of audio samples of words spoken by speakers of two American English dialects – one General American (GAE) and one Southern American (SAE). Consideration was given to the two speakers' age, race, and gender. These factors did not vary so that the listeners' focus would remain on their dialects. Similarly, the speakers chosen were intended to be indicative of their dialects insofar as they didn't become distracting or caricatural; yet, as mentioned in the study by Sumner and Kataoka (2009), an implicit level of dialect-driven social prestige may have inevitably separated the two. Also, when the audio was played back for the six participants whose tests occurred in person, it was played at the same volume level from my laptop.

None of the previous literature consulted explicitly listed the words for the participants to read, so this experiment created new examples from which to draw. The word lists chosen for the two speakers to read in this experiment (listed below in Table 1) are original. The words are intended to match their counterpart solely in phonological features, which are.... These features distinguish the two dialects in terms of vowel raising, diphthong intensity, and rhoticity (that is, the potential loss of “r” sounds in the final syllables of words). The words have been chosen also due to their occurrence within the academic world, which follows the protocols of avoiding potentially traumatic words, outlined in the literature provided by Brainerd et al (2008). Moreover, the lists were balanced in terms of their phonological feature criteria; one will not have fewer or more instances of the quality of the vowel /i/, for example (cite the word that demonstrates this).

Audio playback was separated by dialect, meaning that the listeners would never hear the same dialect or set of words among both lists; however, in every case, the GA speaker’s word list was played first. Finally, 15 words were selected as a reasonable number of words for the participants to remember, in accordance with the study conducted by Brainerd et al. (2008), so that the memory retention tasks were not too difficult from being too lengthy nor too easy from containing too few words. Thus, emphasis would remain on the salience of certain words to determine the ease with which they could be remembered.

The speakers’ speech contained various features of their respective dialects to render the speech recognizable without being distracting. As a result, the emphasis remained on the words

memorized per accent, and for reasons influenced solely by the differing phonological manifestations among vowels, diphthongs, and rhoticity.

Table 1. Word lists

Word No.	List 1	List 2	Dialect Variation of GAE vs. SAE
1	<i>Math</i>	<i>Path</i>	/æ/ quality - pre-fricative
2	<i>Grade</i>	<i>Name</i>	Diphthong /ei/ intensity - 1 st syllable
3	<i>Plant</i>	<i>Answer</i>	/æ/ quality - pre-nasal
4	<i>Hour</i>	<i>Outline</i>	Diphthong /aʊ/ intensity - 1 st syllable
5	<i>Prime</i>	<i>Time</i>	Diphthong /aɪ/ intensity - ultimate syllable
6	<i>Inspection</i>	<i>Information</i>	/ɪ/ vowel quality
7	<i>Proof</i>	<i>Truth</i>	/u/ pre-fricative
8	<i>Device</i>	<i>Advice</i>	Diphthong /aɪ/ intensity post-fricative
9	<i>Score</i>	<i>Report</i>	/ɪ/ quality - ultimate syllable
10	<i>Entry</i>	<i>Summary</i>	/i/ quality - ultimate syllable
11	<i>Complete</i>	<i>Conclude</i>	/ə/ vowel quality - 1 st syllable
12	<i>Correction</i>	<i>Selection</i>	/ɛ/ quality - penultimate syllable
13	<i>Preparation</i>	<i>Examination</i>	Diphthong /ei/ intensity - penultimate syllable
14	<i>Text</i>	<i>Desk</i>	/ɛ/ quality - 1 st syllable
15	<i>Label</i>	<i>Level</i>	Vowel post-lateral

Finally, attention had to be paid to the quality and properties of the speakers' recordings. As neither was supervised, any differences between the two had to be corrected with audio editing software. The role of software editing in my stimuli was restricted to standardizing the recordings' clarity, leaving the unique properties of the speakers' voices untouched and natural. For instance, due to television background noise being faintly audible in the SAE speaker's recordings, Audacity software was put to use to match the overall clarity of the GA speaker's

recordings. The Southern American English speaker pronounced words at a slower rate. While the gap could have been closed by accelerating his speech, the modification would have disrupted the authenticity of the recording. The same would be the case if I were to have inserted extended periods of silence between the GA speaker's words. Periods of silence between the words in the GA speaker's set were approximately .05 seconds in length, while the silence between the words in the SAE speaker's set lasted approximately 1 second. Even though this caused the playback time of the SAE word lists to last noticeably longer (at 24.002 seconds) than the playback time of the GA word lists (at 15.368 seconds), this preserved the speakers' rates of speech – a significant result when comprehension-oriented processing is taken into account.

The above word lists were created. Each list consisted of 15 words because of their relative high frequency and similarity to their counterpart in the other list. 15 was determined as a reasonable number by my advisor and me (and also because it had occurred in previous research) as a reasonable number of terms to expect listeners to retain. Each list was read in both General American and Southern American English. Two sets of these word lists were then created. Set one consisted of the GA word list 1 and SAE word list 2 while set two consisted of SAE word list 1 and GA word list 2. The two sets were created to ensure there was no bias in any of the two word lists or in the order that the dialects were heard.

3.3 Procedure

3.3.1 Recall task participants

Participants were recruited by a flyer (see Appendix of flyer). Each participant filled out an information background questionnaire and set up an appointment time to do the recall task. At the recall task session, each participant was tested by Zoom as a safety precaution against COVID-19. The researcher explained the experiment, and then the participant signed the consent form. The first word list was played, after which the participant wrote down as many of the words from the list that they could recall once the list of words had all been read. The second word list was played. The participant then wrote down as many of the words that they could recall from this set of words. The participant was thanked as the experiment was concluded.

The reading stimuli are organized by the combination of dialectal word lists read to each participant. The two possible arrangements are as follows: (1) GAE first and then SAE second, or (2) SAE first and then GAE second. This way, each participant's stimuli would not contain either two instances of the same accent or of the same word lists. Additionally, having the word lists alternate provides a variable for the statistical analyses for this experiment.

Participants were first played an audio sample of a General American English dialect reading a list of target words. When the playback ended, they were required to write down as many words as they could remember from the playback before repeating the steps with a new list

read by a Southern American dialect. Participants were allowed as much time as needed to write down the words they confidently remembered.

3.3.1 Word list speakers

The two word list speakers were both given the two word lists to read. I prompted them to read the lists clearly but as they would in any other reading context to remain authentic. I did not monitor the GA speaker, who was emailed the lists. I recorded the SAE speaker in person via my smartphone and got the MP3 recorded in two takes. Later, when inspecting their lists as audio files, I verified that the clarity and authenticity were satisfactory before proceeding.

3.4 Analysis

Data were stored in the form of the completed answer documents that were emailed back to me at the end of each participant's test. Each participant is notably referred to by a numerical value – not only for the sake of the promised anonymity, but for a streamlined means of referring to them in the case of an outlying statistic feature. These completed answer documents were saved to my personal computer and later analyzed for statistical analyses. This includes the physical paper documents, which I converted to PDF format via my smartphone and saved to my computer.

Data were analyzed by calculating memory retention percentages from the raw user scores. Specifically, I calculated the average recall percentage of GA vs. SAE words by averaging the sum of each recalled word per dialect. I then calculated a similar percentage,

except according to the percentages yielded by hearing GA speak list 1 and SAE list 2, or vice versa. This permitted analysis of whether hearing a dialect in a certain accent was a better constricting variable over hearing certain words in a certain dialect.

CHAPTER 4: RESULTS

Results of the recall task were as follows. The average recall percentage for all words read in the GA dialect was 39.4% (or approximately 6 out of 15 words). The recall percentage decreased slightly to 33.5% (approximately 5 out of 15 words) for the words read in the SAE dialect. Additionally, GA word lists also caused more falsely remembered words than the SAE word lists. Nine out of 31 participants recalled a word or words that were not read from the list (resulting in a 29.0% likelihood of false memories occurring); these included words that sounded similar (“mass” instead of math) and words that had occurred as part of the testing (“recruitment,” which was remembered as part of a file name that had been emailed to the students). For the SAE word lists, there were only five instances of falsely remembered words per participant (a 16.1% likelihood of these memories occurring). The SAE lists were played after the GA lists in every case, so any instances of participants remembering GA words as part of the SAE list were not included in the latter percentage.

Table 2. *Most-remembered words*

Recall Rank	List 1 (GA)	List 2 (GA)	List 1 (SAE)	List 2 (SAE)
1	Math (12 – 1)	Path (14)	Math (13)	Level (15)
2	Label (11)	Desk (12)	Label (12)	Desk, examination (13)
3	Grade, Inspection (10)	Level (11)	Text, grade (10)	Path, truth (6)
4	Plant (7)	Examination (9)	Preparation (9)	Answer, summary (4)
5	Score (6)	Answer (7)	Correction (7)	Time, name, outline, conclude, advice (3)
6	Text, Hour, Prime (5)	Time, name (6)	Inspection (5)	Report, selection, information (1)
7	Correction, proof, preparation (4)	Summary, outline (5)	Complete (4)	
8	Device (3)	Truth, report, conclude (3)	Score (3)	
9	Entry (2)	Advice, selection (2)	Plant, hour, proof, device, entry (1)	
10	Complete (1)	Information (1)	Prime (0)	
11				
12				
13				
14				
15				

Note: The first number in parentheses represents the number of persons who recalled this word, while the second number is the order in the original list of 15 words from Table 1 above.

Among the individuals who had spent their entire lives in the Southern United States, the average individual recall percentage was 36.7%. This barely outperformed the percentages of speakers whose entire lives were not spent within the Southern United States – a score of 36.0%.

When considering the memorability of each set of lists according to its combination, those words that had List 1 read in the GA dialect and List 2 in the SAE dialect had an average recall percentage of 35.1%, while those in which List 2 was read in the GA dialect with List 1 in the SAE dialect had an average recall percentage of 37.8%.

Overall, considering performance at the individual level, the overall recall percentage of all words regardless of the list or dialect was 36.4%. This is roughly indicative of 5.5 words being remembered from each sector of 15. As a result of these word recall rates, it seems that when recalled words were constricted by hearing list 1 or list 2 in a certain order over just the dialect, then greater disparities arose. This could be due to any combination of factors – most likely the dialect, the specific lists that were read in the dialects, the number of phonemes per word, or the words' placement in their respective lists.

The next chapter will highlight the most significant results of this investigation, providing insight into the reasons certain variables produced greater disparities.

CHAPTER 5: DISCUSSION

This experiment's results indicate that speech read in a General American English dialect is more memorable to college students than speech read in a Southern American dialect, at least as far as the lexical recall of individual words is concerned. While the focus of this study is on phonological qualities, this may be insufficient to explain both the slight disparities in performance and the overall low performance on the memory assessment tasks.

The first research question of this study asked whether General American speakers recall more words read by a General American English speaker or Southern American English speaker. The results show that they indeed recall more, which demonstrates the effect of exposure and familiarity on lexical recall: taking the experiment's sample size into account, there is no profound difference (<1%) in how well regional outsiders performed on this test when compared to their Southerner counterparts.

The study also examined if speakers of Southern American English recall the same number of words equally when spoken by either a General American English speaker or Southern American English speaker. Results show that the difference is minimal. As such, I propose that exposure to media and education might have been influential in Southerners' perception of the General American dialect, just the same as exposure by these means might have familiarized non-Southern Americans to the Southern American English dialect.

5.1 Analysis of low recall percentages

Most outstanding is the low overall word recall percentage, which was determined to be 36.4%.

Brainerd et al. (2008) maintained that 15 words in a list was a reasonable number; however, if the participants' scores and the numerous observations noted during certain participants' sessions are any indication, this measure only served to overcomplicate the experiment from the participants' perspective.

Other impediments may have been waning attention or increasing fatigue from focusing on the task, as per the literature review section. The scores of participants recalling the GA word lists were slightly higher in general. This could be just as attributable to the fact that this test consistently appeared first to each participant as to the fact that a majority of participants were already from the South and thus would have found the American Midland dialect less familiar.

Another factor that might have caused participant fatigue is the specific phonological reasons for which the words in both lists were chosen. As Table 1 indicates, the lists' words necessarily matched in terms of the phonological features and, in some cases, the syllables in which they occurred. However, for the listener, this resulted in having to recall 15 words for the purpose of presenting them with a variety of phonemes. Similarly, the words were rather inconsistent in that some were semantically concrete and others were semantically abstract (e.g., device in List 1 versus advice in List 2, respectively). And finally, the list contained several instances of homophony and homonymy. The former instance was recognized by participant 31, who typed "hour (our?)" on the answer sheet.

The length of certain word choices was likely the primary factor governing how well they were recalled, potentially explaining why *math*, *path*, and *level* ranked so highly: they are monomorphemic, with one or two syllables only. Also, phonologically, these words are rather basic, containing no diphthongs and providing fewer occasions in which noticeable vowel raisings could occur. There could also be influence from the serial effect (as described in the literature review), given that these words were also the first and last ones that occurred in their respective lists.

5.2 Importance of being a Southerner

It is important to contemplate whether being a Southerner has had any outstanding effect on the experiment's results. Residents of the South may be just as likely as the rest to hold notions about speech that is derived from speakers of other United States regions. In general, the role of technology, mobility, and education in the United States might have had a profound effect on the results.

All three of these variables can feasibly be understood to propagate standard dialectal forms over the nonstandard forms. As indicated by map 1, a majority of American speakers do not live in this region, and as such, a major composition of social media personalities and educational forms will likely not feature its forms. Sociolinguistics concerns itself with the notion of being upwardly socially mobile (in essence using phonological forms to achieve higher status phonologically), and if these are not represented in a dialect such as SAE, then it has no

reason to be propagated as a popular form. As a result, Southerners will likely be regarded as possessing a less nationally-recognized dialect as a result of its lack of prestige.

5.3 Conclusions

In conclusion, whether sudden exposure to a new dialect truly results in lower retention rates of its speech is not quite certain. The presence of additional factors and the shortcomings of the structure of the test might have had ramifications of their own. These will be detailed in the following section.

CHAPTER 6: CONCLUSIONS

As a result of these findings, I posit the significance of these findings to the field of sociolinguistics. Their significance lies in the attention given to smaller input variables, all the while acknowledging the limitations that will be put forth by the remaining sections of this chapter.

6.2 Limitations of the Study

6.2.1 Methodology- and stimuli-related discrepancies

The different methods used in the virtual and in-person tests seemed not to impact the recall percentages to any great extent, as these six all fell within the range of the other virtual participants' average scores. However, in terms of false recalls, this still led to instances thereof in five of the six in-person participants' answers.

The goal of having speakers representative of their region's typical dialect was achieved, as I was able to once again determine from post-test comments that certain students could identify the first speaker as being from outside of the South, and the second speaker as being a southerner. No comments were made about the sophistication, ease in understanding, or pleasantness of either accent; perhaps if this study is to be built upon, these qualities could be measured to present a greater idea of listener biases.

Overall, it was discovered through this experiment that, no matter the regions in which a person spent his or her life in the United States, no person is significantly more or adept at recalling what a region's dialect said on account of its features. As such, it is recommended that

speakers take no steps to adjust their phonological productions in real-world environments, as they might be remembered nearly the same. Additionally, the fact that there was only one speaker per dialect did not afford listeners much of an opportunity to explore a foreign dialect beyond one representative.

The broad separation of listening participants into Southerners and non-Southerners did not allow for extensive examination of which regions might have been better predisposed to understanding foreign dialects. For instance, if Mid-western Americans performed better at the test than did Westerners, this cannot be determined through our results, as these regions are thrown into a general category.

Moreover, it would have been good experiment design to alternate the order in which the dialects were played to each speaker, just as had been done with the word lists. This would have provided an additional variable, thus allowing the experiment to test whether the order of introduction to the dialects played any part in how well they were remembered. And, in general, this randomizing would have mitigated the serial effect at least to some extent.

6.3 Future research

Future studies would likely benefit from better quality control of the audio. For instance, the study by Sumner and Kataoka (2013) had all listeners listen in a sound-attenuated booth, which unfortunately was not available at this time, or feasible given the pandemic protocols. Similarly, one might help his or her results by presenting the listeners with words that are shorter, or with smaller quantities of words.

6.4. Direct response to research questions

This study has proposed two research questions. In answer to RQ1 (Are word recall accuracy percentages for words read in a General American dialect higher than those read in a Southern American dialect?), my study shows that the General American dialect does indeed yield slightly higher, more accurate recall percentages than its contrastive nonstandard counterpart.

In answer to RQ2 (Does exposure to a non-native dialect influence perception of words spoken in that dialect? That is, do speakers of a Southern American dialect perform more accurately in the word recall in a Southern American dialect than speakers of only General American?), my study shows again that only slight results exist in its defense.

The significance of my study will benefit sociolinguistics in a way that implements testing recall studies as well. The emphasis I have allotted to retention as a vector of dialectal exposure will likely permit further conclusions to be made in both areas of research.

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APPENDICES

The following four subsections are the script, blank answering document, and results tables of this study.

Appendix A: Recruitment Script with Informed Consent

Your participation in a research-based project is requested. It involves the details that follow.

Project Title: Vocabulary Studies

Description

The purpose of this research is to determine memory retention of words. The desired individuals include anyone of college age.

Task

For this study, you will listen to two randomized word lists one at a time; at the end of each one, you will attempt to recall and write as many as you can remember.

Duration

This task should take 15 minutes or less.

Right to Withdraw

It is not necessary to take part in this study. Should you change your mind about participating at any point, you may stop the test and have your scores discarded. Answers are anonymous, and the data cannot be used to identify you in any way.

Risk and Benefits

This study poses minimal risk. Benefits include contribution to research in the linguistic field.

Study Author's Contact Information

If you should have any questions concerning the details of this study, the research leader can be contacted at cadougla@go.olemiss.edu.

IRB Approval

This study has been reviewed by the University of Mississippi's Institutional Review Board (IRB). If you have any questions, concerns, or reports regarding your rights as a participant of research, please contact the IRB at (662) 915-7482 or irb@olemiss.edu.

Statement of Consent

I have read and understand the above information.

Consent

I agree to participate.

I do not agree to participate.

Please confirm that the necessary prerequisite applies:

I am 18 years or older.

Appendix B: Survey Questions Answering Document

Please list the regions in which you have lived during your life (i.e., Midwestern United States):

Please indicate the length of time for which you've lived in each (i.e., since birth or for the last 5 years):

Memory assessment 1 – In the space below, please write all of the 15 words that you recall from list 1.

Memory assessment 2 – In the space below, please write all of the 15 words that you recall from list 2.

Appendix C. Remembered words, totals by participants

Participant Numbers / Word Combinations	Regions	Time in Regions	Recalled Words 1 (GA)	Number/ Percentage Recalled 1	Recalled Words 2 (SAE)	Number/ Percentage Recalled 2	Participant's Average Percentage Recalled
1 / A	Southern US	All years (100%)	math, hour, inspection, prime, score, grade, plant	7 (47%)	summary, examination, truth	3 (20%)	33.5%
2 / B	Southern US	All years (100%)	examination, path, conclude	3 (20%)	correction, complete, math, text, grade, score	6 (40%)	30%
3 / A	Western US, Southern US	10 years (42%), 14 years (58%)	math, grade, hour, score, prime, text	6 (40%)	path, time, desk, level, examination	5 (33%)	36.5%
4 / B	Southern US	All years (100%)	path, outline, life, desk	4 (27%)	math, preparation, correction	3 (20%)	23.5%
5 / A	Southern US	All years (100%)	math, label, inspection, gray, color	3 (20%)	examination, level, desk, truth, outcry, selection	5 (33%)	26.5%
6 / B	Southern US	All years (100%)	path, desk, level, name	4 (27%)	math, text, label	3 (20%)	23.5%
7 / B	Southern US	All years (100%)	time, truth, device, report, selection, examination, desk	7 (47%)	plant, hour, inspection, truth, device, entry, complete, correction, preparation	9 (60%)	53.5%
8 / B	Southern US	All years (100%)	path, name, answer, time, report, summary, outline, desk, level	9 (60%)	math, plan, label, text, complete, score, correction	7 (47%)	53.5%
9 / A	Western US, Southern US	13 years (57%), 10 years (43%)	math, grade, correction, inspection	4 (27%)	advice, examination, desk, level	4 (27%)	27%
10 / A	Southern US	All years (100%)	preparation, text, label, math, score	5 (33%)	examination, desk, level, time, path	5 (33%)	33%
11 / B	Southern US	All years (100%)	path, name, answer, time, information, truth, advice, report, summary, selection, examination, desk	13 (87%)	math, grade, inspection, label, text, correction	6 (40%)	63.5%

12 / A	Southern US	All years (100%)	label, score, prime, math, complete, correction, inspection, plant, grade	9 (60%)	desk, level, examination, answer, outline, advice, truth, summary	8 (53%)	56.5%
13 / B	Midwest US, Southern US	18 years (86%), 3 years (14%)	path, summary, examination, desk, level, conclude	6 (40%)	text, label, math, preparation, grade	5 (33%)	36.5%
14 / A	Southern US	All years (100%)	mask, label, plant, device, correction	4 (27%)	desk, level, path	3 (20%)	23.5%
15 / B	Southern US	All years 100%)	desk, level, examination, path, test	5 (33%)	label, test, text, math, preparation	4 (27%)	30%
16 / A	Western US, Midwest US, Southern US	17 years (81%), 1 year (5%), 3 years (14%)	label, math, grade, inspection, proof	5 (33%)	level, desk, examination, recruitment	3 (20%)	26.5%
17 / B	Southern US	All years (100%)	path, name, answer, time, outline, desk, level	8 (53%)	math, grade, correction, label, score	5 (33%)	43%
18 / B	Southern US, Northeastern US	18 years (86%), 3 years (14%)	path, examination, desk, level, outline, time	6 (40%)	preparation, text, label, math, grade	5 (33%)	36.5%
19 / A	Southern US	All years (100%)	math, grade, entry, proof, label, text, inspection, prime, device	9 (60%)	desk, level, examination, proof, advice, grade	6 (40%)	50%
20 / A	Southern US	All years (100%)	label, inspection, text	3 (20%)	truth, examination, level	3 (20%)	20%
21 / A	Outside of US, Southern US	2 years (12%), 15 years (88%)	math, grade, plant, hour, inspection entry, label	7 (47%)	path, answer, information, report, conclude, summary, desk, level	8 (53%)	50%
22 / B	Northeastern US, Midwestern US, Southern US	1 year (4%), 1 year (4%), 21 years (92%)	path, answer, improve, desk, level, examination, equal	6 (40%)	math, complete, preparation, label, test, inspection	6 (40%)	40%
23 / A	Midwestern US, Southern US	18 years (90%), 2 years (10%)	mass, grade, proof, plant, label, prime, inspection	6 (40%)	level, desk, path, time, answer, conclusion, entry, examination	7 (47%)	43.5%

24 / B	Southern US	All years (100%)	desk, level, path, advice, examination, summary, conclude, name, answer	9 (60%)	text, label, math, correction, grade, improve, inspection	6 (40%)	50%
25 / A	Northeastern US, Southern US	> 1 year (5% max), 20 years (95%)	mass, grave, score, preparation, inflection	2 (13%)	math, name, outline, examination, conclude, level	5 (33%)	23%
26 / B	Southern US	All years (100%)	level, desk, path, outline, time, conclusion, summary, examine, study	6 (40%)	label, text, preparation, graph, plan, outline	3 (20%)	30%
27 / A	Southern US	All years (100%)	inspection, math, respect	2 (13%)	name, desk, summary, level, examination	5 (33%)	23%
28 / A	Southern US	All years (100%)	math, grade, hour, proof, label, preparation, correction, plant	8 (53%)	path, name, answer, outline, conclude, desk, level	7 (47%)	50%
29 / B	Southern US	All years (100%)	exam, level, path, name, answer	4 (27%)	label, text, inspection, meth, preparation, level	4 (27%)	27%
30 / A	Outside of US, Southern US	<1 year (5% max), 20 years (95% minimum)	math, grade, score, hour, plant, label text, preparation	8 (53%)	desk, level, examination, truth	4 (27%)	40%
31 / B	Southern US	All years (100%)	path, answer, examination, level, truth, list	5 (33%)	label, math, preparation	3 (20%)	26.5%

Note: red words are false recalls, orange words are words remembered from the first round of experiments in the second one, and green words denote participants whose tests occurred in person. A means the listener heard word list 1 (GA 1) and list 2 (SAE 2), while B means he or she heard word list 1 (GA 2) and list 2 (SAE 1), respectively.