Schwa

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Schwa: Language and Linguistics is published by the Department of Linguistics and English Language at Brigham Young University. Its contents represent the opinions of the authors and editors and not necessarily those of the faculty or administration of Brigham Young University. We are always looking for submissions and staff members. If you are interested, please visit us at schwa.byu.edu.

Cover design by Abby Ellis.

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About *Schwa*

We are an academic journal produced by the students of Brigham Young University. Our mission is to increase the volume and accessibility of linguistic scholarship—especially for those without graduate school experience—while simultaneously training editors and designers in the ways of modern publishing. Some of our articles are strictly theoretical and academic. Others are less technical and more personal in nature. Experiments, surveys, corpus analyses, and essays are all acceptable. We have published on all the following subdisciplines of linguistics and more:

- Phonetics, the perception and production of speech sounds
- Phonology, the system of speech sounds used in a given context
- Semantics, the meaning constructs of words and sentences
- Syntax, the structure of permissible and meaningful sentences
- Pragmatics, real-world language use and other speech-related actions
- Sociolinguistics, language variation based on sociological factors
- Psycholinguistics, the cognitive tasks necessary for language
- Fieldwork notes from living in a foreign language-speaking community
- Forensics linguistics, the role of language in law

We are always accepting submissions. Articles on any language are welcome, including cross-linguistic studies, but they must be written in English.

Our staff includes both editors and graphic designers. We extend an open invitation for new staff members. Go to our website at schwa.byu.edu to submit an article or join our staff.

Editor's Note

Language is both predictable and unexpected. We observe it, record it, analyze it, and dissect its many usages. Language is intra- and interpersonal. It is what ties our communities together and is a building block of communication. As we study language, sometimes what we find surprises us and sheds light onto who we are as people. Here at *Schwa*, we strive to help in the process of making linguistic research available for anyone who wants to be surprised at what their words reveal about them.

This semester was full of surprises. It all started when I became Editor in Chief of *Schwa* rather unexpectedly. To say I didn't really know what I was doing would be an understatement. Every week was a new adventure to tackle and discover. Despite my fears of inadequacy, I had excellent help from Mikaela, whom I replaced, from my managing editors, Isabel and Ellie; and from all my amazing senior editors and staff editors who spent many hours helping me get this journal ready for publication.

We're grateful for the students who have gone out of their way to share their articles with us. Their willingness to share is what keeps this journal going. Despite their busy school schedules, they collaborated and communicated with us effectively and efficiently. Their time and attention didn't go unnoticed.

We're grateful to the Department of Linguistics and our faculty advisor, Dr. Dirk Elzinga, for his support and for his insight. He helps create an environment where we have the freedom to explore and gain experience in leading and editing.

We're grateful for you, the reader. We hope as you read this journal you experience the predictable and unexpected nature of language. Please enjoy issue 27 of *Schwa: Language and Linguistics*.

Abby Ellis
Editor in Chief

Oh, the Places You'll Go With Grammar

Alyssa Regis

Dr. Seuss and Maurice Sendak are two prolific children's writers whose post–World War II era writing has spanned generations. Through a close reading of each author, this article explores key technical differences and similarities in their writing that led to their popularity. This article conducts an examination of the grammar tools, including verb valency, rhyming, musicality, and word coinage, across six of Seuss's and Sendak's books with similar publication dates to discover what makes the two authors' language usage so persuasive and pervasive. This analysis also shows why their usage provides a roadmap for other children's authors.

When it comes to children's literature, few authors are as prolific and influential as Theodor Seuss Geisel. His work is known by children across the globe and across generations, as most of his work was written in the 1960s and 1970s. Seuss's beloved sketches and word coinages keep children coming back to the stories of *The Lorax*, *Green Eggs and Ham*, and *Oh, the Places You'll Go*. But he is not the only great children's author of his time. A contemporary of his, Maurice Sendak, also found a place in children's literature, drawing in readers of all ages with his chimerical worlds in *Where the Wild Things Are* and *In the Night Kitchen*. One of the things that makes both these writers so fantastic at what they do is their wielding of the English language. Maurice Sendak and Dr. Seuss are very different writers, yet they both have a pervasiveness in children's fiction that remains to this day. As contemporaries in the post–World War II era, you might expect them to have similar styles or subject matters. Instead, we find the English language shaped in two completely different ways (though I am sure Max would have been delighted to spend a day with the Once-ler). Analysis of each author and their use of grammar—specifically valency and adverbs, rhyming schemes, and word coinage—will provide greater understanding into the technical aspects of persuasive children's literature.

Overview of Grammar

There are several differences on a grammatical level between these two writers. The first is the way they construct their sentences. Seuss prefers to use intransitive and copular verb structures, which conveys a simplicity to the story that is enticing to young readers. Sendak, on the other hand, uses these structures as well as monotransitive and ditransitive structures, with the significant addition of adverbials. Secondly, Sendak does not consistently subscribe to a rhyming scheme, but those same adverbials have a musical effect similar to Seuss's renowned rhymes. Seuss's books are all in rhyme, which means that his sentence structures are often tweaked to achieve this rhyme. These tweaks often come in the form of made-up words, which leads to my third and final point. In the last section, I will describe how Seuss coins all sorts of fake adjectives and verbs. Adjectives are a vital part to any children's story, as children are learning to describe the world around them. His coinage is one of the reasons children and adults keep coming back to his silly old stories. Although Sendak

does not coin words nearly to the same extent, he is consistent in the simplicity of nouns and adjectives he uses. Through examining these points of grammar, we will see how knowing the tools of language aids good children's writing.

Valiant Valences and Additional Adverbials

Sentence structure is a vital consideration for children's books. Length and complexity of sentences will determine whether children can follow the story or if they will get tripped up by phrases referring to other phrases, prepositions without nouns attached, and verbs with no clear actors. Seuss and Sendak tackle this problem from different angles.

Seuss focuses his sentences on intransitive and copular verb valences, nearly avoiding ditransitive and complex transitive valences altogether. Intransitive valences have no object, taking the form of a subject plus a verb phrase. For example, *The Lorax* is filled with intransitive verbs, occasionally coupled with adverbials to tell us how, where, or why each action occurred. "'I am the Lorax,' he coughed and he whiffed. He sneezed and he snuffed. He snarggled. He sniffed" (Seuss, *The Lorax*, p. 42). All of these verbs (even the made-up one) quickly convey to a child reader exactly how the Lorax is feeling. Seuss also rewrites sentences that could easily have been written as complex transitive valences, which take the form of a subject plus verb phrase plus a direct object plus object complement. This multilayered form forces a young reader to puzzle out who is the actor and who is receiving the action. Seuss writes them as monotransitives. "I proved he was wrong" (Seuss, *The Lorax*, p. 28) could have been written as "I proved him wrong." But the monotransitive version is simpler. It points to the actor and the receiver. Seuss frequently does this in his writing, as well as taking the direct object of a monotransitive valency and having it do an intransitive action, which pulls the story along in a clear order.

Seuss also uses copular valences to achieve similar results. In *The Sneetches*, he creatively uses a copular valency with only determiners: "Whether this one was that one . . . or that one was this one or which one was what one . . . or what one was who" (Seuss, *The Sneetches and Other Stories*, p. 25). Now, this sentence is very confusing. It is hard to tell where the subject complements

are. But that is precisely the point. This genius work of grammar conveys to a child reader a sense of confusion—the same sense of confusion that the Sneetches felt. Seuss is using language here to show a child a story, rather than simply telling it. In this way, this confusing sentence is actually simpler and more easily understood for a child than one might think.

Maurice Sendak takes a different approach to helping a child through the plot of his stories. He actually uses quite a few complex transitive valences in his work. In *Where the Wild Things Are*, we find a complex transitive (S + VP + DO + OC) within three pages of the book. "His mother called him 'WILD THING!'" (Sendak, *Where the Wild Things Are*, p. 6). But Sendak doesn't use valency to make his stories understandable for young readers. Instead, he uses long sentences with easily identifiable adverbials to take the main character through the plot without stopping to create another sentence. His sentences run on for pages and pages, with clauses strung together by conjunctions and action defined through adverbials. For example, take this paragraph-length sentence from *Where the Wild Things Are*:

> That very night in Max's room a forest grew and grew and grew until his ceiling hung with vines and the walls became the world all around and an ocean tumbled by [[with a private boat] for Max] and he sailed off [through night and day] and [in and out [of weeks]] and almost over a year [to where the wild things are.] (Sendak, *Where the Wild Things Are*, pp. 8–16, original punctuation, brackets added.)

The brackets indicate adverbials. These adverbials enable Sendak to create a rolling tone across his pages. It brings the reader through the story without pause for breath. These adverbials make the story easily understood as to the where, when, and how of Max's adventures. Although the sentence is complex because of the many clauses and adverbials, Sendak clearly understood the grammar rules when he was writing it. Every adverbial, every clause, has a purpose here. His writing and tone is different from Seuss, but it is no less clear.

The "Nimbly" and "Chimbley" of Rhyming

A second consideration for good children's literature is the musicality of the words. Most picture books are meant to be read aloud, so the way the words sound is important. In fact, Robin

Heald says the sound is an important cognitive aid: "Because a picture book with musical-sounding language stimulates a part of the brain centered on music, it can be an extraordinary aid in the nurturing and development of the young child's intellect, emotional life, and social skills" (Heald, 2008, p. 228). The lilt of the sentences creates that important persuasive nature needed in good children's writing. There are multiple ways to achieve this: Sendak uses postmodifiers, while Seuss uses rhymes.

Sendak's added adverbials and consistent post-modifiers make his work roll off the tongue. You can't help but feel the bobbing of Max's boat when Sendak writes with such weaving skills. His lack of punctuation due to the long sentences rolls the story forward like the waves and wind push the sail. Sendak doesn't typically subscribe to a rhyming scheme. In *Chicken Soup With Rice*, he makes an effort to rhyme 'rice' with 'twice' on all of the pages. But his truly magnificent work has no specific rhyming scheme in sight. "So he skipped from the oven and into bread dough all ready to rise in the night kitchen" (Sendak, *In the Night Kitchen*, p. 17). The way he uses his grammatical knowledge of post-modifiers in this sentence creates that weaving tone in *In the Night Kitchen* that enables him to work without rhymes.

Seuss, on the other hand, is a master of rhyming. His rhyming schemes, although achieved in unconventional ways, work to pull the reader in, especially when read aloud. Writing in rhyme necessitates extra thought, as you can't just put any sentence on the page next to the last one. Seuss often ends lines on adjectives or adverbs instead of nouns in order to rhyme. "Every *Who* down in *Who*-ville, the tall and the small, was singing! Without any presents at all!" (Seuss, *How the Grinch Stole Christmas*, p. 48). The words chime when said aloud, creating a musicality that aids in cognition. While Sendak and Seuss differ in their approach, both use language conventions to create that musical lilt we look for in children's books.

But Seuss doesn't let the English language constrain him in what he can and cannot rhyme. He often makes up words altogether in order to achieve a rhyme. "And he stuffed them in bags. Then the Grinch, very nimbly, stuffed all the bags, one by one, up the chimbley!" (Seuss, *How the Grinch Stole Christmas*, p. 24) This last word is an example of Seuss's ever-famous word coinage.

Coinage is Quite "Quimney"

Seuss often creates words, either to make a rhyme or a rhythm or simply to pull a reader in. Who doesn't love and recognize words like "grickle-grass," "gliuppity-glupp," and "miff-muffered moof"? But there is another reason Seuss excels at word coinage: he knows the rules. Because Seuss understands parts of speech, morphology, and phonology, his coinages follow the rules and, therefore, teach them. Young readers are still learning how language works. It is vital to their education that the books they read reflect the principles they are learning about, including how words are strung together, how to conjugate a verb, or how to use adjectives of comparison. Understanding the constraints of language helps kids use it better. Sendak understands this when he writes in his alphabet book, "Z – zippity zound" (Sendak, *Alligators All Around*, p. 26). "Zippity" here is clearly an adjective for "zound." Although neither word is real, the statement works because he's teaching language through word and sound association.

Similarly, when kids see Seuss's made-up words, they can see what is different, how the verbs and adjectives are created, and where those words are placed in a sentence. "There is no one alive who is you-er than you" (Seuss, *Happy Birthday to You*, p. 41). An article by Don Nilsen analyzes how Seuss teaches the rules by breaking them. He argues that Seuss's word play teaches children about repetition and morphology in the English language (Nilsen, 1977, p. 569). So when he breaks the rules, when the Once-ler is "glumping the pond" or "bigger[ing] his factory," Seuss knows what he is doing. His knowledge of grammar shapes his coinage, and his coinage is one of the reasons he is such a good children's author.

Although Sendak does not coin as prolifically as Seuss does, he still takes language into account when writing for children. He uses simple but real verbs to ensure understanding in his books. "That very night in Max's room a forest grew and grew and grew . . ." (Sendak, *Where the Wild Things Are*, p. 8). While Nilsen explains how Seuss teaches repetition, this sentence illustrates how Sendak does the same. He simply approaches the topic differently through literal repetition of a verb. The word "grew" repeated three times implies something continuously getting bigger and wider, though traditional English usage would just use the word once. This repetition makes the meaning clearer for a child who is still learning. Whether coining new words or

repeating the foundational ones, both authors bend language to teach it.

Conclusion

It takes many different things to make a good children's author. Despite (and maybe because of) children's books' low word counts, authors have to be persuasive to and readily understood by kids of all ages. Both Dr. Seuss and Maurice Sendak excel in their literature for children because they understand how language works and how they can use it. The differences in execution only make them more unique. Hundreds of authors can all use the same exact language, employ the same exact verbs and dependent clauses, and create something completely different every time. Grammar is a tool in the kit of a great writer. And like a tool, it is up to the individual to decide how to utilize it. But understanding how these two incredible authors do so provides a roadmap to other children's authors. With grammar tools in their kit, they can keep 'biggering and biggering and biggering' their language use and unique writing style just as the greats did.

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Word on the Shtreet

Palatalization in /str/ Clusters in Young Western American Speakers

Emma Westhoff

This study investigates the presence of palatalization in the initial fricative of /str/ clusters in the speech of young adult speakers of Western American English. A total of 1,200 observations were gathered from thirty speakers, including samples of the /str/ variable as well as /st/ and /ʃt/ controls. The level of palatalization in each sample was quantified using acoustic analysis of the sound's center of gravity. Statistical analysis revealed a significant difference in the pronunciation of the sampled /str/ clusters compared to both the /st/ and /ʃt/ controls.

The focus of this paper is the phenomenon of retraction, or palatalization, of the initial /s/ fricative in the English /str/ cluster. This cluster can be found word-initially in words such as *strength* and *street* as well as word-medially, as in *Australian* and *construct*. When retraction occurs, articulation of the /s/ fricative shifts from an alveolar to post-alveolar locus, with the potential to be realized as the post-alveolar [ʃ]. Thus, the word *street* would be pronounced as [ʃtɹit] rather than [stɹit].

Literature Review and Predictions

Smith, Mielke, Magloughlin, and Wilbanks note that the mechanism most commonly cited as being responsible for this change is the long-distance assimilation with the cluster's final /ɹ/ sound and highlight the similar, although less widely studied phenomenon through which /dɹ/ and /tɹ/ become affricated in pronunciations such as *dream* [dʒɹim] and *tree* [tʃɹi] (2019). Retraction in the /str/ cluster has been documented in speakers from Britain, New Zealand, and the United States (Rutter, 2014). Durian suggests that the feature was strongly associated with urban speakers in the Columbus, Ohio, region, although growing in prevalence among all groups studied, and also suggested the existence of intermediate forms between [s] and [ʃ] (2007). Shapiro suggests that this instance of language change is "neither dialectal nor regional" and noted the feature in the speech of public figures from around the country (1995). Rutter was surprised to find the [ʃtɹ] variant in the read speech of only three out of eight mothers participating in a study on language acquisition in Oklahoma City despite the "perceived prevalence" of the feature in the area, although a greater number of the women were seen to use the variant in natural conversation (2014). It was also noted that the form may be used in some words containing the cluster and not others (Rutter, 2014). The collection of data on this topic for the purpose of acoustic analysis has proved successful when centered around the use of spectral analysis and comparison with instances of /s/ and /ʃ/ gathered from speech outside of the cluster (Rutter, 2011). This is supported by the more general observation that the place of articulation of English fricatives can be classified through the use of various acoustic cues, including spectral peak analysis (Jongman et al., 2000).

Notably, little of the work done concerning this change in American English has centered on speakers in the American West. The research outlined above suggests that the prerequisite influence for the change, namely the qualities of the English /ɹ/, are in place in the region, and the phenomenon is broadly observed enough that its occurrence in the West is likely, although it may prove to be variable. This article attempts to fill that gap by investigating the presence of /str/ retraction in young adult speakers in the American West. It seeks to determine through acoustic analysis whether the initial fricative in /str/ differs significantly from occurrences of /s/ and /ʃ/ outside of the /str/ cluster context. My hypothesis is that the overall data will suggest a significant difference between /str/ and /s/. If this occurs, the /str/ fricative may have begun to resemble /ʃ/. Whether this hypothesis will be supported or rejected depends on whether the average center of gravity of the /str/ fricative, determined through spectral analysis, closely resembles or differs from the average centers of gravity of /s/ and /ʃ/ determined by similar means from speech from the same speaker. I expect that the /str/ average will differ significantly from at least one of the controls. The remainder of this article discusses the methods used to gather data, the analysis conducted, and the conclusions that can be drawn from the results.

Methods

Data for this project was gathered through solicited recordings from speakers fitting the general demographic description of young adults from the Western United States. Participants were asked to read a word list of eighty words, with forty being filler words and twenty, ten, and ten meant to target the /str/ cluster and /st/ and /ʃt/ controls, respectively. The words selected to represent both /str/ and /st/ were split evenly between word-initial and word-medial occurrences, while only one word-initial /ʃt/ word was used due to the rarity of the cluster in that position in the standard English lexicon. The mix of positions and vowels used in the selected words should mean that they are sufficient to represent the majority of environments in which the phenomenon of retraction may or may not occur. Notably, the use of read speech may result in fewer observations of the phenomenon than would occur in conversational speech, as noted in previous research. The words, sorted by category, have been included below.

Speakers were selected using convenience sampling methods; all were current students located through their residence in on-campus housing at Brigham Young University. This has notable demographic implications, as the pool drawn from is disproportionately white, active in the Church of Jesus Christ of Latter-day Saints (LDS), and middle-class or higher when compared with young adults in the Western United States generally. This may mean that the data gathered reflects the prevalence of the feature in relation to one or more of those sociolinguistic categories rather than to the target group as a whole. Speakers ranged from eighteen to twenty-four years of age, with sixteen females and fourteen males. Speakers self-identified as being from their specified Western American state. The final count included two speakers from Colorado, four from California, two from New Mexico, six from Washington, eight from Utah, five from Arizona, and one each from Idaho and Oregon. Notably, not all states in the West were represented. Although small compared to the represented population, the sample size of forty words from thirty speakers—1,200 individual observations—should be sufficiently large to observe overall trends, including statistically significant differences between the /str/ fricative and the controls, as well as variance between speakers.

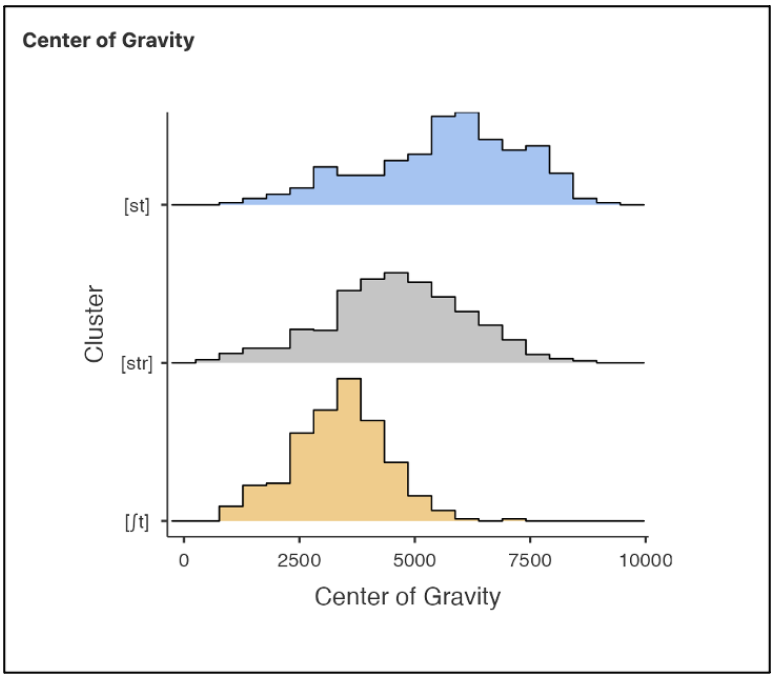
After the recordings had been gathered from each speaker, the targeted fricative in the /str/, /st/, or /ʃt/ cluster was located. A spectral slice was then taken from a selection of the fricative roughly 0.05 seconds in length, and the center of gravity, or average frequency of the sound, was taken from that selection. These center of gravity measurements were used in the statistical comparison of /str/, /st/ and /ʃt/.

Results

The mean center of gravity measurements for the three groups are as follows: /st/ 5,655, /ʃt/ 3,365, /str/ 4,609. The median measurements are quite similar: /st/ 5,866, /ʃt/ 3,391, /str/ 4,606. The spread of center of gravity measurements in Hz for the words in each category can be seen in Figure 1 below. There is a significant trend in which the /st/ measurements cluster towards a higher average measurement than either /str/ or /ʃt/, with /str/ displaying a higher average than /ʃt/. This suggests that, as expected, the average center of gravity of the /str/ fricative is measurably distinct from the fricative in either control category.

Of the three groups, /ʃt/ seems to have the least variance in measurements. This may be due in part to the difference in the acoustics of word-initial and word-medial fricatives, which will be discussed in greater detail below.

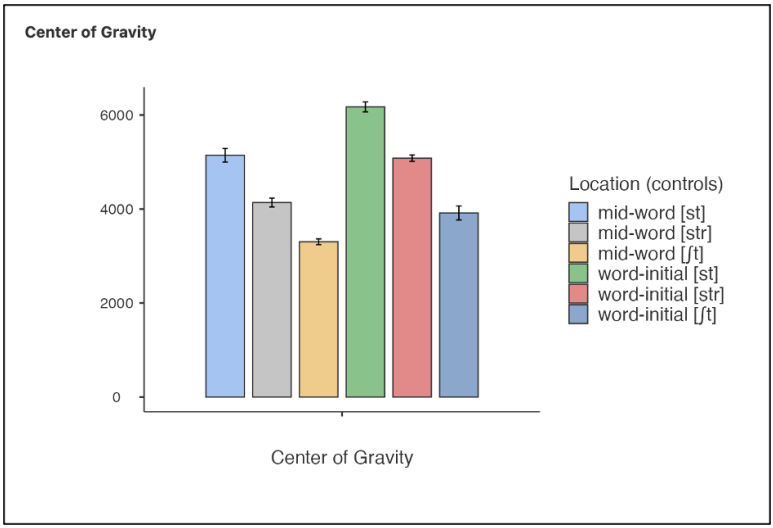
Figure 1



Further statistical analysis was needed to confirm the significance of these initial findings. The test run was a One-Way Kruskal-Wallis ANOVA (assumptions of normality were not met), which showed that there was a significant difference across the group: $x^2 = 304$, df=2, p=<.001. To determine where exactly these differences lay, a post-hoc DSCF pairwise comparison was conducted. The results confirm that there is a significant difference between every combination of cluster pairs. For /st/ and /str/, W=-13.1, p=<.001. For /str/ and /ʃt/, W=- 22.1, p=<.001. The difference between /st/ and /ʃt/ was also statistically significant, W=-18.0 and p=<.001, although this was to be expected in the presence or absence of /str/ palatalization due to the documented acoustic differences of the two fricatives.

As mentioned previously, the /ʃt/ fricatives seem to have the least variance in center of gravity measurements of the three groups. This is supported by a closer look at the numbers. The standard deviation for the /ʃt/ group was 1013 Hz, compared to 1631 Hz and 1498 Hz for the /st/ and /str/ fricatives, respectively. This may be because the /ʃt/ words selected for the word list were mostly word-medial, whereas the words representing the other clusters were split evenly between word-initial and word-medial occurrences. Figure 2 displays the general trend surrounding the effect of the position of the cluster on the average center of gravity. Each word-initial average is noticeably higher than the average for its word-medial counterpart. The lack of word-initial representation may have resulted in an artificially low and artificially homogenous collection of measurements for the /ʃt/ fricative group compared to the other classes of fricatives. This may mean that the distance between the /str/ and /ʃt/ groups was increased due to the word-medial /ʃt/ sampling bias.

Figure 2



The fact that the center of gravity of the /str/ differs significantly from both the /ʃt/ and the /st/ groups has two basic potential explanations. The first would be that the majority of the speakers produce a fricative in /str/ that is somewhere between the traditional [ʃ] and [s] sounds used in the control groups. The second would be that no significant intermediate form is used, and the middle of the road average of the /str/ fricative is attributable to

the fact that some speakers use palatalization in their speech, producing an [ʃ]-like sound, and others do not, producing a consistently [s]-like sound. An alternate version of this explanation could be that the cluster is prone to palatalization in certain words and not others. A closer look at the speech of individual speakers as well as the acoustics of individual words may help to determine which explanation is more likely.

The various speakers' pronunciations of the word *strength* may be taken as a case study to look more closely at the differing levels of retraction employed in a single word. *Strength* was chosen because it had the highest average standard deviation of the word-initial /str/ cluster group. The word-initial group is preferred here over the word-medial group due to the decreased chance of influence from a preceding sound. The minimum center of gravity measurement for *strength* was 2319 Hz, which falls below the average center of gravity for even the /ʃt/ cluster fricatives. The maximum center of gravity measurement for *strength* was 8723 Hz, a figure well above the average for /st/ cluster control words. The maximum measurement was taken from the recording of speaker 7, and the minimum measurement was taken from the recording of speaker 26. Figure 3 displays the sound wave produced by each speaker during their pronunciation of the word, while Figure 4 displays the spectrogram and intensity contour associated with the same section of speech. Note that speaker 7, with the most [s]-like center of gravity, is the top image in each

Figure 3

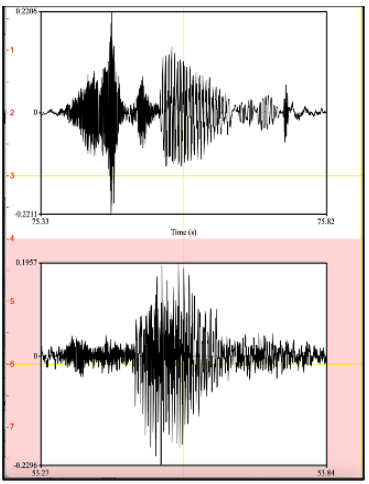
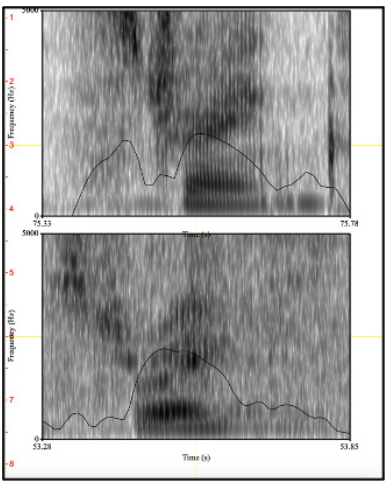


Figure 4



figure, while speaker 26, with the most [ʃ]-like center of gravity, is the bottom image.

Speaker 7's [s]-like pronunciation clearly displays a spike in intensity around the initial fricative that speaker 26's [ʃ]-like pronunciation does not. Speaker 7's spectrogram also shows activity concentrated in a much higher area than is apparent on speaker 26's spectrogram. To a listener, speaker 7's fricative more clearly gives the impression of an [s] sound, while speaker 26's is more distinctly an [ʃ]. This observation was supported by the judgment of a few lay listeners with no training in linguistics.

A similar phenomenon can be observed within the speech of a single speaker. Speaker 18, for example, produced /str/ cluster fricatives with variable centers of gravity. The highest of the word-initial /str/ group was *strength*, with a center of gravity of 6742 Hz, once again above the average for the /st/ control. The lowest was *straight*, with a center of gravity of 2571 Hz, below the average for the /ʃt/ control. Figures 5 and 6 provide visuals for each word, with *strength* included above and *straight* below. Similar observations can be made about the intensity of each fricative as in the comparison between speakers 7 and 26.

Although only two examples of many, the comparison of the same word across two speakers and of two productions of a cluster by the same speaker suggest that the distinct average of the fricative in the /str/ cluster when compared with the /st/ and /ʃt/ fricatives is due at least in in part to the variable presence

Figure 5

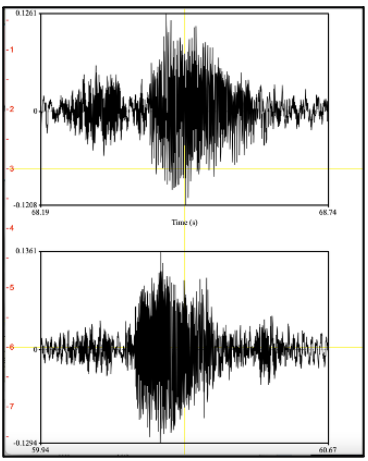
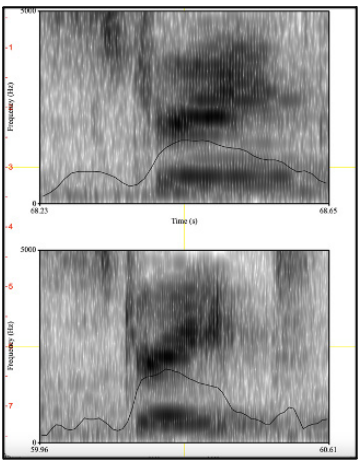


Figure 6



of palatalization in the group studied. This does not, however, rule out the possibility of intermediate fricative forms in the /str/ cluster that are consistently distinct from the fricatives in the /st/ and /ʃt/ clusters in the speech of individual participants. Further analysis could reveal that these forms are also partially responsible for the /str/ cluster's distinct center of gravity.

Conclusion

The most significant aspect of my findings is the statistically significant difference between the center of gravity measurements for the fricatives in the /st/ and /str/ clusters. This difference supports my hypothesis and is evidence for the retraction of the /str/ fricative in the speech of speakers in the American West. The presence of this feature and its effect on the acoustic properties of the fricative is in keeping with the methods and expectations set by previous research. Whether /str/ retraction is truly a phenomenon "neither regional nor dialectal" remains a matter open for debate, these findings help confirm the perceived prevalence of the feature in the United States as well as the possibility of continued spread (Shapiro, 1995).

There remains much work to be done on this topic. The speakers in this study were drawn from a large geographical area, with representation from eight states. Further work could target smaller areas to compare the prevalence of the feature across the region. Similarly, as was noted above, the participants in this study were relatively homogenous in terms of race, religion, culture, and socioeconomic background. Many of these factors can be dividing lines for sociolinguistic variance, and further work could examine the prevalence of the feature among a more diverse group and work towards uncovering the factors that correlate most strongly with its presence and spread. This is especially true of age, and as this article focused on the speech of young adults, a comparison with other age groups could yield interesting results concerning the changing prevalence of the feature across generations. The relationship between articulation and the position of the cluster also warrants further investigation, in particular the question as to whether the change in acoustic properties is at all related to a tendency for palatalization to occur in certain positions more than others.

On a broader level, the investigation of the phenomenon of /str/ retraction offers unique insight into language change and its

perception among speakers. Although documented around the world and inconsistent with standard English orthography, the [ʃtɹ] variant frequently goes unnoticed both by speakers who use it and speakers who do not. Unlike other examples of language change, including features associated with young speakers, there seems to be little stigma associated with the phenomenon. Changes that involve assimilation have sometimes been moralized as indicating laziness or carelessness, but this does not seem to be the case for [ʃtɹ] speakers, at least on a conscious level. Is the feature's prevalence across countries, classes, and other typical sociolinguistic boundaries the reason that the change has largely gone unnoticed? Or can the lack of commentary be attributed to some aspect of the English language, whether it be orthographical, acoustic, or otherwise, that dulls the average speaker's awareness of the change? The answer to these questions has the potential to touch on language at many levels, from the social to the neurological. Regardless of the cause, the variability of the phenomenon within a pool of relatively homogenous speakers—and sometimes within the speech of a singular individual—sheds light on how language change can move from the periphery to the standard in a relatively short period of time without gaining the collective awareness of the population of speakers. In this way, the study of /str/ retraction offers a glimpse into a process central to languages across the world.

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The Acquisition of Grammatical, Phonological, and Suprasegmental Features in L2 Spanish

A Literature Review

Sydney Christley

This literature review will evaluate current research about the acquisition of Spanish grammatical, phonological, and suprasegmental features that English-speaking L2 learners frequently find difficult. Those features include the perfect and imperfect aspect; specific grammatical structures such as clitic left dislocation (CLD); information focus; voice onset time (VOT); vowel perception and production; intonation, pitch and prosody; and the influence of suprasegmental features on speaker comprehensibility. Following this examination, future research will be suggested, including the effects of these features on speaker comprehensibility and accentedness, as well as teaching methods for these features.

As the population of the United States becomes increasingly diverse, the importance of Spanish-language ability in business, entertainment, and healthcare also becomes more and more important. Identifying the most difficult Spanish features to acquire would help improve teaching methods and allow English speakers to more effectively learn Spanish. This literature review will evaluate the importance of balancing grammatical and phonological competence (as well as suprasegmental features such as intonation) in language learning and identify several features of Spanish that English speakers find difficult to acquire.

Many previous studies have analyzed how English speakers acquire Spanish. Both languages share a considerable amount of wordstock from Latin; however, English is a Germanic language, and Spanish is considered to be a Romance language, meaning that while English and Spanish share many cognates and word roots, the grammatical systems are considerably different. In addition to these grammatical differences, such as verb conjugation and noun gender, the languages are quite different phonologically, and many learners face troubles when learning to pronounce sounds or sound combinations that do not exist in their native language. Decades of research have suggested the best ways for English speakers to study the grammar of Spanish, and teaching methods usually emphasize the study of these grammatical features.

While the acquisition of specific grammatical features has been thoroughly studied, a holistic approach to the topic is less common. Much more research is needed about additional grammatical features, as well as phonological features; how these features interact with each other; and how they influence speaker comprehensibility and accentedness. Additionally, more research is needed about how each feature is acquired and used by speakers at different levels of proficiency. This research would help to improve educational methods by emphasizing features that are more important in comprehension.

This literature review will examine the hypothesis that grammatical and phonological features (specifically the perfect and imperfect aspect, as well as specific grammatical structures such as clitic left dislocation (CLD), information focus, voice onset time (VOT), and vowel perception and production) have a significant effect on speaker comprehensibility and are vital

in language learning. Suprasegmental features such as intonation, pitch, and prosody are not as crucial. However, they can still affect comprehensibility to some degree and are a valuable topic of study for language learners because they can clearly mark a non-native speaker. Recent studies about each feature will be evaluated by examining their strengths, weaknesses, and overall conclusions. Finally, future research will be suggested about their effects on speaker comprehensibility and their importance in second language learning.

Acquisition of Grammatical Features

As many language learners have come to realize, English and Spanish can differ quite dramatically in their grammatical systems. Acquiring both basic and advanced grammatical features is an important step in being able to meaningfully communicate in a different language. By studying how learners acquire specific grammatical features, researchers can suggest teaching methods that will be more effective and help language learners to make progress more effectively.

Perfect and Imperfect Aspect

A common problem for English speakers learning Spanish is learning the difference between the perfect and imperfect aspects, which is most commonly seen in the preterit and imperfect past tenses. In a 2017 study, Domínguez et al. found that L2 speakers' incorrect use of the imperfect was due to negative language transfer from English. González and Quintana Hernández (2018) came to a similar conclusion about the effect of L1 interference on grammatical aspect when they evaluated how English and Dutch speakers use the perfect and imperfect aspect in Spanish. They found that the speakers' L1 corresponded with the types of errors they made and that each language affected the acquisition of aspect differently. The difficulty of acquiring the perfect and imperfect aspect is also supported by a study by Hernández (2019), who found that different lexical distinctions create biases in choosing between aspects in different proficiency levels and that there are significant differences between usage of aspect by proficiency level.

Clitic Left Dislocation

Leal et al. in 2017 studied how English speakers acquire a specific grammatical structure in Spanish called Clitic Left Dislocation (CLD), where the object is presented before the rest of the sentence. In this study the researchers found that participants could accurately predict what kind of information would be presented after the object when the object was located before the clitic. Participants could also identify when that expectation was violated. Their success rate depended on their proficiency in Spanish, indicating that awareness of CLD increases throughout the process of language learning. Leal and Slabakova (2019) also suggest that this structure is learnable and that exposure to naturalistic input is the most important factor in its acquisition. Another study from 2020 (Sequeros-Valle et al.) indicates that L2 Spanish speakers can accurately acquire this grammatical structure and use it in ways similar to those of native speakers; however, the researchers found that this ability is limited under higher processing pressure. This is only one grammatical structure, so more research would be needed to see if these results apply to other structures. However, as Leal and Slabakova (2019) note, CLD is commonly used by native speakers in vernacular speech and is therefore valuable for L2 speakers to acquire.

Information (Subject and Object) Focus

Another grammatical concept is the use of information focus. Leal et al. (2019) conducted a study that compared the way native Spanish speakers and L2 learners marked information focus (that is, the new or contrastive information in a sentence). They found that for subject focus, L2 participants could generally match the use of native speakers, but for object focus, they did not match their use as well. As is the case with object and clitic dislocation (Leal et al., 2017), the participants' ability was related to their overall Spanish proficiency. The study is particularly convincing because the researchers compared the performance of L2 learners to native speakers, allowing them to draw the conclusion that L2 learners learn to use information focus in a more native-like way over time.

Several other studies support this argument, including Alvarado (2018). According to Alvarado, advanced speakers use information focus in a more native-like way than intermediate learners, although they still make frequent errors. Lee et al. (2019) added an interesting dimension to the literature about the

acquisition of this feature by comparing how Korean and Spanish speakers acquire this feature in English; they found that when the L1 marks information focus by phrasal prominence, learners perform better in perceiving L2 sentence focus. Although this study focuses on Spanish-to-English learners instead of English-to-Spanish, understanding the opposite process can still yield valuable information.

Acquisition of Phonological Features

Another significant hurdle for English speakers is developing the ability to perceive and accurately reproduce Spanish phonology, which in many cases differs significantly from that of English. Generally, researchers assume that improvements in perception transfer to an equivalent improvement in production; however, recent studies have challenged the idea that there is a clear linear relationship.

Voice Onset Time

Voice Onset Time (VOT) measures the exact moment when voicing begins in the articulation process. In native Spanish speakers, VOT in stop obstruents is usually lower in comparison to native English speakers. Because even the difference of a few milliseconds can alter how a listener perceives a certain sound, an increased VOT in Spanish—where it should be decreased—contributes to accentedness. Nagle supports the idea that a speaker's perception of a sound must reach a certain level of accuracy before their production is affected and conducted a study (2018) to evaluate VOT in the stops /b/ and /p/. His results indicated that there was no significant relationship between perception and decreased VOT of /b/ in L2 Spanish learners, but that there was a relationship between perception of /p/ and a decreased VOT—meaning that as perception of /p/ improved, participants also improved their ability to pronounce it accurately.

Nagle studied decreased VOT of /b/ and /p/ again in a later experiment in 2019. This study does not consider the ability to perceive phonological differences but instead the change in participants' production ability over time. The results showed that participants' change in VOT during the first half of the study (approximately one semester of language instruction) could be mapped with linear and quadratic functions. They also indicated that participants' tendency to prevoice /b/ and /p/ in their native

language was associated with their tendency to prevoice the Spanish /b/. However, these results were quite inconsistent and varied widely; for example, some individuals' pronunciation of /p/ improved but not /b/. While VOT is a feature that affects native-like pronunciation, both studies face important limitations: Nagle (2018) examined only two phonemes, and Nagle (2019) did not observe consistent results. Therefore, drawing any conclusions about the importance of VOT, or the best way for L2 learners to acquire this feature, would be premature.

Vowel Perception and Production

Solon et al. (2017) examined the relationship between task complexity, language-related episodes, and the accurate production of L2 Spanish vowels. They found that giving participants more complex elicitation tasks led to an improved accuracy in perceiving and pronouncing the phoneme /e/. While this indicates there may be some value in making tasks more complex when teaching L2 learners, because participants only showed improvement in one phoneme, its efficacy is still uncertain. The study is also quite limited because it only asked participants to identify minimal pairs in information-gap map tasks, instead of measuring the acoustic qualities of the vowels.

Two studies that contradict these results deal with learners going in the opposite direction, Spanish to English, which is not the focus of this paper. However, as mentioned previously, understanding how the opposite direction works can still provide valuable information. Carlet and Souza (2018) found that participants improved their perception of English vowels but did not demonstrate a corresponding improvement in production ability; De Leeuw et al. (2021) also found that there was no significant relationship between production and perception accuracy. Further research about the link between production and perception for English-speaking L2 learners is needed to confirm the relationship.

Acquisition of Suprasegmental Features

An important consideration in language learning are suprasegmental features, which are independent of grammar and vocabulary and can extend over words and phrases. These features are somewhat "fuzzy" in definition but usually are referred to as intonation, intonation patterns, pitch, or prosody.

They can clearly mark non-native speakers and even provide hints about their L1s.

Intonation, Pitch, and Prosody

In an effort to learn more about this idea, McKinnon (2017) examined how explicitly instructing L2 Spanish learners about intonation patterns in the imperative and declarative moods affected their ability to distinguish the two moods and reproduce the patterns. In post-tests the participants changed their pitch range and intonation pattern after receiving instruction with a focus on grammar as well as intonation. Their ranges and patterns were still different from those of native speakers, but the change shows that they were attempting to mimic native speakers and reproduce their intonation. While intonation patterns may not have a significant impact on the intelligibility of a speaker, they do make a difference in others' perceptions of that speaker, and acquiring them helps a language learner to speak in a more native-like way. Seijas (2018) also confirms that this feature is learnable and can be improved by L2 speakers over time. However, this study specifically examines the effect of short-term study abroad programs, which limits its importance to this literature review, as that opportunity is not possible for the average Spanish-language learner in the United States.

The Influence of Suprasegmental Features on Comprehension

In an attempt to learn about the relationship between suprasegmental features and how native speakers perceive language learners, one recent study replicated an experiment from 1995 that evaluated how native speakers rated language learners in several categories (Huensch et al., 2021). The results clearly indicated that four specific linguistic features (phonemic errors, grammatical errors, prosody, and speech rate) were significantly related to intelligibility; however, two surprising results were found. First, there was a negative relationship between speech rate and intelligibility, meaning that as a learner spoke faster, they were less likely to be understood. Second, in lower proficiency speakers, a more native-like prosody or intonation pattern was less intelligible to native speakers. In higher proficiency speakers, the expected result occurred, and a more native-like prosody was more intelligible.

In a practical sense, these results show that beginning language learners should not focus too much attention on prosody until they reach a certain level of proficiency. Trying to improve on suprasegmental features too soon might hinder their ability to be understood, and prosodic or suprasegmental features seem to be most effective in improving that ability only after a sufficient proficiency is reached.

Conclusion

Throughout this literature review, specific features of L2 Spanish such as the perfect and imperfect aspect, Clitic Left Dislocation (CLD), information focus, Voice Onset Time (VOT), vowel perception and production, intonation, pitch, and prosody have been discussed, as well as important recent studies that add to the body of knowledge about how they are acquired by English speakers. Current research seems to support the original hypothesis for this literature review; the studies examined here suggest that these features are all important areas for L2 Spanish learners. However, in one respect, the original hypothesis was challenged—Nagle (2018) and Nagle (2019) did not provide strong evidence that VOT improved with better phonemic perception, and Carlet and Souza (2018) and De Leeuw et al. (2021) seemed to deny that vowel production improves with better vowel perception. The studies also indicate that suprasegmental features can have a significant impact on speaker comprehensibility but only at advanced levels (Huensch et al., 2021). This literature review has also shown that all of the features discussed are learnable by L2 speakers; that is, L2 learners can improve their command of the features over time and use them in a way that more closely matches native speakers.

These results have important implications for the field of second language acquisition; the command of certain features seems easier to improve than the command of others and therefore would be more useful to study. Mainly, it would be more effective for beginning language learners to focus on grammar and pronunciation before suprasegmental features such as intonation, pitch, and prosody. However, further research is needed to determine the exact ranking of the features' importance to L2 learners. Knowing which features have the most effect on speaker comprehensibility and accentedness will allow speakers to learn more effectively and increase the ability of the population of the United States to

communicate. More research is also needed to confirm the link between vowel perception and production.

As research continues, it will also become more and more important to evaluate methods for teaching Spanish and their effectiveness in regard to each feature. Knowledge of the vital importance of a feature of Spanish is useless if there is no effective way for L2 learners to improve their command of that feature. Specific information about how to use these results in the real world will make a significant difference in the way that people study Spanish. Future research should work to determine the best balance of teaching grammatical, phonological, and suprasegmental features.

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The Best Editor Is the Most Accurate Editor

Computer Text Editors Versus Human Editors

Kyla Hill

Scholars have argued about whether computers or humans edit better, but regardless of each agreement or disagreement about particulars, the scholars agree that accuracy is the most important consideration when editing text. Computer editing tools may allow for a more efficient and accurate revision process when used by someone with editing training. Research has yet to be conducted concerning the range of flexibility and subjectivity of computer editing tools; until computers can become more flexible and subjective (if they can), human editors are needed to confirm that an author's intent and meaning, as well as their grammar, syntax, spelling, and punctuation, are accurate. Therefore, the research from various scholars synthesized in this literature review supports the necessity of editing training in conjunction with the appropriate use of computer editing tools.

With a plethora of writing software available, many people wonder why anyone would pay a human editor to edit their work. Some may even consider it unnecessary to know for themselves the mechanics behind the corrections given by spelling and grammar checkers, assuming that computers can catch more errors than humans. Suggestions given by computer editing tools are merely that—suggestions—and are not the be-all and end-all. Computers can be programmed with sets of rules and scenarios but can never truly know an author's intended meaning. When a computer editing tool suggests a change, it may be technically right in some regard but may not be every time, thus requiring an organic brain rather than a programmed brain to give the final say.

One example of needing organic intuition is in style guides or house styles which may have guidelines that go against what a computer editing program has been set up to do. For example, some style guides, like BYU Broadcasting's (BYUB), state that they do not use the Oxford comma (a comma included before the last item in a list and the conjunction preceding it). Editing documents for BYUB often yields the removal of the Oxford comma, which provokes a bold red line from the computer editing software, leaving a document with more red lines rather than less after a pass of editing and disrupting, rather than aiding, the editing process.

Usage errors, too, are an area where the computer editing software may or may not catch when the wrong word is used, meaning that there may be a lack of computer-generated red lines or other notation when there should be something there. Because it takes a human to understand the intent of style guides or correct word usage, some scholars believe that editing by hand is superior to editing with digital means, but the majority of scholars say that computer editing tools can be beneficial in the revision process of writing, especially when used by those who know the rules of editing. While reasons for disagreement vary, there are three main schools of thought in literature; all of them are contingent on the idea that accuracy is the most important thing. One thing scholars discuss is that editing tools are not inherently good or bad, but their effectiveness has a strong correlation with the amount of editing training the individual using the tools has. Scholars also contrast the quality of revision processes when a peer edits an author's paper versus when the author solely uses

a computer text editor. More research should be done on how computer editing tools are improving or can be improved.

The Superiority of Editing by Hand

The capabilities of computer technology are impressive, but there are some things still better done manually, and whether editing is one of those things is up for debate; although fewer scholars agree that editing is better done manually, the argument has been made (albeit the most recent arguments for manual editing of those used in this article are from over thirty years ago and are less effective now). Hampden H. Smith (1988), who teaches in journalism and communications at Washington and Lee University, acknowledges that "some journalism educators . . . argue that pencil editing is pedagogically and vocationally superior to editing on a computer." Smith explains that this superiority of pencil editing rests on the ideas that having a physical manuscript is easier to mark up and that students must have non-computer skills when they are job-searching in writing-based fields such as journalism (p. 45). Granted, Smith's article was published in 1988, and both editing technology and career fields have changed since then. Rosemary Kowalski, a professor at the University of Michigan, published a research article in 1990 describing her findings that the biggest problems for students peer editing each other's work on the computer was relying on being able to scroll, having the program work correctly, and trusting that the computer will function quickly. For the students that participated in the research, pen and paper were more familiar to them and therefore faster and more convenient (Kowalski, 1990, p. 37). Students in 2022 are more familiar with computers than students in 1990 were; however, the point still stands that editing on a computer means relying on that computer functioning as it should (having the latest updates installed for software to run properly, for example), regardless of how well a computer text editor performs.

In 2006, almost two decades after Smith's and Kowalski's articles were written, Robert Dale from the University of Edinburgh shares thoughts arguing this same concept: "Although computers have made it easy to put words on paper, so far they have provided very little help in ensuring that the result is high-quality, error-free text" (p. 59). Dale acknowledges that computers have made aspects of writing more efficient, but he

also recognizes that users need to edit their text manually even if they use the computer checkers.

Grammar checkers evoke another argument for the case of manual editing. A professor at Austin Peay University, David L. Major, tells us that grammar checking is helpful to a degree but not recommended for less experienced writers. As with the usage problems when it comes to spelling, correct grammar is highly contingent on context. There are many aspects of editing that, even with improving technology, cannot be encoded in a program. The straightforward, mechanical aspects (such as the spelling of a word) are a little more inclined to be something programmable, but something not so straightforward, like grammar, is less so. Certainly there are grammar rules that a computer system can follow, but anything complex is harder to have a computer accurately correct. Furthermore, not everything that needs editing comes down to what is correct or incorrect; things like punctuation and formatting are often up to a "house style" or "style guide" that values consistency, which is also difficult to program a computer to do (Dale, 1990, p. 59).

Perhaps we would think to disregard these arguments that editing by hand is superior because the research is dated by over twenty years, and in the world of technology, that is a long time. However, Major finds arguments both for editing physical copies and computer editing, and his papers were written more recently (2017). Concerning editing by hand, he says, "Working with a printed page not only eliminates the red, green, and blue underlines, which provide both distraction and complacency, but it also increases the readability of the text with improved resolution, reduced glare, and a comfortably positioned page" (Major, 2010, p. 165).

The Benefit of Computer Editing Tools

Although computer editing tools may be criticized, they do have their benefits. One such benefit is that when computer editing tools take care of the simple mistakes for an author (e.g., correcting the word *hte* to *the*, a common mistake of fast typing), authors can spend their time doing more complex revisions (Hunter, 1984, p. 14). Revising one's own work, it seems, is where computer editing tools best come into play. Computer editing tools also mean "less manual labor" (Gatrell, 1991, p. 545). To compare using computer editing tools with using a dictionary,

psychologists Lauren Figueredo and Connie K. Varnhagen from the University of Alberta performed a study in which they found that all the student groups participating in their research "were able to correct more surface errors with the aid of the checkers than they were with the dictionary" (Figueredo & Varnhagen, 2006, p. 729). Computer checkers are especially helpful when authors are under a time constraint, which is often the case for students, employees, and others with deadlines. Students in another study, performed by Bridget Dalton (1991), expressed that they preferred using spell-check editing over peer-or self-editing, the main reason for that being "increased editing accuracy" (p. 123). Ellen Kanervo affirmed that accuracy is of utmost importance in her article "Electronic Editing can be Taught on Any Computer," as did Michele McClellan, editor-in-chief of *The Oregonian*, in her article, "Accuracy Must be our Journalistic Grail." These two journalists understand the importance of words and the impact they can have on readers—computer text editors can streamline the process of preparing an article. Not only will writing the article be more efficient, but it will be more accurate when computer text editors are used. Concerning computer text editors, Kanervo says, "To compete successfully in a tight job market, journalism majors need to be trained in electronic editing now even more than they need to learn the traditional copyediting skills" (p. 18).

The Importance of Being Trained in Editing

One of the most common errors is not a misspelled word but a misused word (e.g., using *effect* for *affect* or using *its* for *it's*). These words are technically spelled correctly, meaning that these individuals' spell checkers were working, but the usage is incorrect, and not all computer editing programs have been set up to look for these errors. (Even those that have been set up are not always one-hundred percent accurate.) Trained editors can evaluate whether a suggestion from a computer text editor is appropriate or not. David L. Major (2010) explains that usage problems alone can be reason enough to have someone familiar with editing take at least one pass of a document (p. 156). Major is not alone in this reasoning; Holly O'Donnell (1987) notes, "Computer text editors are not without their limitations. Some usage programs single out *utilize* and suggest *use* to replace it, but ignore *utilizes*, *utilization*, *utilizer*" (p. 364). Figueredo and

Varnhagen (2006) found that "college students' content revisions are related to their writing experience." Even with the variety of options presented by a computer text editor, college students who were more skilled in the realm of editing corrected more errors than less skilled students did (p. 722). Having editing skills remains necessary; Tim McGee and Patricia Ericsson (2002) state, point-blank, that "leaving decisions about grammar up to Microsoft is simply unacceptable." Further, they state that "we need to understand the subtleties of grammar far better than most of us do" (p. 465). There is a danger that comes from relying on spelling and grammar checkers when one is not familiar with the rules and guidelines that computer-suggested corrections are based on. In another one of his articles, Major (2017) brings to light the fact that "writers expect computer editing to work well, especially those writers who need the help most, believing that the tools will not miss errors and accepting false corrections without question" (p. 10). Computer text editors can prove to be quite useful, but it seems that the majority of scholars believe that in order for computer text editors to be the most useful, the user must have the necessary knowledge to either accept or reject the given suggestions.

The Usefulness of Computer Text Editors

Writing instructor Linda Hunter (1984) at St. Olaf College came to accept the idea that computer text editors can be useful. She "became convinced that the text editing feature of a computer can indeed be a humane and useful tool to help developing writers" (p. 13). Finding that the text editing feature could be useful for writers came from her experience working with other students using the same checker program she became familiar with—one used with the UNIX operating system. Using the checker in UNIX, one student might find a new technique for searching for a new word, and Hunter would encourage that student to share the newfound technique with the class.

In terms of spelling, computer text editors are useful. Several researchers, such as David Major, Lauren Figueredo and Connie K. Varnhagen, and Holly O'Donnell agree; however, these experts also acknowledge that spellcheckers lack skill when it comes to questions of usage. Major (2017) considers the word *defiantly*, which is a correctly spelled word but is the incorrect word to use when one means to use the word *definitely* (p. 19). Besides problems

with usage, spellcheckers actually do a great job; as O'Donnell (1987) puts it, "when a word is misspelled, it is misspelled" (p. 363). O'Donnell also acknowledges that by using a spell-check editor, writers can deal more with style and development of their ideas and less with correcting spelling, grammar, and syntax mistakes (p. 364). Figueredo and Varnhagen's research (2006) looked at whether computer text editors would affect a student's ability to revise; they found that spellcheckers "are helpful yet do not inhibit students' ability to make content revisions" (p. 721). The research shows that spellcheckers are more useful than not, regardless of one's familiarity with editing training.

Besides having a clean manuscript to manually edit, according to Major, one should also try not to rely on a computer text editor because of the limitations the checking tools have. Computers cannot grasp the meaning of sentences, making them less likely to offer correct solutions to errors (if they can even find each error). In his 2010 article, David Major says, "Good impressions of computer spelling and grammar checkers are not usually supported by the evidence" (p. 147). In an even more recent article, Major (2017) affirms that computer editing is untrustworthy (p. 9).

The Benefits of Peer Edits Over Computer Edits

Multiple scholars have evaluated writers in various grade levels, arguing that computer editing programs are more effective than peer editing. Bridget M. Dalton, for instance, wrote a dissertation on the effectiveness of peer editing versus computer editing for fourth-grade students, and Rosemary Kowalski researched the attitudes of college students concerning the assignment to either edit a paper digitally or by hand. Although each study was done in 1991 and 1990, respectively, their findings are still quite valid today. Dalton's research showed that "the spelling checker's technological limitations and difficulties of the collaboration process were the most frequently cited disadvantages" (p. vii). And even though the spelling checker considered in this dissertation is now a few decades old, what little research has been done on the improvement of spell checkers over time shows that the improvement is not as much as you might think. In a comparison of Microsoft Word 2003 to Word 2007, David L. Major (2010)

took the original text-only files from Word 2003 and opened them in Word 2007; after reviewing the flags and suggestions, he compared them to records of the results from checks with Word 2003, finding that Word improved its results in two of the twenty-one categories of errors (improved by 54% for apostrophes and 25% for usage) (p. 162). For the purposes of Dalton's study, two fourth-grade classes had been split into one of two groups: a spellcheck group and a peer edit group. After a six-week period in these groups, the spellcheck group "produced more accurately edited texts than the peer edit group," but considering the amount of missed errors that even the spelling checker did not catch, these students were only correcting about 45% of their errors. Although the results seem to be most in favor of computer edits, the results also point to the "importance of teaching children to supplement spelling checking with careful human editing" and that "peer editing for spelling is not an effective strategy for beginning writers" (Dalton, 1991, p. 74). This idea connects to the earlier discussion about the importance of being trained in editing; a peer can only catch more errors than computer editing tools can if said peer knows what to look for. Otherwise, studies like Dalton's show that the computer can find more, leading to the misconception that the computer checkers are always more accurate. O'Donnell (1987) reminds us that "some spelling checkers cannot detect misspellings that depend upon context, as do *their* and *there*" (p. 363). Citing Dennis Moore's 1983 Midwest Writing Centers Association Conference presentation titled, "What Should Computers Do in the Writing Center?," O'Donnell also writes:

> The computer can tell how long the sentences are and can calculate a readability rating according to a mathematical formula, but it cannot take into account factors far more relevant to communication. Any attempt to move from formal analysis of sentences to meaning—meaning in a human context—will encounter such difficulties. (p. 364)

Again, these scholars remind us that computers can be programmed with suggestions, logistics, and rules, but we must not trust computer editing tools to understand meanings and intentions—that is where the most errors come into play. A computer editor will never yield an emotional connection to a piece of writing. In McClellan's article, she discusses this idea, pointing to the benefit of having human editors because of their

emotional connection to accuracy; fear of career failure, competitiveness, or experiences where wrong information has done more harm than good is good motivation for an editor to strive for accuracy (McClellan, 2001, p. 58). When an author allows a peer to edit his or her document rather than relying solely on the suggestions from a computer editor, the stakes are higher, therefore encouraging more accuracy in the final work.

Gaps in the Research of Computer Checker Abilities

There are pros and cons to using computer editing tools versus live editors. It may seem as though both sides of the coin have been researched, and yet several of these scholars mention that there is further research to be done. For one, researchers David Embley of Brigham Young University and George Nagy of the Rensselaer Polytechnic Institute (1982) wrote about their intentions to do further research because they realized in the course of their study that their overall experiment about the psychology of computer text editing was intricate and complex. They realized that after acting as subjects themselves to generate an "optimal" editing sequence for their experiment, they did not even know how to characterize "optimal." Upon this realization, Embley and Nagy said, "We are unable to set a firm direction until [creating an optimal computer text editor] is accomplished." That being said, they "do not . . . expect to find major differences among editors or opportunities for significant improvement in editor design for routine tasks" (p. 154). Perhaps this confusion over the term *optimal* is what is keeping computer text editors from improving more. Two other researchers, Teresa L. Roberts and Thomas P. Moran (1983) from the Xerox Palo Alto Research Center agree that the methodology used by computer text editors "could be improved by both refinement and extension" (p. 282). More research can certainly be done on what makes a computer text editor optimal and refined, which may lead to overall increased accuracy and efficiency.

Research can also be done on how computer text editors can be used more flexibly. Any editor knows that there is more than one stage of editing, but computer text editors do not necessarily work through various stages, they seem to only edit as if a text is in its final stage (Figueredo & Varnhagen, 2006, pp. 730–731).

The revision stage could also use more research especially where collaboration is concerned; Rosemary Kowalski (1990) reminds us that there is not a lot of research about using computers in peer editing (which would be incredibly useful to know, considering an editor's job relies heavily on their communication with authors). Considering her findings, Kowalski muses that "whether or not the computer method produced peer editing superior in any way to the pen and paper method is a question still to be answered" (p. 39).

The biggest gap in research (based on each scholar's experience) concerns how flexible, subjective, and responsive computer editing tools can be—in other words, can the most human aspects of revision (correcting and revising content based on meanings and intentions) be incorporated into computer editing tools? This is where further research is needed.

Conclusion

Above all, when text needs to be edited, it ultimately matters less what kind of editor is used than how accurate the final text is. As Simon Gatrell from the University of Georgia says, "The actual text is less important than the accuracy and completeness of the work as a whole" (p. 545). Those means, according to what these scholars have said, are to use a combination of computer editing tools and human editors.

Scholars have spoken both for and against using computer editing tools, but the majority agree that computer editing tools can be beneficial in the revision process of writing especially when paired with a human editor's knowledge and understanding of not just the rules and guidelines of language but of an author's meaning and intentions. Although scholars like Hampden Smith, Rosemary Kowalski, Robert Dale, and David L. Major make valid points for editing by hand being the superior method, each of them, in addition to scholars like Lauren Figueredo and Connie K. Varnhagan, Bridget M. Dalton, Linda Hunter, Holly O'Donnell, and others, propagate their position, saying that computer editing tools can be beneficial for simplifying the revision process, useful for making spelling corrections and suggestions, and helpful in collaboration with peer editing. Computer editing tools still need improvement, especially because people have yet to figure out how to program such tools to accurately correct text based on an author's meanings and intentions. As more research is done,

computer editing tools will become more reliable; but the responsibility for accuracy in text ultimately falls on the human editor and never on the computer text editors.

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Attitudes of English L1 Adults Toward Foreign Accents of Women in the Workplace

Leah Gaush & Anna Pulley

Little research has been conducted on attitudes toward foreign accents, especially in females. This study examines monolingual attitudes about female foreign accents in the United States and their effect on employment decisions. It expected the language attitudes of adult monolingual English speakers toward L1 English-speakers to be positive and attitudes toward L2 English-speakers to be negative, resulting in the survey participants rating accented voice clips as low-level employees and not suitable for a job promotion. The findings show most L1 English females being rated positively and the L2 speakers being misidentified, resulting in mixed ratings.

A number of studies have been conducted on attitudes toward foreign accents as well as the discrimination that occurs in response to foreign accents. While much of the previous research demonstrates this discrimination, information on attitudes in the workplace is sparse. Furthermore, research done more specifically on female foreign accents is largely nonexistent. This study examined attitudes of monolingual English speakers toward female foreign accents in the United States and how they affect employment-related decisions. The information on male foreign accents is beneficial but knowing the full scope of attitudes toward male and female foreign accents can lead to the implementation of more comprehensive employer training and hiring practices in the US. As a result of this study, we expected to find that the language attitudes of adult monolingual English speakers toward female foreign accents are negative, resulting in linguistic prejudice toward them in the workplace. We anticipated L1 English speakers to be rated as high-level employees and the ones best suited for a job promotion compared to foreign-accented L2 English speakers.

Literature Review

In order to understand existing research and the implications of this study, a few definitions must be clearly delineated. First, *language attitude* or *linguistic attitude,* used interchangeably for the most part, is defined as "evaluative reactions to different language varieties" (Dragojevic, 2017). Those reactions may be positive or negative; attitudes toward standard dialects or accents are often positive, while attitudes toward anything that deviates from the perceived standard are often negative. According to the work of Marko Dragojevic in 2017, language attitudes come as a result of the cognitive processes of social categorization and stereotyping. These attitudes are developed early in life, with preference toward a speaker's own linguistic community. Although these attitudes are formed early, they generally assimilate toward the preferences of the dominant linguistic community and are changeable in response to a number of factors, including sociality, politics, and the media (Dragojevic, 2017).

The second term to understand is *linguistic prejudice*. This is colloquially defined as implicit bias based on the way an individual speaks. *Linguistic prejudice* holds a more negative connotation than *language attitude* because linguistic prejudice may lead to

linguistic discrimination or intolerance. Linguistic prejudice may occur in response to varied dialects and accents within or without the borders of an individual's home country. The type of linguistic prejudice we will examine in this study relates to foreign accents as perceived by those living in the US. Prejudice in response to accents is correlated with "heightened stereotype threat" within conflict situations in the workplace (Kim et al., 2022).

General Language Attitudes

In their 2012 thesis at William Paterson University of New Jersey, Yelena Kremenchugsky ran a study on the effect of listener background on perceptions of foreign accent severity (how heavily accented the speech is). This study effectively measured aspects of language attitude and prejudice. Among the varieties of speakers and listeners, they examined monolinguals' perceptions of foreign accent severity and concluded that in accordance with previous research, monolinguals rated foreign accent severity as much higher than bilinguals or multilinguals did (Kremenchugsky, 2012). According to Marko Dragojevic and Goatley-Soan's recent findings in 2022, a hierarchy often emerges in perceptions and evaluations of foreign accents, at least when it comes to Americans. Their research on American attitudes toward nine non-Anglo foreign accents revealed that the less stigmatized the accent, the higher they were rated in status, favorability, and comprehensibility (Dragojevic &Goatley-Soan, 2022). These studies helped us determine that listener background matters in foreign accent perception.

We then dove into research done on the effect of foreign accents in the world of American employment. Dragojevic's 2017 findings that language attitudes tend to assimilate to the preferences of the dominant linguistic community seem to be confirmed in Janin Roessel's 2019 study involving bilinguals. In this study, German L2 English speakers gave job-related presentations in English and were evaluated by other German L2 English speakers. Those who presented in strongly accented language were judged as worse job candidates than those who presented with more native English-like language, even though they were dealing with their own German-English accent (Roessel et al., 2019). Although most studies conclude foreign accents definitely have an effect on workplace perceptions and evaluations, Aaron Cargile's study published in the Journal of Employment Counseling in

2000 revealed outlying results. Individuals with nonstandard (Mandarin Chinese) American accents were not judged any more favorably or harshly for high-status job eligibility than those with standard American accents. The study concluded that foreign accents do not always matter in employment evaluations (Cargile, 2000). In such contexts, English language attitudes seemed to fall in favor of a standard American accent.

In response to the specific gap in research about the effect of foreign accents on the English job application and hiring processes, Megumi Hosoda conducted an experiment in 2010 which found Dragojevic-like language attitude hierarchies among those evaluating job applicants. French-accented and standard American-accented applicants fared much better than Japanese-accented applicants (Hosoda & Stone-Romero, 2010). Further study by Hosoda et al. in 2012 found that Hispanic-accented job applicants were rated less suitable for jobs and promotions compared to standard American-accented applicants. These studies gave way to further insights on monolingual American attitudes toward foreign accents in the workplace.

Foreign Accents of Women in the Workplace

Although there have been numerous studies describing general language attitudes toward foreign accents, specific information on monolingual English L1 adult attitudes toward foreign accents, especially accents of women in the workplace, is rather sparse. A 2006 study on the effect of accent and dialect on employability seems to be the only existing study that used all female job applicants. Furthermore, the study is not recent, and the purpose of the experiment was not to focus on gender as an effect (Carlson &McHenry, 2006). In this study, we examined the general language attitudes of English L1 adults in order to determine their language attitudes toward foreign accents in women and whether those attitudes contribute to linguistic prejudice in the workplace. We anticipate attitudes toward female foreign accents will be negative, resulting in significant linguistic discrimination relating to high-status job eligibility and job promotion.

Methodology

This study examines monolingual attitudes on female foreign accents in the United States and how they affect employment-related decisions. To test the hypothesis that attitudes toward female foreign accents would be negative, we decided to conduct a survey in which the participants judged three female speakers based solely on short voice clips. We selected a control speaker from the western United States with L1 English, a speaker from Russia with L1 Russian and L2 English, and a speaker from Mexico with L1 Spanish and L2 English. All of the selected speakers are women between the ages of twenty-one and twenty-eight who are attending Brigham Young University. No personal information or images were divulged for each speaker, to limit bias based on visual appearance. This selection criterion of controlling all nonlinguistic variables was an essential component of measuring attitudes towards the auditory samples to accurately represent potential linguistic prejudice against foreign accents among females in the workplace. It was important to control as many factors as possible to ensure accurate analytical results. The samples we received in time for the survey exhibited a difference in proficiency between the two L2 speakers. The L1 Spanish speaker has a much less noticeable accent than the L1 Russian speaker, so it is possible that the ultimate decision could be biased towards the L1 Spanish speaker since she sounds more similar to a native English speaker. We will address how we combated this difference later in this section.

Data Collection

The survey was intended for native English-speaking adults (ages eighteen and older) and was accessible for approximately forty-eight hours. We designed this semi open-ended survey using Qualtrics. Specifically, the survey consisted of three major sections: (1) participant demographic information, (2) perception of speakers, and (3) professional assessment of speakers. It was intended to take about five to seven minutes with the primary goal of gathering as much information as possible about potential linguistic prejudice towards women with foreign accents.

Following the questions gathering demographic data, each respondent was provided with two speech samples from each speaker. Each of the speakers was provided with the same instructions, as follows:

> For each of the prompts below, please record yourself using the iPhone Voice Memos app (or a similar high quality recording device). Please limit the recordings to 10 seconds or less for each prompt and record them in 2 different files. Do not share your actual name or personal information in the file. Note: We want you to sound as natural as possible by speaking like you normally would. Do not try to alter your normal patterns—just be you! Feel free to make up a name for your boss or team member if that makes it easier.
>
> Recording 1: You are a starting-level employee within a large corporation. Your boss asked you to prepare a report on your team's performance this month. In 10 seconds or less, let your boss know that you will finish the report by tonight.
>
> Recording 2: You are a team manager within a large corporation. In 10 seconds or less, ask a lower-level employee to prepare a report about the team's performance this month.

The participants in the survey were asked to determine if the speaker sounded like a low-level or high-level employee, where they believed the speaker to be from, and how comfortable they would feel having that speaker as their boss. We implemented randomization in the survey to reduce bias toward one speaker over another. At the end of the survey, the participant was then asked to select which speaker they think sounded the most qualified for a promotion and why. The voice samples were included again in this section for clarity.

To account for differences in pronunciation proficiency between the L1 Spanish and L1 Russian speakers, we thought it essential to ask where the participant believed the speaker to be from. We decided it was less important for the participants to know exactly where the speakers were from and more important to analyze the attitudes towards other cultures, as demonstrated in a study concluding that preference toward varieties of English largely depend on perceived nationality or ethnicity, not just perceived accent (Yook & Lindemann, 2013). We thought that explicitly stating the speaker's country of origin would produce less honest results due to potential shame regarding a lack of preference for specific cultures. However, it is still possible that the results were

biased due to the proficiency difference or that the results do not reflect attitudes towards the actual cultures of the speakers. These biases were accounted for in the actual analysis of the survey results.

We both posted the link to the survey on our social media platforms and sent the link to family members and classmates. Although we sent the survey to as many people as possible, it was still not a completely randomized, unbiased sample. The target population was adults living all over the United States whose native language is English. Ideally, this sample would include adults of all ages from different parts of the US, but this data was mainly composed of college-aged individuals (72.31% of participants) and more women than men (69.23% of participants). We experienced some difficulty expanding the demographic because of our personal social circles, so this should be taken into account in the analysis. A total of sixty-five individuals took the survey, and after cleaning the data (removing invalid or incomplete results, non-native speakers, underage participants, etc.), the sample size was sixty. Despite the potential bias and limited size, this sample can still be analyzed to aid in understanding general attitudes towards women with foreign accents in the workplace.

Analysis

To analyze L1 English speakers' attitudes towards female foreign accents, we downloaded the full Qualtrics report to Microsoft Excel. We systematically organized the dataset by eliminating unnecessary headers, removing columns with potentially identifying information (IP addresses, locations, etc.), condensing the data into fewer columns, filtering the results, and deleting the incomplete or invalid responses. We created additional sheets within the Excel document for each of the speakers, which included the following columns: L1 English employment level, perception as a boss, and perceived country of origin; L1 Russian employment level, perception as a boss, and perceived country of origin; L1 Spanish employment level, perception as a boss, and perceived country of origin; winner of the promotion; and the reason why they were selected. Each page only included the rows of participants that selected each candidate (A = L1 English Speaker, B = L1 Russian Speaker, or C = L1 Spanish Speaker) as a winner.

The organization helped us to facilitate comparing the counts for different speakers and types of participants, which helped us to understand the perception of females with foreign accents in the workplace. Our main focus was the final section regarding which speaker sounded the most qualified for a promotion. To best understand participant attitudes towards the speakers, it was important to also take the answers to their perceived level in the business and country/region of origin into account for each speaker. We also analyzed the vote count per speaker according to the number of languages spoken by the participants. From our analysis, we concluded that perceptions, rather than sure knowledge, of the survey participants would most influence the result of which candidate was chosen to receive a promotion.

Results

The results of the survey were different than predicted to some degree. While the L1 English speaker received the most votes for the promotion with twenty-four votes (40%), the L1 Spanish speaker was a close second with twenty-one votes (35%). The L1 Russian speaker received fifteen votes (25%), trailing the other two speakers. This distribution can be observed in Figure 1.

The Russian speaker received less votes overall than both of the other speakers. To account for the potential bias from proficiency difference between the two L2 English speakers, we first analyzed the participants' perceptions of each speaker's country of origin. All sixty survey respondents were able to identify the L1 English speaker's country of origin: the United States. (Note: All sixty of the participants who sent in complete results were from the United States, so it is unsurprising that there was no trouble in identifying the native speaker.) The other two speakers were much harder for the participants to identify. We decided to compare the perceived country for each L2 English speaker, split between those who did not select that participant as the candidate for the promotion and those who did select that speaker.

Nationality Perception of L1 Russian Speaker

We will first discuss the results for the Russian speaker. Overall, forty out of forty-five participants who did not vote for the Russian speaker answered where they believed her to be from. The results are found in Figure 2.

Figure 1

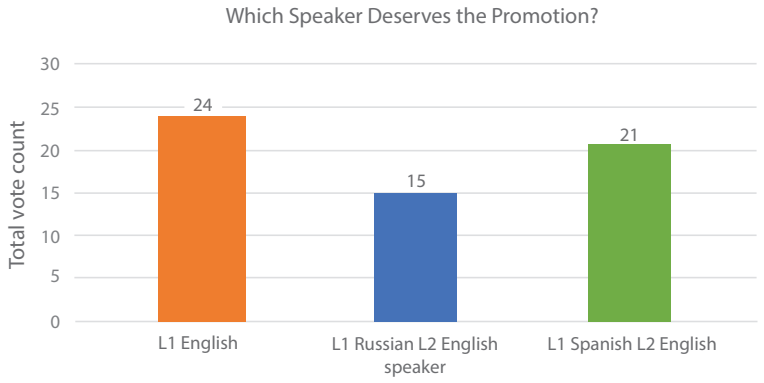


Figure 2

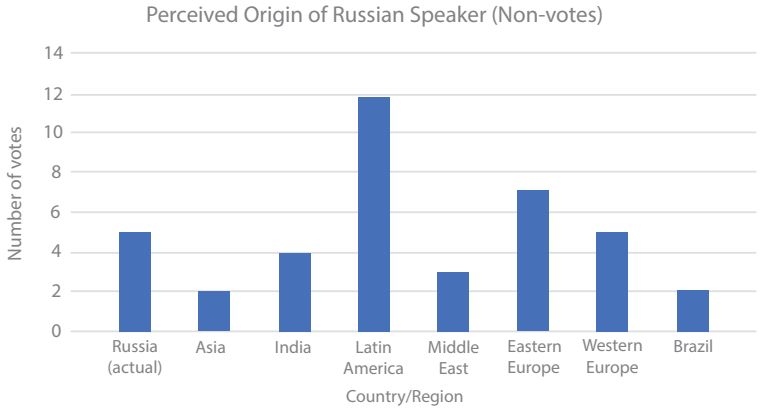
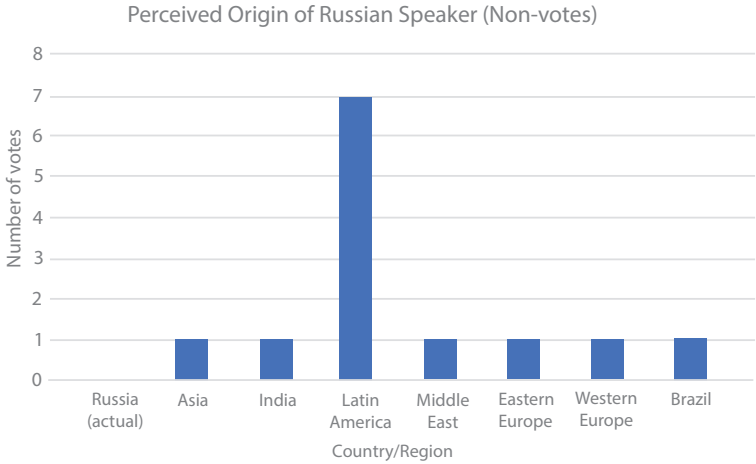


Figure 3



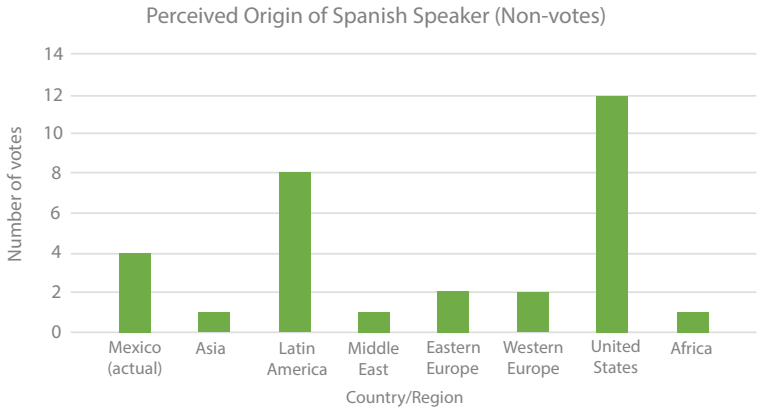
Note: The scales for each of the graphs are different, according to total vote number differences.

Interestingly, only five participants were able to identify the L1 Russian speaker as a native Russian. The majority of non-voters believed that she was from Latin America (twelve) or Eastern Europe (seven), possibly revealing a bias against accented speech from these regions, although other areas of the world are also represented.

The participants who selected the L1 Russian speaker as the most qualified candidate had different perceptions of where she was from. Thirteen out of the fifteen voters' perceptions are represented in Figure 3.

Seven out of the thirteen voters represented in Figure 3 believed that the speaker was from Latin America, and just one voter guessed each of the other regions. Interestingly, none of the voters believed that she was from Russia, and just one guessed Eastern Europe (the closest geographic guess). Although these participants voted for the L1 Russian speaker, their perception of her shows a preference for speakers from Latin America rather than Russia. It is possible that there is a bias against Russian accents, although American adults might not be very proficient in identifying this accent. It would be interesting to see any differing results if the national identity of the speakers had been shared.

Figure 4



Nationality Perception of L1 Spanish Speaker

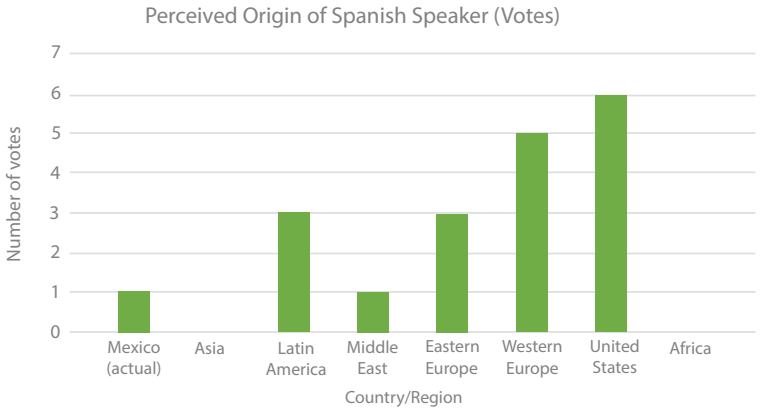
The L1 Spanish speaker's perceived nationality was less straightforward. Only thirty-one out of thirty-nine participants who did not vote for the L1 Spanish speaker included their prediction of her country of origin. The results are exhibited in Figure 4.

Four of the participants were able to identify this speaker as a native Mexican, although eight guessed either the region of Latin America or other countries within the region. Interestingly, 38.7 percent of participants guessed that this speaker was also an L1 English speaker from the United States. Some participants guessed that she was from a region in the US with high levels of Hispanic populations, whereas others believed that she was utilizing a Southern US variation. It is possible that this speaker's high proficiency level combined with the high number of Spanish speakers in the US led participants to believe that she was from the US.

The participants who voted for the L1 Spanish speaker had a different distribution for the perceived nationality. Interestingly, there was more variation and more incorrect guesses for those who voted for this speaker (nineteen out of twenty-one participants answered the prompt in the survey). The distribution is evident in Figure 5.

Of the nineteen voters, eleven believed that the speaker was from the United States or Western Europe. It is unsurprising that

Figure 5



these participants selected this speaker, as other studies have indicated that Americans rate American and Western European accents highly. Only one participant was able to correctly identify this speaker as a native Mexican, and three participants were close with guessing other Latin American countries. It is possible that this data suggests a preference for American or European speech over Spanish-accented speech, as perceived by the listener. It would be interesting to see a study with a larger sample population and observe if the results are similar.

Perceived Employment Level

After comparing the perceived nationalities of each speaker, we decided to compare the ratings of perceived employment level per speaker. We were curious to see if the perceived employment level of each speaker influenced the participants' ultimate decision of who deserved a promotion. We split the dataset according to the selected speaker and took counts for how many of those participants rated each speaker as a high-level versus low-level employee. As we will refer to Figure 6 as part of this analysis, it is included on the next page.

The participants who voted for the L1 English speaker and L1 Russian speaker followed a similar pattern. Both sets of voters rated their chosen speaker as a higher-level employee when compared with the other speakers. For the L1 English speaker, seventy-five percent of participants believed her to be a high-level employee, whereas only 45.8 percent thought the L1 Russian speaker was high and a mere 41.7 percent thought the

Figure 6

L1 English (L1E), L1 Russian (L1R), L1 Spanish (L1S), High-level (High), Low-level (Low)

A (24)

L1E High	L1E Low	L1R High	L1R Low	L1S High	L1S Low
18	6	11	**13**	10	**14**
0.75	0.25	0.458333	**0.541667**	0.416667	**0.583333**

B (15)

L1E High	L1E Low	L1R High	L1R Low	L1S High	L1S Low
5	**10**	***12***	3	7	**8**
0.333333	**0.666667**	***0.8***	0.2	0.466667	**0.533333**

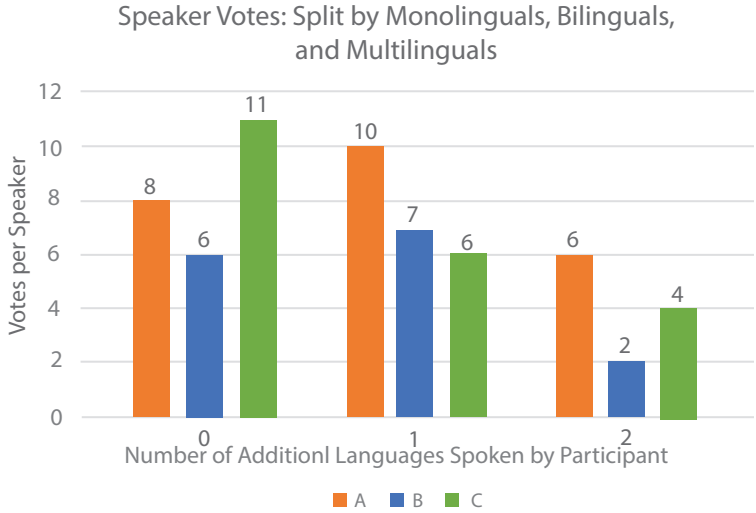
C (21)

L1E High	L1E Low	L1R High	L1R Low	L1S High	L1S Low
7	**14**	10	**11**	9	***12***
0.333333	**0.666667**	0.47619	**0.52381**	0.428571	***0.571429***

L1 Spanish speaker was high-level. For the L1 Russian speaker, eighty percent of participants believed that she was a high-level employee, with only 33.3 percent of voters believing the L1 English speaker to be high-level and 46.7 percent thinking that the L1 Spanish speaker was high-level. It is interesting to see a similar trend between both types of participants. Those who selected the L1 Spanish speaker exhibited a different pattern. These participants believed that all of the speakers were low-level employees. About 57.1 percent of voters thought that the L1 Spanish speaker was low-level, 66.7 percent believed that the L1 English speaker was low-level, and 52.4 percent thought that the L1 Russian speaker was low-level. Although these participants selected a speaker they believed to be low-level as the candidate for the promotion, they still followed the pattern of rating the non-selected speakers as low-level. These results were different than expected but do not contradict general patterns exhibited by those who selected the other candidates.

Participant Linguistic Background

Figure 7



Note: There were a different number of participants in each group, so it is important to note general trends rather than compare exact amounts of votes per speaker.

Finally, we analyzed the distribution of votes per speaker according to the linguistic background of the participants. We separated the participants into the categories of monolinguals, bilinguals, and multilinguals. The results, found in Figure 7, were fascinating.

We would expect a more consistent pattern between the three groups; however, it appears that language experience could have an impact on the perception of foreign accents. Monolingual speakers were the only group that favored the L1 Spanish speaker over the L1 English speaker. Perhaps the monolingual group's limited experience with other languages also limited their ability to discern accents of high-proficiency L2 English speakers. Only twenty four percent of this group voted for the lower proficiency L2 English speaker, compared with forty-four percent voting for the higher proficiency L2 English speaker.

The bilingual group favored the L1 English speaker (43.5%) over the L2 English speakers. Interestingly, this group was more split between the L2 English speakers, with one vote higher for the L1 Russian (30.4%) over the L1 Spanish speaker (26.1%). It is possible that this group's experience with one additional language helped them to identify foreign accents and influenced their overall decision.

Interestingly, the multilingual group exhibited a different pattern than the bilingual group. While they still favored the L1 English speaker (50% of votes) over the L1 Russian (16.7%) and the L1 Spanish (33.3%) speaker, there was a preference for the higher proficiency L2 English speaker over the lower proficiency one. It is surprising that as experience with languages increases the preference for the L1 English speaker also increased for this sample. It is important to note that the limited sampling size could exhibit some bias in these results, so a study with a larger sample would be ideal.

Conclusion

The study aimed to examine L1 English monolingual adult attitudes towards female foreign accents in the United States and how these attitudes affect employment-related decisions. We expected to find English speaking monolinguals in the US rating L2 English speakers as low-level employees versus high-level ones, and for them to select the L1 English speaker as the employee best suited for a promotion. Our findings were complex and only partially proved our hypothesis. Forty percent of participants voted the L1 English speaker most suitable for a job promotion, and of those who voted them most suitable, seventy-five percent rated them as sounding like a high-level employee.

Rather than just rely on potential prejudice based on accent alone, we decided to include perceptions of nationality in our study, as these contribute largely to language attitudes (Yook & Lindemann, 2013), and found that all participants were able to correctly identify the L1 English speaker's US nationality, but the majority of participants were not able to correctly identify the L2 English speakers' nationalities. This misidentification of nationality implies a participant's lack of observation or education. If a participant is unable to correctly identify a speaker's nationality based on linguistic samples like the voice clips used, it can be assumed that some aspect(s) of their linguistic abilities or skills are skewed, resulting in a linguistic bias or prejudice.

Because our study utilized a limited sample size and background, further study using more participants of various ages is essential to understand the true implications of this study. Based on the participants' perceptions of each speaker's origin, we do not truly know monolinguals' language attitudes toward specifically Russian and Mexican accents in females, but it is valid to say that

perceptions of nationality do affect language attitudes. A listener's linguistic background may also have an effect on language attitudes.

Further study on attitudes and prejudices toward female foreign accents in the U.S. could lead to the implementation of more comprehensive employer training, hiring practices, and individual bias awareness. As females in the US are not paid the same amount as males, further related study may work to potentially decrease the wage gap or result in otherwise equal treatment and less discrimination toward females and female L2 English speakers in the workplace. As a result of conducting this study, we can reaffirm Yook and Lindemann's conclusions that perception of speaker nationality contributes to linguistics prejudice to a greater degree than knowledge of speaker nationality does. This study confirmed that linguistic attitudes and/or personal linguistic backgrounds affect employment-related decisions such as ranking or determining employee status and awarding promotions. Bringing this knowledge of linguistic attitudes and bias to the workplace may lead to gradual elimination of negative linguistic attitudes or at least bring awareness to how negative attitudes may affect work-related decisions impacting women in the workplace.

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Use of Spanish Code-Switching in *In the Heights*

Monica Privette-Black

This article uses a frequency analysis of Spanish and English, further divided by complete or partial Spanish utterances, spoken by each character throughout the musical In the Heights. *The data concludes that the musical's code-switching is a subconscious result of a bilingual's relationship to their community and how they identify within it. More specifically, there is a correlation between each character's overall percentage of Spanish words spoken and position in a Hispanic neighborhood. The conscious use of code-switching throughout the musical* In the Heights *can be used to understand bilingualism and code-switching for unscripted communication as well.*

Many recent English media productions have blurred the lines between English and Spanish. Specifically, movies, Broadway productions, and TV shows have characters who alternate between English and Spanish, an element known as code-switching, as though the audience can understand both. To the untrained ear, the use of Spanish and English is seemingly random and intermittent. However, those who understand that language is a vital element of one's identity have begun to question what inspires the language of an utterance and whether bilinguals code-switch for specific speech acts.

Of the many bilingual productions, Lin Manuel Miranda's *In the Heights* has caught the world's attention as a synthesis of both English and Spanish language and culture. I hypothesize that code-switching between English and Spanish throughout *In the Heights* has two main purposes: The first, to connect the community by a shared linguistic identity, and the second, to show solidarity for the injustices that Latino and Afro-Latino communities face in the United States. I aim to analyze the frequency of Spanish utterances by character and the semantic purpose of each code-switch. In doing so, I intend to anatomize the Spanish language used and its intentions.

Literature Review

Bilingual Attitude

Language comes with personal meaning, identity, and pride (Crystal, 2002). Within that context, bilingualism is a complicated phenomenon, and each speaker falls differently on a spectrum of usage, fluency, and register specialty. Crystal, an expert in language death, revitalization, and maintenance, has defined bilingualism for heritage speakers, those who have naturally acquired a language strictly in the home setting. One language exists for purposes of identity and the other for intelligibility (Crystal, 2002). Usually heritage bilinguals use their second language (L2) for primarily professional activities, such as work, international travel, and taxes. In contrast, use of the first language (L1) typically revolves around personal identity and social relationships with those in that same language in-group.

On the other hand, recent studies showed that some bilinguals are in the opposite position, specifically that their L1 (first or heritage language) is the lingua franca, and they have learned the

local L2 as a result of community affiliation. In a focus group made up of Spanish L2 speakers in the US, the participants reported that speaking Spanish connected them to their communities. They considered themselves heritage speakers because they learned and maintained their Spanish skills to fit in socially with those they interacted with, even though a few of the subjects were not ethnically Hispanic. When describing one of their relationships with bilingualism and biculturalism, they said, "It isn't really a Spanish culture. It's just *my* culture . . . And you don't really think about your culture when you're in the midst of it" (DeFeo, 2017, p. 10). This study suggests that people's connection to community and therefore their need for functional linguistic abilities within their community is more powerful than ethnic or cultural identity.

These polar viewpoints illustrate that bilingualism and code-switching are used for communicating with one's closest circles, with one's community, and with the world around. Whether that is through a first or a second language, it is clear that bilingualism is a tool for people to connect in powerful and unifying ways.

Code-Switching

Currently, around fifty percent of the general world population and twenty percent of Americans are bilingual. In the United States, Spanish is the most common spoken second language with millions of Spanish-English bilinguals living across the country (Mathews, 2019). Many bilingual people participate in code-switching, which can be described as inserting words of another language into the grammar structure of the first. Code-switching is extremely common among bilinguals. As previously mentioned, many suppose that the alternation between two languages within a conversation has a specific purpose and intent. By studying the intended and unintended motives for code-switching, the US and other world communities can better understand the massive bilingual subculture and gain insight into common uses of one's heritage or cultural language.

Code-switching is complicated to pragmatically analyze in natural speech. It can be a mindless act or a powerful tool for speakers. An important note is that meaningful code-switching is not a result of forgetting nor a lack of linguistic proficiency. The generally accepted stance comes from a study in the late 1990s

that found code-switching to be a random act determined only by the speaker (Auer, 1999). This perspective has been largely unchallenged, and the literature pertaining to it lacks studies about specific speech acts purposely carried out in one language. Some, however, would argue that speakers have motives behind code-switching based on context and speech act—even subconsciously.

So, what does a bilingual speaker think when switching between languages? Could there be a political or social agenda behind purposeful switching? A recent study reviewed social media comments made in English and Spanish on posts with related topics to analyze the use of Spanish in the face of immigrant stress and other cases of racial discrimination (Muñoz & Amezcua, 2019). It followed up this analysis with surveying bilinguals living in the US. One survey respondent answered that she felt empowered by speaking Spanish during times of political tension and negative attitudes towards Spanish speakers. Another mentioned that facing discrimination is personally the most important time to speak Spanish and embrace one's culture of heritage. Most importantly, none of the heritage speakers were afraid of speaking Spanish, even when they could have faced personal discrimination. From this study, one can see the relationship that many Spanish heritage speakers have with their language and how Spanish is a force of ethnic strength that they can draw upon in certain circumstances.

Unlike in speech, code-switching in writing is done deliberately and with an artistic purpose. A detailed discourse analysis of scripted productions in English and Spanish claimed that both languages have their own distinct purpose: English is to be used in formal settings and Spanish in informal settings. Additionally, writers choose to incorporate elements of Spanish identity for a specifically referenced country as a way of emphasizing that culture within the scope of American majority culture (Carra, 2019). The use of code-switching can strategically build a community that restricts nonspeakers of the language and creates a safe place for minority groups to be understood and valued.

Broadway

The use of Spanish in an English production is not a feature found only in Miranda's work. This code-switching, which is not considered to be Spanglish but a more elevated method of displaying

biculturalism, is increasingly common in American films, Broadway shows, and TV. It is seen in the musical *West Side Story* and is becoming increasingly more common.

Recently, Rua conducted a qualitative comparison study that also examined the use of Spanish in *In the Heights* compared with the Spanish used in the second edition of *West Side Story*. This study found that *West Side Story* overused Spanish, while *In the Heights* used it in correct proportion to English. The code-switching in *In the Heights* was concise and effective. Spanish in *In the Heights* was used throughout the musical to invite the listener into the speaker's world to refer to deity and to build a closed community for Spanish speakers (Rua, 2020). These specific speech contexts successfully created an on-stage community that allowed only other bilingual speakers in. This study serves as the outline for this article's methodology.

This research project will include specific evidence of the frequency of each code-switching motive, numerical data, and a holistic review of each character by diving deeper into the pragmatics than Rua's study. Although the project has a small sample size, it can potentially imply similar uses for code-switching in English media productions or even natural language. If there is no significant semantic use, this stands to support the thesis that code-switching is completely random. I will also analyze Spanish use by character to investigate overall community relationships. The remainder of this article will include a detailed methodology, results, implications, and a final conclusion.

In the Heights Background

In the Heights is a fictional portrayal of Washington Heights, an actual neighborhood north of Manhattan that had previously been composed of mainly Caribbean Hispanic locals and newcomers. The musical tells the story of the community in Washington Heights and their struggles with gentrification, living with outdated infrastructure, and belonging in American culture. All of the characters have a unique background and difficulties with finding happiness and their place in a close-knit but changing community.

Usnavi, the main character, owns a bodega in town, and Vanessa, Usnavi's love interest, works at the salon. Sonny is Usnavi's cousin and a trendy teen. The Rosarios are a family in town whose oldest daughter, Nina, has just returned from her first year at Stanford, where she faced bigotry and felt like an

outcast as a Latina. Kevin Rosario, the father of the family, owns a dispatch company where Benny, the only non-Hispanic character and Nina's love interest, works. They all attend dinner parties at the home of Abuela Claudia, a Cuban-born immigrant whom the neighborhood has adopted as a grandma. The other characters in the community include Piraguero—a man who sells shaved ice—and the gossiping ladies from the salon, Daniela and Carla.

All of the characters besides Benny speak Spanish and refer to their heritage, country, and culture. All of the characters also speak English fluently, and nearly all have no distinguishable accent. Therefore, the code-switching does not correlate to linguistic comprehension, but a larger rhetoric. Although studies have been done that confirm using one's L1 is often a result of lower cognition due to emotional stimulation, this linguistic examination will challenge that theory and propose instead that there are purposeful pragmatic uses of one's heritage language, realized or not (Williams et al., 2020).

In order to analyze code-switching into Spanish, I used an open-source script from the original Broadway version of *In the Heights*. I created my own data set, divided into two sections: frequency and speech acts. The frequency section includes counts of Spanish words, English words, and total words by each character. This section also houses the analysis of frequency of Spanish, frequency of complete (Spanish only) phrases, and frequency of mixed (English and Spanish in the same sentence) phrases by characters for further exploration. My *speech act* data set is a qualitative conversational analysis. Each Spanish utterance is listed along with the character who spoke it, whether it is complete or mixed, and the context. The list of contexts includes references to (1) religion, (2) national pride, (3) an item's Spanish name, (4) community relationships, (5) gossip, (6) general conversation, (7) language learning, (8) exclusion, and (9) intelligibility. Categories 1–7 describe the specific contexts in which the Spanish was used in conversation; Categories 8–9 describe when Spanish is used to exclude a non-Spanish speaker from the conversation or because English is not understood by the listener. Each category is mutually-exclusive and all are comprehensively exhaustive. I collected this data without peer review or outside opinion.

This methodology followed the framework of Wolfson and Manes (1980), which analyzed compliments and how they are used in social interactions. In the same way, I analyzed code-switching,

which is a strategic speech act that, like a compliment, is packed with nuance and culture, similar to the previously mentioned analysis by Rua (2020).

Results

Figure 1 gives insight into the overall Spanish use as well as different types of Spanish use. Many uses of mixed Spanish phrases are for rhyming and are not as strong as the complete Spanish phrases. Nearly all of the characters use complete and mixed utterances evenly. However, the four characters that use more complete Spanish phrases than the rest are Piraguero, Nina, Carla, and the ensemble.

Piraguero speaks more Spanish than the other characters and is seen as an archetypal character. He is the first on screen and maintains his strong ties to the Spanish language to represent the Washington Heights community and even those community members who have not learned Spanish yet. Nina's use of predominantly complete Spanish utterances is due to her using

Figure 1

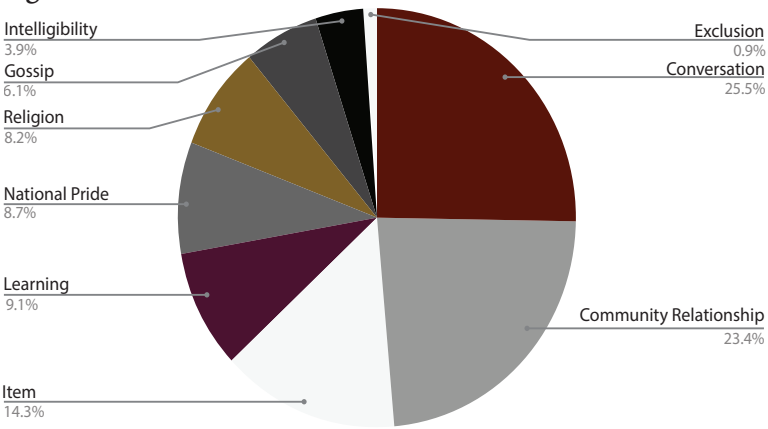
	Percentage of Spanish spoken	Percentage of mixed Spanish/English phrases
Usnavi de la Vega	2.13%	39%
Nina Rosario	4.89%	9%
Kevin Rosario	4.87%	65%
Camila Rosario	4.34%	50%
Benny	1.27%	36%
Vanessa	1.62%	45%
Sonny	0.86%	50%
Abuela Claudia	14%	33%
Daniela	12.82%	36%
Carla	9.1%	29%
Graffiti Pete	0%	0%
Piraguero	44.1%	23%
Ensemble	27.71%	7%

the language mostly for intelligibility or teaching the language, which both only require Spanish. Carla portrays the stereotype of someone who has almost mastered English, but isn't very comfortable with it. She makes vocabulary mistakes in English and uses mostly complete Spanish utterances, which seems to show that she is more comfortable with Spanish. Lastly, the ensemble uses mostly complete phrases as they are drawing on the contexts and connections of their community, which is bound by a common language and culture.

The majority of the characters (61%) use Spanish at least four percent of the time. Usnavi, Benny, Vanessa, Sonny, and Graffiti Pete are exceptions to this majority. This study will further discuss the implications for these anomalies.

Similar to the findings from a previous analysis of *In the Heights*, I found that Spanish is most commonly used when in contexts of general everyday conversation—in terms of the community or relationships within it—and when an item's name is given in Spanish (see Figure 2). Some may even consider using an item's name in Spanish an extension of the community relationship category (Rua, 2020). It is important to note that the Spanish in a learning context comes specifically from the relationship between Nina and Benny, and the context of national pride is almost exclusively from one musical number about pride and dancing. Additionally, these contexts often emerge from the

Figure 2



Note: This does not include repeated phrases but classifies them as one instance of specific context.

usage of Spanish by single characters, such as a religious context for Abuela Claudia and gossip for Daniela and Carla.

Overall, my results were more meaningful in terms of Spanish frequency by character than in terms of semantic context. I had hypothesized for Spanish to be used more in contexts of solidarity, but the semantic analysis was too objective to determine whether or not a reference to the community relationship was responding to injustices and gentrification or not.

Discussion

Although the *In the Heights* script takes artistic liberties, it is still a legitimate representation of the Hispanic, namely Dominican and Puerto Rican, community of Washington Heights. Likewise, although the characters are fictional, their experiences and the overall narrative of the story give a true representation of the community.

A previous analysis of the series *Buffy the Vampire Slayer* used data based on each character's usage of unique linguistic features (e.g. —ly) to compare their relationship with the in-group (Mandala, 2007). This analysis mirrors the implications of the *In the Heights* characters' Spanish usage. Similar to Mandala's study, I examined the relationship between a personal sense of belonging to the Washington Heights bilingual community and use of Spanish. As shown in Figure 1, the Spanish spoken by Nina, Benny, Sonny, Usnavi, and Graffiti Pete is unlike the Spanish spoken by the other characters. Likewise, the correlation between their relationship with the community and their Spanish usage is strong because these characters do not feel they belong in their neighborhood.

Nina is seen as the one who "made it out" of the community and succeeded in going to university. This character sings about the pressure she has felt her entire life to achieve more than what the Heights is able to offer her, which is seen as she tries to rise to a higher social class and get an Ivy League education. Ultimately, her sparse Spanish usage most likely comes from her feelings of dissatisfaction with and distance from her community.

Benny is the only non-Hispanic main character. As a result, he experiences moments of exclusion the community because he doesn't speak their language. Unlike the Spanish-speaking characters, he can't understand what the others mean when

they code-switch. However, he does spend time trying to learn and practice Spanish, which comprises his small percentage of Spanish usage.

Sonny is afraid of his future and limitations as an undocumented youth. He uses more English slang and Black English than Spanish throughout the musical, which can be attributed to his attempt to blend in with the larger monolingual English community and other teenagers his age. Usnavi also is conflicted with his community identity. He wants to return to the Dominican Republic but also feels like he has a home and a family in Washington Heights. He is a bilingual individual who uses English more than Spanish perhaps to show his proud status as an American or in accordance with feeling guilty for wanting to leave his community. As for Graffiti Pete, the script lacks personal information about him and his motives for not using Spanish, although he understands and responds to it in a few contexts.

The context of the Spanish name for an item, the third most common context in the study, is also known as CSI (Culture-Specific Items in Translation). In the musical, this concept focuses on educating the audience about culture or language by allowing them to experience it (Rua, 2020). In general, Spanish in *In the Heights* is used in a variety of speech acts and contexts but most importantly as a means to communicate and construct a strong speech community. It connects people, binds a character to an in-group, and unifies everyone in the neighborhood. On the other hand, it also shuts out those that cannot speak it or those who are trying to separate themselves from the Washington Heights community.

There were several struggles and limitations to this study. *In the Heights* is not based on natural speech and has elements of artistic liberty instead of purposeful code-switching. It also not only has code-switching but Spanglish, which made documenting the Spanish instances more complicated. For example, the phrase *muñeca's* was used, which is a combination of English possessive morphology and *muñeca*, the Spanish word for doll. There were other similar instances throughout the musical. Counting words like *abuela* (a title) and *bodega* (the generic word from Spanish origin used for small shops in New York) resulted in subjective conclusions and data collection. Even more difficult, however, was conducting qualitative analysis based on the pragmatic use of Spanish. It also resulted in my best judgment based on

the characters, setting, and greater background. This is not a peer-reviewed article and all research was completed by a single researcher.

This study gained insights into Spanish usage by analyzing the character in relation to the community as a whole. People are more likely to speak a language they share with a community that they are proud and comfortable being a member of. However, deeper and more specific analysis can be done with this data set to produce more insights on the topic of speech acts or semantic purposes behind code-switching. Similar studies should also be done with naturalistic speech settings to better understand a heritage language as a tool for ethnic power, heritage, and unity.

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Appendix

	Spanish Words	English Words
Usnavi de la Visa	69	3164
Nina Rosario	92	1789
Kevin Rosario	49	404
Camila Rosario	35	771
Benny	23	1789
Vanessa	20	1215
Sonny	7	804
Abuela Claudia	119	731
Daniela	110	748
Carla	33	331
Graffiti Pete	0	178
Piraguero	153	194
Ensemble	233	608

	Total Words	Frequency of Spanish words
Usnavi de la Visa	2322	0.02134240643
Nina Rosario	1881	0.04891015417
Kevin Rosario	1006	0.04870775348
Camila Rosario	806	0.04342431762
Benny	1812	0.01269315673
Vanessa	1236	0.01618122977
Sonny	811	0.008631319359
Abuela Claudia	850	0.14
Daniela	858	0.1282051282
Carla	364	0.09065934066
Graffiti Pete	178	0
Piraguero	347	0.4409221902
Ensemble	841	0.2770511296

	Percentage of Spanish spoken	Total phrases in Spanish
Usnavi de la Visa	2.13%	28
Nina Rosario	4.89%	35
Kevin Rosario	4.87%	23
Camila Rosario	4.34%	18
Benny	1.27%	11
Vanessa	1.62%	11
Sonny	0.86%	4
Abuela Claudia	14%	42
Daniela	12.82%	33
Carla	9.1%	17
Graffiti Pete	0%	0
Piraguero	44.1%	52
Ensemble	27.71%	88

	Percentage of complete Spanish phrases	Percentage of mixed Spanish phrases
Usnavi de la Visa	61%	39%
Nina Rosario	91%	9%
Kevin Rosario	35%	65%
Camila Rosario	50%	50%
Benny	64%	36%
Vanessa	55%	45%
Sonny	50%	50%
Abuela Claudia	67%	33%
Daniela	64%	36%
Carla	71%	29%
Graffiti Pete	0%	0%
Piraguero	77%	23%
Ensemble	93%	7%