A Thesis

entitled

Phrasal Stress and Presupposition: The Case of Black Lives Matter

by

Sarah Linser

Submitted to the Graduate Faculty as partial fulfillment of the requirements for the

Master of Arts Degree in English

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An Abstract of

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This research attempts to determine whether or not stress placement can be used to predict an individual's attitude via theories of contrastive stress. The placement of stress within a phrase is typically given to new information. With regards to the Black Lives Matter movement, this would suggest that when the phrase "black lives *matter*" is uttered, the stress on "matter" indicates the belief that black lives have not mattered in the past, and they should. "*Black* lives matter," however, with stress on "black," suggests the belief that black lives are more important than the lives of non-blacks. Data was taken from the streaming site YouTube to analyze instances of people saying "black lives matter" and record stress placement. The videos themselves were used to determine individual attitudes, which were then compared to their stress placement. The research had no significant findings regarding the relationship between stress and attitude; however, this was probably due to the oversimplification of what was revealed to be a much more complicated process.

Dedicated to my parents, William and Mi Cha Linser, who were my first teachers and supporters, and my brother, Alex, whose birthday I may have neglected because it coincided with the deadline for this very thesis. I hope this makes up for it.

Acknowledgements

I would like to express the deepest gratitude to my committee for their efforts toward this research. To Dr. Mungo, I know you were already on several other committees when I first approached you, and I'm forever grateful you reconsidered joining mine. To Dr. Jasper, thank you for being so forthcoming. It was worth waiting those 15 minutes outside your office even though the sign lied and you weren't actually running experiments at the time. Thanks to both of you for addressing concerns I wouldn't have thought of and for persevering with me even throughout the summer.

To my committee chair, Dr. Coleman, thank you for your invaluable guidance and tolerating my endless questions. It seems not so long ago I was an undergraduate sitting in your Linguistic Principles class and writing it was Chomsky who founded hard-science linguistics, which I'm sure you've forgotten, but I'm reminding you of out of poor judgment like when I made terrible jokes on my slideshow presentations. Unfortunately, you had to deal with me for an additional two years in graduate school, but at least now I won't be further prolonging your retirement. Thanks for giving me your time when you could've given up your position as my committee chair instead.

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BLM.....Black Lives Matter

# Chapter One

## Introduction

In 2012, a police officer shot and killed a 17-year-old unarmed black boy named Trayvon Martin. The officer was found innocent and thus acquitted of murder. This verdict sparked a nationwide debate on race relations and led to the Black Lives Matter movement, founded in 2013 by three black women. On the official Black Lives Matter site, the movement is defined as "an ideological and political intervention in a world where Black lives are systematically and intentionally targeted for demise. It is an affirmation of Black folks' humanity, our contributions to this society, and our resilience in the face of deadly oppression" ("About," n.d.). Additionally, their guiding principles, as listed on their site, include the following: diversity, restorative justice, globalism, queer affirming, unapologetically black, collective value, empathy, loving engagement, transgender affirming, black villages, black women, black families, and intergenerational ("What we believe," n.d.). Black Lives Matter acknowledges the fact that all lives matter; however, they want to bring awareness to the unjust treatment blacks have endured, as if black lives did not matter.

This movement has spawned a range of reactions criticizing the implications of its name largely due to an incorrect interpretation of both it and what is meant when blacks utter "black lives matter." Instead of hearing the intended message of "black lives *matter*," which suggests black lives are just as important as others, some whites hear "*black* lives matter," which suggests that black lives are more significant than the lives of others. The same is done by whites when interpreting the name Black Lives Matter. Thus, the phrase is commonly countered with "*all* lives matter," "*white* lives matter," or "*blue*

lives matter," in an attempt to correct the idea the hearer in this case attributes to the speaker that black lives are more important. This "correction" in the form of "*all* lives matter" is then construed by blacks as a casual dismissal of the issues at hand and a failure to acknowledge that blacks have been oppressed and treated unfairly where their white counterparts have not.

Therefore, the placement of stress in "black lives matter" has been a point of interest, as the present study is concerned with contrastive stress in particular. Ladefoged (2014) defines stress in general as "something a speaker does in one part of an utterance relative to another" (p. 119). In other words, stress is more than mere "loudness"; it is a combination of elements, including pitch and intonation, though Bosch and Sandt (1998) state that previous work found pitch prominence to be the "single most prevalent" (p. 15) factor when determining stress. Similarly, Quirk, Greenbaum, Leech, and Svartvik (1985) refer to pitch as the "focus device of contrastive stress" (p. 1596), Coleman states "Contrast-emphasis is expressed mainly by intonation" (as cited in Bolinger, 1961, p.83), and Bolinger (1961) even proposes renaming *contrastive stress* to *contrastive accent* due to the "major contribution that the fundamental pitch of the voice makes" (p. 83). Therefore, by altering one's pitch, and/or either of these other elements in tandem, a speaker has the ability to emphasize certain parts of a sentence. This resulting stress is typically used to express a particular meaning.

The assumption in traditional linguistics that contrastive stress at the phrasal-level indicates new information has been well established and stated by several in the field (Erteschik-Shir & Lappin, 1983, p. 421-422; Quirk et al., 1985, p. 1442; Cruttenden, 1986, p. 89; Bosch & Sandt, 1998, p. 3). Bosch and Sandt (1998) additionally cite

previous research by Halliday (1967) and Chafe (1967) that supports this claim for "most Germanic languages" (p. 3), including English. To understand what exactly constitutes new information, Cruttenden (1986) first explains that old (or given) information is "information which the speaker assumes to be already in some way in the consciousness of the listener and which is hence not in need of highlighting" (p. 88). Therefore, the new information will typically make up the scope of focus, whereas given information often falls outside of it. For example, when someone says "Lucas *drives* to work," the stress is on "drives," and therefore considered new information. This stress allegedly contrasts "drives" with an alternative mode of transportation, such as walking or biking, and indicates the speaker's intention of clarifying a previous misunderstanding regarding the method used to get to work. Because "work" is unstressed, it's considered given information, or information the listener was already aware of, and therefore assumed the place Lucas is driving is to work. Alternatively, if someone says "Lucas drives to *work*," then stress is on "work," and, again, according to traditional linguistics, the given information would be that Lucas drives, and the new information would be the location of where he drives to, meaning the speaker was clarifying any confusion about where Lucas goes by contrasting "work" with some other place.

In the case of "black lives matter," these established beliefs regarding contrastive stress and its implications leave us with certain expectations. It suggests if someone stresses "black," we should construe that as the speaker meaning black lives are more important than the lives of those who in contrast are not black. Conversely, if someone stresses "matter," we should construe that as the speaker correcting the previous idea that black lives have not mattered, and they should. If this traditional assumption of

contrastive stress holds true, then it would be reasonable to assume that those who stress "matter" believe all lives are equal, including black lives. Given that this assumption is just that, however, this may not necessarily be the case.

Cruttenden (1986) points out three different circumstances in which he claims information is stressed despite being old (p. 91-93). The first requires the information to be both old and contrastive ("All three of them had a go. Only the *mother* was successful." Because "mother" is a part of "all three," she's considered old information in the latter sentence). The second situation he refers to as "echoes," in which a listener frequently questions a previous utterance ("I didn't go after all." "You didn't *go*?"); echoes may also be exclamatory ("Get that bit of wood for me!" "Get that bit of *wood*! Just who do you think you're talking to?"). The last case he terms "insists," which involve counterpresuppositionals, or, situations in which a speaker denies a presupposition made by an earlier speaker ("When was Catharine of Aragon executed?" "She *wasn't* executed."). What Cruttenden classifies as "old information," however, is not in actuality old; the stress in each of his examples reveals something new and creates a contrast between previous and current understandings. The confusion lies in the repetition of earlier mentioned words. Because part of an utterance is used again, Cruttenden considers it old. The stress on "mother" delivers new information by informing the hearer that the mother was the only one successful via creating a contrast to the other two in "All three." Regarding echoes, the stress in "You didn't *go*?" reveals new information by communicating the hearer's surprise at learning the speaker did not go somewhere, thus creating a contrast with the assumption that the speaker had gone; similarly, in "Get that bit of *wood*!" the stress discloses the hearer's shock at the speaker

thinking they have some sort of authority over the hearer, thus creating a contrast to the assumption that the hearer can be asked to fetch items. In the last situation, the speaker asks a loaded question that assumes Catharine of Aragon was executed, and the hearer responds by stressing "*wasn't*" to emphasize new information that clarified the speaker's past understanding by creating a contrast to the previous misinformation.

Another difficulty includes the notion of contrast itself. Cruttenden (1986) declares the term to be difficult to define and provides an "informal definition" of "involving comparison within a limited set" (p. 90) while simultaneously acknowledging the issue of not being able to properly define a limited set. Bosch and Sandt (1998) share this sentiment in explaining "there is no obvious physical difference that forms the basis of the distinction between contrastive and other accents" (p. 4), thus rendering the idea of contrast problematic. Bolinger (1961) concluded the same years earlier, stating "The semantic peak includes contrastive accents along with other accents; and there is no predictable phonetic difference" (p. 84). He also cautions that "the contrastiveness of…accents is not only a function of the accents themselves, but of the starting point" (p. 84), and provides examples (1) – (3) to demonstrate.

(1) "*My* mother is coming."

(2) "My *mother* is coming."

(3) "My mother *is* coming."

Sentence 1 with stress on "my" implies a contrast with someone else's mother; *my* mother is coming, not *his*. Sentence 2 indicates a contrast with another person, such as *father*. Sentence 3 suggests a contrast with *is not*. The problem, Bolinger points out, is

that this particular sentence sets up a context in which stress on any word can be interpreted as contrastive. He proposes placing the sentence within another context:

"Why are you in such a hurry to get home?"

"My *mother* is coming."

Bolinger then states the response shares the same stress placement and pitch contour as sentence 2 above, but argues that only in sentence 2 is the stress contrastive. In the latter example, the stress naturally occurs in "mother." If a listener only heard "My *mother* is coming" with no context, they would have no way to confirm whether the stress was actually contrastive or not. Bolinger's is just one possible interpretation of the dialogue, however. While he claims only sentence 2 contains contrastive stress, it's still possible that the stress in "My *mother* is coming" is contrastive in that the speaker is relaying the significance of the visitor. Nevertheless, Bolinger's observation that context is an important factor should be kept in mind when considering stress. His statements suggest the stress in "black lives matter" must similarly be judged based on prior utterances to determine a context and whether or not the stress is contrastive. Once the utterance has been confirmed as contrastive, then its placement can be observed in relation to the speaker's supposed attitude. It should also be noted that these previous studies on contrastive stress almost entirely focus on context in terms of words and grammar – with exception to Cruttenden, whose examples integrated how one speaker interpreted the assumption of another – whereas the current study considers the individuals and their real-world surroundings. Chapter 2 will further explain how the current study considers context when analyzing stress.

A number of studies have focused on prosody to determine what particulars it can communicate, namely intonation and its role in delivering affective information. Pakosz (1983) for example found that the sole use of prosodic features to identify emotive meaning would be unreliable so long as the meaning was "specified by cognitive and contextual factors" (p. 313). Concerning intonation specifically and its role in transmitting emotion, Uldall (1960) found that its chief role was to differentiate positive affects from negative ones. In other words, intonation alone appears to be quite limited in its ability to relay a precise emotion. Pakosz (1983) also suggests that where pitch is involved, fundamental frequency variation is significantly less important than higher harmonics insofar as affective information is concerned (p. 318). These studies were primarily concerned with altering intonation contours and pitch information to determine the extent each has in relaying emotion; however, the current study is concerned with using intonation for the purpose of identifying pitch prominence to discern stress location. While intonation can be used to a degree to transmit emotion, it's possible that it also plays a role in conveying speaker attitude based on theories of contrastive stress.

Therefore, the traditional assumption that contrastive stress indicates new information leads to the hypothesis that those who stress “black” will have an attitude that emphasizes the importance of black lives and suggests the lives of others, who are not black, aren’t as significant. Alternatively, those who stress “matter” will have an attitude that emphasizes the importance of black lives being just as significant as the lives of any other race. In other words, can stress placement be used to correctly predict an individual’s attitude regarding race? Answers to this question could potentially challenge the assumptions behind contrastive stress interpretation.

# Chapter Two

## Method

In order to determine whether or not stress placement can predict attitude, a quantitative approach was taken. Using the streaming video website YouTube, 61 instances of speakers uttering the phrase "black lives matter" were gathered in order to categorize their attitude and pinpoint their stress location.

### Participants

Participants came from a selection of YouTube videos where they uttered the phrase "black lives matter." A total of 27 speakers were identified and categorized by race and sex based on the perception of the researcher. This included 14 women and 13 men. Of these, 15 were black, 10 were white, 1 was Asian, and 1 was a mix of black and white (explicitly stated by the speaker). Attitude was categorized based on criteria explained below.

Existing material online was used because it provides a vast number of samples with a wide range of contexts that a researcher would not be able to create, such as footage from vloggers and news anchors. Additionally, the instances of "black lives matter" across these contexts are naturally produced in their respective settings as opposed to being teased out by a researcher.

### Data Collection

Seventeen videos from the streaming website YouTube were used to collect 61 instances of 27 people saying "black lives matter."

**Keywords.**

"Black lives matter" was the only phrase used to search YouTube, as it was thought to provide the most relevant material. Upon selecting a video from this initial search, other videos queued up in the autoplay feature, which often displays similar content, and were also occasionally selected. If a video had the words "black lives matter" in its title, it was more likely to be viewed due to its direct relevance.

**Duration.**

Selected videos were less than 15 minutes in length due to time constraints. Each video needed to be watched in its entirety at least once to document utterances of "black lives matter," though often they were watched several times in order to record additional information such as speaker attitude; see below. Multiple videos of longer durations would require significantly more time to process.

**Content.**

No filters were applied, nor was any specific participant or context sought out. The purpose of this study was to establish whether or not a relationship existed between stress placement and attitude in general, not within a particular context or demographic. The only requirement for a qualified video was that it include at least one utterance of "black lives matter" functioning as a name or statement, not a modifier (e.g. "Black Lives Matter movement") or in a question. Modifiers and questions were omitted due to the alteration in intonation they cause which in turn influences stress. Every instance of the phrase that met the aforementioned criteria was included; in other words, if a video had five instances of "black lives matter," each one was used as a new data point if it was a name or statement, regardless of whether or not it was the same person or several

different people. If the same person continuously uttered “black lives matter,” the additional instances were recorded because if stress placement can predict attitude, then there should be a consistency in the stress pattern across all of that particular individual’s utterances.

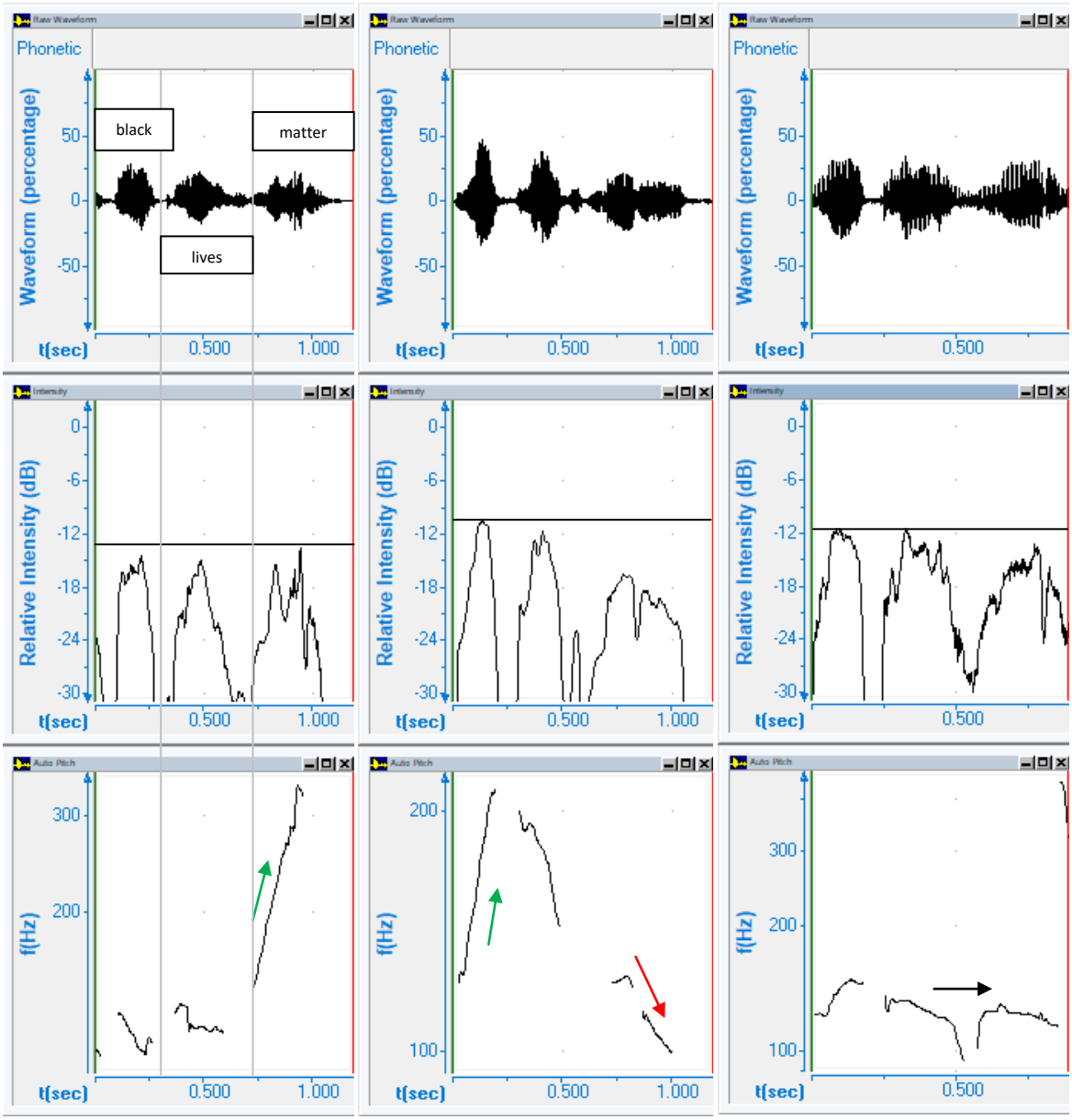
## Procedure

### Stress Placement.

To determine whether or not stress can predict attitude, the placement of the stress had to be analyzed. The audio was ripped from each video and imported into the audio editing software Audacity (Version 2.2.0; Audacity Team, 2017). Every time a speaker used the phrase “black lives matter,” the corresponding audio chunk was cut and saved as its own sound clip. If the phrase was uttered multiple times in a single video, each instance was recorded as a separate clip. Following this, each sound clip was run through Speech Analyzer (Version 3.1.0; SIL International, 2012), software that analyzes speech sounds by producing graphs for certain aspects, such as pitch and intonation. The position of stress can generally be determined based on the appearance of these. Because stress is a combination of both the intensity of a word as well as speaker intonation and pitch, the graphs can be observed as a crosscheck to more accurately determine stress location. Stress on “black” was coded as “b,” stress on “matter” was coded as “m,” and any other variations in stress or the lack of it were coded as “o” for “other.”

Figure 1 displays the graphs generated by Speech Analyzer for three different audio clips with speakers uttering “black lives matter.” From top to bottom, the first row of graphs provide a visual of the audio’s raw waveform, the second row displays the intensity of each word, and the third row measures the speaker’s intonation, or, the

change in the speaker's pitch throughout the utterance. The horizontal axis for all graphs measures the duration of the utterance in seconds while the vertical axis varies.




(a) Stress on "matter" (b) Stress on "black" (c) Indeterminate

***Figure 1.*** Speech Analyzer window displaying graphs (from top to bottom) for the waveform, intensity, and average frequency of three different audio clips of three speakers (left to right) uttering "black lives matter."

As Figure 1.a shows, there are two vertical gray lines that divide the graphs into three separate sections to show how each measurement can be read for individual words and then compared. The first section contains the auditory information for “black,” as indicated by the label in the waveform graph. Similarly, the second section isolates information associated with “lives,” and the third section focuses on parts of the graphs that relate to “matter.” The first graph illustrating the raw waveform displays the amplitude along the vertical axis, whereas the intensity graph is measured in decibels along the vertical axis. Regarding the intensity in Figure 1.a, it appears overall level, indicated by the horizontal line that each peak hovers around for each word uttered. In the case of the phrase "black lives matter," the “b” at the beginning of “black” is a plosive, which is a sound produced with a burst of air (Ladefoged, 2014, p. 15). This burst results in a naturally stronger intensity compared to “m,” which is a nasal, and produced by expelling air through the nose (Ladefoged, 2014, p.15). Surprisingly, “black” can be expected to have a stronger intensity than “matter” even when the latter is actually being stressed. In cases where “matter” is indeed being stressed, its intensity should be similar to that of “lives.” However, odd cases arise in which this does not hold true, such as with Figure 1.a. Based solely on the intensity graph, because the peak height for each word is relatively level, the stress appears to be on "matter" since normally it would have a lower reading than "black" and "lives." To verify this, the intonation graph can be used for further clarification by observing the rise and fall of the speaker's pitch. The vertical axis for intonation measures the fundamental frequency (f0). As indicated by the green arrow, the rising pitch contour signifies stress, thus supporting the conclusion that "matter" is being emphasized.

In Figure 1.b, upon examining the intensity graph, stress appears to be on either "black" or "lives," as the decibel level for both words is similar despite "black" starting with a plosive. An examination of the pitch contours in the intonation graph clarifies the stress placement. The decline associated with "matter" implies a fall in pitch and a lack of stress, whereas the initial incline for "black" signifies emphasis.

Figure 1.c demonstrates a situation similar to that of Figure 1.a; the intensity graph is relatively level across the entire utterance. While “matter” appears to be similar to “lives” in intensity, which, again, would suggest an emphasis on “matter,” the intonation graph displays no obvious incline to signify stress location. Therefore, this instance would be classified as indeterminate.

**Who matters.**

Each video was watched to determine the attitude of the speaker regarding who matters (black lives, all lives, etc.) based on surrounding dialogue in order to compare it with the speaker’s stress placement. Attitudes were classified into one of three categories, each with specified criteria so as not to classify based on intuition. The first category, “black lives,” was coded as “1.” This category included those who explicitly stated they were for black lives in particular, and those who implicitly stated it by voicing concern for black lives only, or speaking negatively about other races; see examples (1) and (2).

(1) “I’ve never been all lives matter, right? I’ve been black lives matter the whole time. Then also, I was doing a sociological experiment, so I’m like, you know what? I wanna see how racist white people can get.”

(2) “… you white people are angry because you couldn’t use your white privilege card…”

The second category, “all lives,” was coded as “2,” and included people who may have expressed concern for black lives, but also made reference to the significance of all lives, or how all lives should be equal, as in examples (3) – (5).

(3) “Black lives matter, white lives matter, Asian lives matter.”

(4) “All lives matter.”

(5) “When I say black lives matter, that doesn’t mean yours don’t.”

Attitudes that differed from either of these or could not be determined were placed into a third category coded as “0.” People classified as “0” either had very brief speaking parts where they spoke a single line that did not contain enough information to categorize them, or they were a news anchor who was acting more as a listener/questioner and remained neutral; see (6) – (7).

(6) “Black lives matter because I have a 27-year-old son.”

(7) “How would that have helped this? Because this guy wasn’t part of Black Lives Matter.”

**Additional variables.**

While this study is primarily concerned with the location of stress and who matters, the following variables were documented and considered as potential factors that may influence an individual’s stress placement: attitude towards the BLM movement, the function of the phrase “black lives matter,” its context, and the race and sex of the speaker.

**Attitude towards the Black Lives Matter Movement.**

Videos were used to determine the attitude of the speaker toward the movement based on surrounding dialogue. Attitudes toward the movement were designated one of four levels of classification. Each level had a set of criteria. Those categorized as "pro," coded as "P," were either speakers who explicitly affirmed their support for BLM, or affirmed their support implicitly via statements that aligned with the movement; see examples (8) – (10).

(8) "Yes, all lives matter, but right now, black lives matter."

(9) "I've been black lives matter."

(10) "Black lives matter as much as any other life."

Speakers classified as "con," coded as "C," similarly consist of those who either clearly stated their opposition to the movement, or those who implied it, such as in (11) – (14).

(11) "It is time for this nation to stand up with one voice and to condemn and shun this movement called Black Lives Matter."

(12) "…when you say 'black lives matter,' that's inherently racist."

(13) "Black Lives Matter's like the boy who cried wolf."

(14) "What does Black Lives Matter want? I mean to date it seems all they've really accomplished is burning down black neighborhoods, pissing off police officers, and ruining future employment opportunities for black kids that write on their behalf and get arrested."

Additionally, there was an "ambivalent" category, coded as "A," though no one qualified for placement. This classification was reserved for speakers who had mixed

statements and argued both for and against the movement with statements such as “Black lives matter, but so do police lives.”

Lastly, an “undetermined” category, coded as “U,” was created for speakers who expressed none of these responses. Those classified as “undetermined” included people who did not speak enough outside of the phrase “black lives matter” to be categorized, as well as people who spoke about aspects of the movement, such as answering whether it should be called “Black Lives Matter” vs. “All Lives Matter,” matter-of-factly, without demonstrating their alignment. Other cases involved vloggers and news anchors who voiced questions or statements that didn’t reveal a bias regarding their alignment within the confines of the video. Examples include (15) – (17).

(15) “It’s a movement that was started by and for black people, and I think that it should remain Black Lives Matter.”

(16) “Congratulations on four years since Black Lives Matter got started.”

(17) “How would that have helped this? Because this guy wasn’t part of Black Lives Matter.”

**Function.**

When the phrase “black lives matter” functioned as a name, coded as “N,” the speaker was using the phrase in reference to the title of the movement. See (18) – (20).

(18) “How Black Lives Matter is killing Americans.”

(19) “…he was doing this in the name of Black Lives Matter…”

(20) “She co-founded Black Lives Matter.”

All other instances of the phrase functioned as part of a statement and were coded as “S.” See (21) – (23).

(21) "…when we say black lives matter, we're not saying only black lives matter."

(22) "Of course black lives matter, and they matter greatly."

(23) "…what will you do to ensure that black lives matter."

**Context: race.**

The context of each utterance was recorded in terms of race. If the dialogue surrounding the instance of the phrase "black lives matter" directed the conversation toward the topic of race, it was coded as "Y" for yes; if not, then it was coded "N" for no. This was to take into consideration if a speaker was led to emphasize "black" given that the context of the discussion focused on race, such as if an interviewer asked "Do you think it should be called Black Lives Matter, or All Lives Matter?" In this case, the interviewer calls attention to the topic of race by comparing "Black" with "All." Therefore, even if an individual believes all lives matter, because the movement focuses on the inequality toward blacks, they may feel the name is appropriate as-is and be prompted to respond "*Black* Lives Matter" with stress on "Black" since this is what's being contrasted with "All." Because the purpose of this study is to determine the existence of a relationship between a speaker's attitude toward who matters and stress placement, documenting anything that could potentially alter the location of stress is crucial.

**Context: importance of lives.**

If the dialogue preceding a "black lives matter" utterance guided the conversation toward a context involving the importance of lives, it was coded as "Y." If the context was not focused on the importance of lives, it was coded as "N." In terms of stress

placement, if a speaker was led to discuss the importance of life, it's possible there would be an increase in the chance of "matter" being stressed to contrast the idea that black lives *matter* with the idea that they do not.

**Race and sex.**

As previously mentioned, speakers were classified as perceived by the researcher. Race of the speaker was coded as "B" for blacks, "W" for whites, or "U" for those who are neither. Additionally, the sex of the speaker was coded as "F" for females, "M" for males, or "U" for those who are indeterminate.

## Hypothesis

According to the hypothesis, those who stress "black" will have an attitude that emphasizes the importance of black lives and suggests the lives of other non-blacks aren't as significant, whereas those who stress "matter" will have an attitude that emphasizes the importance of black lives being just as significant as the lives of any other race.

## Chapter Three

## Results

Fisher's exact was used to determine whether or not a significant relationship existed between stress placement and the recorded variables, in particular the speaker's attitude as defined in Chapter 2. The resulting p-values are documented in Table 1.

Rows are organized based on sample size, with most samples at the top and least at the bottom. The left-most column of Table 1 details what speakers were included in the tests. The row titled "All values" displays the p-values for Fisher's exact including all speakers; "Determinate who matters" includes speakers who were categorized as being for "all lives" or "black lives" and excludes anyone who did not meet the criteria for

**Table 1**

*P-values for the Relationships Between Stress Placement and Recorded Variables using Fisher's Exact (no significance)*

| | Sample size | Who matters | Attitude toward BLM | Context: Race | Context: Importance | Function | Race | Sex |
|---|---|---|---|---|---|---|---|---|
| All values | 61 | 1 | .81 | .41 | .34 | .88 | .22 | .80 |
| Determinate who matters | 59 | 1 | .75 | .45 | .29 | 1 | .29 | .67 |
| Determinate attitude | 51 | .68 | .68 | 1 | .22 | .78 | .18 | .63 |
| Determinate stress placement | 40 | 1 | .68 | .23 | .23 | 1 | .19 | .69 |
| Determinate values only | 34 | .51 | .68 | 1 | .21 | .67 | .25 | 1 |

either of these categories; "Determinate attitude" includes speakers who were either for or against BLM and excludes those categorized as indeterminate or ambivalent; "Determinant stress placement" includes speakers who stressed "black" or "matter" and

excludes those who stressed neither of these or were indeterminate; "Determinate values only" includes speakers who only had determinant values for all variables. In other words, all speakers with indeterminate values for *stress placement*, *who matters*, or *attitude toward BLM* were removed for this category. It was thought that by excluding indeterminate data and only testing confirmed categories the results might reveal a particular variable as having a stronger relationship with stress placement. Table 1 demonstrates, however, that regardless of whether or not indeterminate values were included, the difference in results was minimal for all variables. Further, the results showed no significant relationships between stress and any of these other variables.

As a kind of control, the variable *attitude toward BLM* was tested for an association with the variables *who matters* and *context: importance*, the results of which can be found in Table 2. This was essentially a test for consistency regarding the speakers, what they said, and their beliefs; e.g. someone who supports BLM would

**Table 2**

*P-values for the Relationships Between Attitude Toward BLM with Context: Importance and Who Matters using Fisher's Exact*

| | Sample size | Who matters | Context: Importance |
|---|---|---|---|
| All values | 61 | .002* | .09 |
| Determinate who matters | 59 | .04* | .09 |
| Determinate attitude | 51 | .02* | .04* |
| Determinate stress placement | 40 | .04* | .01* |
| Determinate values only | 34 | .23 | .04* |

supposedly also be discussing the importance of lives, as that's what the movement is concerned with, and believe that all lives matter, including black lives. When tested with all samples, there was no significant relationship between *attitude toward BLM* and

*context: importance*, p = .09. However, when indeterminate samples were omitted, significance was obtained, p = .04. Conversely, when *attitude toward BLM* and *who matters* was tested including all values, there was a significant relationship, p = .002, whereas excluding indeterminate values resulted in insignificance, p = .23.

**Who Matters**

No significant association was found between stress placement and who matters, p = 1. Consequently, the hypothesis stating that those who stress "black" will have an attitude that emphasizes black lives over the lives of others who, in contrast, are not black, was not supported. Table 3 displays the counts for who matters based on stress

**Table 3**

*Stress x Who Matters (frequency)*

| | Who matters | | | |
|---|---|---|---|---|
| Stress | Black lives | All lives | Other | Total |
| Black | 1 (11.1%) | 8 (88.9%) | 0 (0%) | 9 (100%) |
| Matter | 3 (9.7%) | 27 (87.1%) | 1 (3.2%) | 31 (100%) |
| Other | 2 (9.5%) | 18 (85.7%) | 1 (4.8%) | 21 (100%) |
| Sample size | 6 | 53 | 2 | 61 |

placement and reveals that regardless of what a speaker stressed, the vast majority from each stress placement category believed that all lives matter.

Regarding speakers who stressed "black," one explicitly identified as being for black lives in particular via comments like "I never been all lives matter, right? I've been black lives matter the whole time," as well as "I've been pro-black the whole time." In their video, this vlogger claimed to be conducting a "sociological experiment" through which they could determine "how racist white people can get." Throughout the video the vlogger exhibited a racist tendency toward whites and made comments about how "dumb" and "racist" white people are. What's interesting to note is that while it's not

surprising for this particular speaker to exhibit a racist behavior given their admission of being pro-black and their stress placement, the three other recorded utterances by this same speaker demonstrate an inconsistency. In two instances the stress could not be determined and thus classified as "other," while the remaining instance was classified as "matter." This suggests, as does the unsupported hypothesis, that stress placement alone is not enough to determine an individual's attitude.

The other speakers who stressed "black" make up a total of 88.9% and were for all lives – the highest percentage out of the three stress placement categories. This is not too surprising given the likely possibility that both sides – those who stress "black" and those who stress "matter" – agree that all lives matter. While the hypothesis was based on an assumption of contrastive stress that made the prediction a reasonable one, it was still nevertheless based on an assumption. Table 3 therefore suggests that most speakers who stress "black" are not trying to imply that black lives are more important than non-blacks, but are stressing the word for a couple of other reasons.

One explanation involves a *local contrast* that was observed in some speaker utterances. This concept is prevalent in discussions that were affected by the *context: race* variable, mainly ones involving the phrase "black lives matter" being used as a statement and not a name. See examples (1) and (2).

(1) "Yes, all lives matter, but right now, *black* lives matter."

(2) "All lives matter, and the fact that *black* lives matter, highlights the fact that…"

These speakers used stress to create a local contrast between "all" and "black" within a sentence as opposed to within the greater context of the movement, or, a *global contrast.*

This local contrast then overrides the global one (in which we would predict the speakers in the aforementioned examples to stress “matter” since they believe all lives are equal) and cause the speaker to contradict our expectation.

Another explanation involves the interpretation of the name "Black Lives Matter.” If a white racist reads “Black Lives Matter” with stress on “Black,” their attitude isn’t suggestive of blacks being more significant than other races; however, because of the way they interpret it, they incorrectly assume the name implies blacks are more important and therefore associate this message with the movement’s supporters. It is because of this interpretation that rebuttals of “*all* lives matter,” “*black* lives matter,” and “*blue* lives matter” are uttered in protest.

**Attitude Toward BLM**

There was no significant relationship found between a speaker’s stress placement and their attitude toward the Black Lives Matter movement, p = .81. Table 4 details the breakdown between those who are for or against the movement and their stress location.

**Table 4**

*Stress x Attitude Toward BLM (frequency)*

| | Attitude toward BLM | | |
|---|---|---|---|
| Stress | Pro | Con | Undetermined |
| Black | 3 (12%) | 4 (15.4%) | 2 (20%) |
| Matter | 15 (60%) | 12 (46.2%) | 4 (40%) |
| Other | 7 (28%) | 10 (38.5%) | 4 (40%) |
| Total | 25 (100%) | 26 (100%)* | 10 (100%) |

*Note.* Sample size = 61.

*Each cell was calculated individually and rounded to the nearest tenth. Therefore, while adding up the “Con” column results in 100.1% due to rounding, the true value for “Total” is 100%.

For speakers who are against the movement, it would appear odd for them to stress "black," since this supposedly suggests a significance of black lives over the lives of others. See examples (3) – (6).

(3) "Of course *black* lives matter, and they matter greatly."

(4) "*Black* Lives Matter is leading black people down the wrong path."

(5) "*Black* Lives Matter is an ideological and a political intervention in a world…"

(6) "How do you reconcile the fact that *Black* Lives Matter only chooses to focus on a narrow…"

Sentence (3) is another case of local contrast that overlaps with the *context: race* and *function* variables. The dialogue for the speaker in (3) had been directed toward the topic of race, prefaced by "Black lives matter, white lives matter, Asian lives matter, Hispanic lives matter. That's anti-American, and it's racist. Of course *black* lives matter, and they matter greatly." The speaker stressed "black" because the context of race caused them to create a contrast between races. In this case, a contrast between "black" and other non-black races.

Sentences (3) – (6) also appear to demonstrate that a speaker will stress "black" if they believe BLM values blacks over other races, a common misinterpretation for people who are against the movement.

**Context: Race**

Test results concluded there was no significant relationship between a speaker's stress placement and whether or not the conversation was directed toward the topic of race, $p = .41$. In individual cases, however, it's clear that this does play some kind of role

**Table 5**

*Stress x Context: Race (frequency)*

| | Context: Race | |
|---|---|---|
| Stress | Yes | No |
| Black | 4 (25%) | 5 (11.1%) |
| Matter | 7 (43.7%) | 24 (53.3%) |
| Other | 5 (31.2%) | 16 (35.6%) |
| Total | 16 (100%)* | 45 (100%) |

*Note.* Sample size = 61.

*Each cell was calculated individually and rounded to the nearest tenth. Therefore, while adding up the "Yes" column results in 99.9% due to rounding, the true value for "Total" is 100%.

in affecting stress such as in examples (1) – (3). Therefore, while the test concludes *context: race* doesn't have a significant effect on its own, it appears to have an effect on stress when taking into consideration the function of "black lives matter." Of the 16 clips where utterances were steered toward the topic of race, 9 were categorized as a statement with 4 stressing "black," 3 stressing "matter," and 2 categorized as "other." The 4 speakers who stressed "black" do so to create a contrast to race given the altered context, which follows the idea of local contrast influencing stress placement. In two of the samples where speakers stressed "matter," it appears stress was affected by another variable that overrode *context: race*; see "Context: Importance." This leaves us with a third odd case of stress on "matter" seen in example (7).

(7) "And when you say 'black lives *matter*,' that's inherently racist."

This particular utterance defies previous explanations; it may be an anomaly, or possibly projection.

**Context: Importance**

No significance was found between the stress placement in "black lives matter" and whether or not the context was cast against a background of importance regarding lives, p = .34. Table 6 shows the frequency counts for stress placement and whether the context was marked number is significantly higher when context was influenced by

**Table 6**

*Stress x Context: Importance (frequency)*

| | Context: Importance | |
|---|---|---|
| Stress | Yes | No |
| Black | 1 (5%) | 8 (19.5%) |
| Matter | 12 (60%) | 19 (46.3%) |
| Other | 7 (35%) | 14 (34.1%) |
| Total | 20 (100%) | 41 (100%)* |

*Note.* Sample size = 61.

*Each cell was calculated individually and rounded to the nearest tenth. Therefore, while adding up the "No" column results in 99.9% due to rounding, the true value for "Total" is 100%.

importance. When omitting the "other" stress category, the 60% of speakers who stressed "matter" jumps to 92%.

The one speaker who violated the prediction of stress falling on "matter" when context involved importance had the added factor of race introduced to the conversation; see example (3). Thus, while their utterance was affected by both *context: importance* and *context: race,* it appears that race was deemed a more important point of contrast by the speaker.

On the other hand, in examples (8) and (9) where the utterance is also affected by both *context: importance* and *context: race,* the speaker chose to highlight importance as the more significant point of contrast.

(8) "…acknowledge first and foremost whether or not they believe that black lives *matter*."

(9) "…what will you do to ensure that black lives *matter*."

These examples seem to suggest that where both contextual variables are present, the speaker will make a decision as to which is more significant in terms of furthering their point. In examples (8) and (9), the speaker is aiming to bring awareness to the situation of blacks, but this is a secondary goal. The speaker's primary goal is to communicate the importance of black lives, hence the emphasis on "matter." Conversely, in example (3), the speaker understands and acknowledges the significance of black lives, but their primary concern is to ensure that black lives specifically matter as opposed to another race, because black lives are the lives in question.

**Function**

There was no significance between stress placement and the function of the phrase "black lives matter," $p = .88$. The expectation was for instances of "black lives matter" as a statement to show more variation in stress placement, whereas instances of it as a name would have relatively consistent stress patterns regardless of other factors. Table 7, however, suggests that the name function has a variation comparable to that of the statement.

**Table 7**

*Stress x Function (frequency)*

| | Function | |
|---|---|---|
| Stress | Name | Statement |
| Black | 6 (16.2%) | 3 (12.5%) |
| Matter | 19 (51.4%) | 12 (50%) |
| Other | 12 (32.4%) | 9 (37.5%) |
| Total | 37 (100%) | 24 (100%) |

*Note.* Sample size = 61.

As mentioned in "Attitude Toward BLM," example sentences (4) – (6) suggest that "Black Lives Matter" as a name has stress placement that does not reflect the speaker's attitude, but their understanding of the attitudes of BLM supporters. Therefore the speakers in (4) – (6) think BLM supporters value black lives over the lives of others, whereas if they said "Black Lives *Matter*," it would suggest the speaker's belief that BLM supporters think black lives should matter as much as the lives of others.

In contrast, stress placement in "black lives matter" as a statement appears to be dependent on the speaker's own attitude.

**Race**

No significant association was found between stress placement and the race of the speaker, $p = .22$. Table 8 shows the breakdown of how each race stressed the phrase "black lives matter." Considering the movement was made by blacks for blacks, it seems

**Table 8**

*Stress x Race (frequency)*

| | Race | | |
|---|---|---|---|
| Stress | Black | White | Other |
| Black | 6 (15.8%) | 2 (10%) | 1 (33.3%) |
| Matter | 18 (47.4%) | 13 (65%) | 0 (0%) |
| Other | 14 (36.8%) | 5 (25%) | 2 (66.7%) |
| Total | 38 (100%) | 20 (100%) | 3 (100%) |

*Note.* Sample size = 61. Of the 27 speakers identified for participation, 15 were black, 10 were white, and 2 were other.

surprising that they have a lower percentage of people who stressed "matter," especially since they have almost twice as many samples than whites. Assuming a speaker understands the goals of BLM, it would make sense for them to stress "matter" in accordance with the hypothesis to emphasize that black lives are just as important as any

other race. However, it's possible there are those who are either unaware of or simply do not understand what BLM aims to achieve, resulting in other stress placement. There are also those who may aim to purposely alter stress with the intention of misrepresenting the goals of BLM.

**Sex**

No significance was found between stress placement and the sex of the speaker, p = .80. Table 9 displays comparable results between the sexes and where they placed stress in "black lives matter."

**Table 9**

*Stress x Sex (frequency)*

| | Sex | |
|---|---|---|
| Stress | Female | Male |
| Black | 3 (16.7%) | 6 (14.0%) |
| Matter | 8 (44.4%) | 23 (53.5%) |
| Other | 7 (38.9%) | 14 (32.6%) |
| Total | 18 (100%) | 43 (100%)* |

*Note.* Sample size = 61. Of the 27 speakers identified for participation, 14 were women, and 13 were men; however, the men produced several more utterances of "black lives matter," hence the larger sample size.

*Each cell was calculated individually and rounded to the nearest tenth. Therefore, while adding up the "Male" column results in 100.1% due to rounding, the true value for "Total" is 100%.

**Discussion**

The present study was conducted to determine whether or not stress placement could be used to accurately predict a speaker's attitude. The hypothesis formed to test this – that speakers who stress "black" will have an attitude that suggests the lives of blacks in the context of the movement are more significant than the lives of non-blacks, and speakers who stress "matter" will have an attitude that suggests all lives are equally significant – was not supported by the results. This suggests that the traditional theories

of contrastive stress do not necessarily hold true, partly due to what Cruttenden (1986) has pointed out regarding limited sets.

Cruttenden (1986) stated that providing a definition for limited sets is difficult, as is defining contrast; however, of limited sets, he said "The most clear-cut cases involve a binary set, often a pair of opposites" (p. 90), and then provided the example "She found it very *easy* to settle to married life / whereas he found it *difficult*" (p. 90). Afterwards, he was quick to mention that there are several cases in which these limited sets are not binary and gave examples explaining the difficulties presented by them and the notion of contrast:

> *The lights were RED* is clearly contrastive when talking of traffic lights. Similarly *BLUE* is contrastive in *It turned out the getaway car was BLUE* (even though witnesses had said it was red or black). Notice that in these last two cases, the comparisons are implicit rather than explicit. But if we allow more than binary comparison as contrastive and we also allow something as 'contrast' even though it is only implicit, we then run into many difficult cases. What if I say *I've got a SILver car* (in a conversation about what colour cars people prefer)? The contrast would seem to be with all other potential colours of cars (or perhaps the contrast is with the mundane quality of all other colours of cars). (p. 90).

Because contrastive stress deals with assumptions, the understanding of a hearer may not match the intent of a speaker. As seen in the case of Cruttenden's example with the silver car, a hearer could assume contrast is with one of potentially multiple things when implicit. Similarly, in the case of "black lives matter," a speaker's stress placement may not clearly identify what their stress is contrasting with if implicit. While there are

certainly limitations to what the speaker's contrasting (for example, "*black* lives matter" would undoubtedly create a contrast to other races, either in general, or a specific one), there still remains some ambiguity.

Another potential reason for insignificance includes speaker deception. Though it's unlikely there were enough deceptive speakers to cause insignificant results, it's nonetheless a possibility, as additional content by the speakers included in this study was not sought out in an attempt to verify information regarding their beliefs. In one case a vlogger had made two separate videos; in one they claimed to be against BLM and for "all lives matter," in the other they revealed they were never "all lives matter," but black lives matter – as in they supported the movement and blacks specifically – and even went a step further by identifying as pro-black. While the video of this vlogger posing as anti-BLM did not meet the current study's criteria (no instances of "black lives matter") and was consequently excluded, it raises the possibility of people attempting to deceive others, which may affect their stress placement. If a speaker is consciously aware of the utterance, they could alter their stress placement so it's in accordance with what they want a hearer to believe, assuming the speaker correctly predicts how a hearer will interpret the stress.

Misinterpretation also factors into the results. If an individual thinks that BLM supporters believe black lives are more important than the lives of non-blacks, then based on their preconceptions, even if the BLM supporter says "black lives *matter*," the individual may hear "*black* lives matter." In the case of "Black Lives Matter" functioning as a name, such misunderstandings appear to influence stress depending on the speaker's understanding of BLM's message regarding black lives.

Additional consideration should be given to the fact that stress placement was determined using software and not an individual's hearing perception. This of course was to have as accurate a reading as possible for the sake of revealing a significant relationship between variables; however, in the real world, stress may not always be as apparent when relying on one's own senses when it comes to phrases specifically. According to one study, subjects were able to identify compound stress with "significantly greater accuracy" (McCauley, Hestvik, & Vogel, 2013, p. 32) than phrasal stress. The subjects were not instructed to focus on any aspects of stress. Instead, they were shown an image, and told to determine whether or not the utterance that followed its appearance matched the picture. For example, an image of a greenhouse would appear, and they would hear "greenhouse" or "green house." As such, certain types of stress are more easily perceived, and only a small percentage of people may be able to use stress to predict attitude in the real world if phrasal.

The implications of this research suggest that traditional descriptions of contrastive stress do not hold true. Moreover, predicting contrastive stress placement has proven to be a complex process with various elements working in tandem to influence emphasis. While the speaker's attitude is one factor that must be considered, their understanding (or misunderstanding) of another's attitude is also capable of having an effect on stress placement. The function of the phrase being stressed is an additional concern that needs to be addressed. Further research should consider how multiple variables combine to alter stress placement. In the case of the present study for example, the variables *stress placement*, *context: race*, and *function*. Not only should the speaker's attitude be recorded, but their perception of BLM and what they believe to be the

movement's attitude. This could account for inconsistencies across multiple utterances from the same speaker and differences in stress placement for the function of the phrase.

References

About. (n.d.). Retrieved from https://blacklivesmatter.com/about/

Audacity Team. (2017). Audacity(R): Cross-Platform Sound Editor (2.2.0) [Computer program].

Bosch, P., & Sandt, R. (1998). *Focus: Linguistic, congnitive, and computational perspectives (studies in natural language processing)*. Cambridge, England: Cambridge University Press.

Cruttenden, A. (1986). *Intonation*. Cambridge, England: Cambridge University Press.

Erteschik-Shir, N., & Lappin, S. (1983). Under stress: A functional explanation of English sentence stress. *Journal of Linguistics*, *19*(2), 419-453.

Ladefoged, P. (2014). *A course in phonetics* (7th ed.). Stamford, CT: Cengage Learning.

Pakosz, M. (1983). Attitudinal judgments in intonation: Some evidence for a theory. *Journal of Psycholinguistic Research*, *12*(3), 311-326.

Quirk, R., Greenbaum, S., Leech, G., & Svartvik, J. (1985). *A comprehensive grammar of the English language*. New York, NY: Longman Inc.

SIL International. (2012). Speech Analyzer (3.1.0) [Computer program].

McCauley, S. M., Hestvik, A., & Vogel, I. (2013). Perception and bias in the processing of compound versus phrasal stress: Evidence from event-related brain potentials. *Language and Speech*, *56*(1), 23-44. Available at EBSCO with full text PDF

Uldall, E. (1960). Attitudinal meanings conveyed by intonation contours. *Language & Speech*, 3, 223-234.

What we believe. (n.d.). Retrieved from https://blacklivesmatter.com/about/what-we-believe/