Cleveland State University
EngagedScholarship@CSU

ETD Archive

2018

The Effect of Taboo Words and Reprimands in an Audio-Visual Modified Stroop Task

Rachel B. Fernandes
Cleveland State University

Follow this and additional works at: https://engagedscholarship.csuohio.edu/etdarchive

 Part of the Physiology Commons

How does access to this work benefit you? Let us know!

Recommended Citation

Fernandes, Rachel B., "The Effect of Taboo Words and Reprimands in an Audio-Visual Modified Stroop Task" (2018). *ETD Archive*. 1051.
https://engagedscholarship.csuohio.edu/etdarchive/1051

This Thesis is brought to you for free and open access by EngagedScholarship@CSU. It has been accepted for inclusion in ETD Archive by an authorized administrator of EngagedScholarship@CSU. For more information, please contact library.es@csuohio.edu.

THE EFFECT OF TABOO WORDS AND REPRIMANDS IN AN AUDIO-VISUAL MODIFIED STROOP TASK

RACHEL B. FERNANDES

Bachelor of Science in Psychology

Grand Canyon University

April 2016

Submitted in partial fulfillment of requirements for the degree

MASTER OF ARTS IN PSYCHOLOGY

at

Cleveland State University

May 2018

We hereby approve this thesis

Rachel B. Fernandes

Candidate for the Master of Arts in Psychology Degree

for the Department of Psychology

and

CLEVELAND STATE UNIVERSITY'S

College of Graduate Studies by

Thesis Chairperson, Conor T. M^{c}Lennan

Department & Date

Methodologist and Committee Member, Albert F. Smith

Department & Date

Committee Member, Andrew B. Slifkin

Department & Date

Committee Member, Eric S. Allard

Department & Date

Date of Defense: May 3, 2018

ACKNOWLEDGEMENTS

I would like to express my deep and sincere gratitude to my advisor, Dr. Conor M^{c}Lennan, for his constant support and guidance. It was a great privilege and an honor to work closely with you. I am truly grateful for your invaluable feedback and hard work that has helped shape this thesis into what it is today. I would also like to thank Drs. Albert Smith, Andrew Slifkin, and Eric Allard for being a part of my committee and providing me with helpful feedback on this thesis.

I am extremely grateful to Dr. Samantha Tuft for her friendship and always being willing to guide me, despite the demands of her dissertation. Thank you for your support and patience with me. Assistance provided by Tabatha Lucas with data collection was greatly appreciated. Additionally, I am grateful to Dr. Sara Incera for her guidance and all the members of the Language Research Laboratory for their support during this process.

I also express my gratitude to my brother, Reuben, for his love, wonderful sense of humor, and always believing in me. Finally, I would like to thank my mother, Sandy Fernandes, who instilled in me a love of learning and whose love, encouragement, and support (both, emotional and financial) made this possible. Thank you for the comfort and strength you give me.

मातृदेवीम नमस्तुभ्यं मम जन्मदात्रिम त्वम् नमो नमः ।
बाल्यकाले मां पालन कृत्वा मातृकाभ्यो त्वम् नमाम्यहम ॥

THE EFFECT OF TABOO WORDS AND REPRIMANDS IN AN AUDIO-VISUAL MODIFIED STROOP TASK

RACHEL B. FERNANDES

ABSTRACT

Previous research has found that participants respond less efficiently to taboo words in a modified emotional Stroop task than to neutral words because of the emotional nature of taboo words. Additionally, there is some evidence that the extent to which these words impact performance depends on whether the words appear in a participant's native language. More specifically, the taboo effect has been found to be more pronounced in a person's native language. One purpose of the current study was to determine whether previous results in a taboo Stroop task would be replicated. Another purpose of this study was to determine if the taboo effect would extend to reprimands. Reprimands, like taboo words, are considered to be highly emotional. Taboo words were previously found to be more arousing in native speakers when presented auditorily compared to when presented visually. In the current study, the stimuli were simultaneously presented visually on a computer screen and auditorily over headphones. During a taboo Stroop task, participants were randomly presented with taboo and neutral words in colored fonts. During a reprimand Stroop task, participants were randomly presented with reprimanding phrases and neutral phrases, and only the last word in these phrases was in a colored font. Participants were instructed to indicate the font color. I analyzed participants' reaction times and the maximum deviation of their mouse movements. Participants in both groups responded significantly more slowly to taboo words compared to neutral words. Mouse movements were also more deviated in response to taboo words than neutral words. Interestingly, participants had significantly faster (not slower) responses for reprimands

compared to neutral phrases. Group differences were not statistically significant. Given participants' early age of acquisition, it is possible that the non-native participants behaved more like native speakers. Consequently, participants with later ages of acquisition should be recruited in future research.

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Researchers have provided evidence that emotional language, such as the use of taboo words, is processed differently than neutral words (Mathewson, Arnell, & Mansfield, 2008; Jay, Caldwell-Harris, & King, 2008; Eilola & Havelka, 2011). This difference in the processing of taboo words can also be influenced by whether a language was learned first. In particular, taboo words have been found to impact a person's memory and attention to a greater extent when the taboo words are presented in the person's first language. Reprimands have been found to be emotional in nature, just like taboo words (Harris, Aycicegi, & Gleason, 2003). Additionally, people find these reprimands to be more emotional in their native language compared to languages they learn subsequently (Harris et al., 2003).

Over half of the world's population is estimated to speak more than one language (Bialystok, 2017). People have been found to process emotional stimuli differently, based on whether a language was learned first (Chen, Lin, Chen, Lu, & Guo, 2015). Emotionality differences in a person's native and non-native language can have real-world consequences in the fields of psychotherapy, advertising, decision making, and forensic interviewing (Caldwell-Harris, 2015). Consequently, it is important to

understand how people process different types of emotion words in their first and second (subsequent) language(s). In the current study, I aimed to gain a greater understanding of this processing issue.

I have organized the remainder of this thesis Introduction as follows: I first write about taboo words and discuss their emotional nature. I then discuss how the emotionality of taboo words might differ if these words are in a person's non-native language. I also introduce reprimands as emotional stimuli and discuss how people might find reprimands less emotional in their non-native language. Finally, I introduce the current thesis research study and discuss my predicted results.

Taboo Words

Taboo language has the capacity to be extremely arousing and can emotionally impact people in a way that can influence cognition. Taboo words can impact a person's attentional blink (AB). Attentional blink refers to the phenomenon that occurs when an individual fails to accurately detect the second target when he or she is presented with two targets in quick succession. In their study, Mathewson et al. (2008) were interested in investigating the effect that emotional content can have on AB. In the first task, participants were presented with a Rapid Serial Visual Presentation (RSVP) stream in which all the stimuli were in a black font except the first target (T1), which was in a red font. The T1 was chosen from one of five emotion categories: positive, negative, taboo, neutral, or distractor. In the second task, participants were presented with a stream of words in which all the stimuli (even the words used as the T1 in the first task) were in a black font. The T1 words in this task were included as a to-be-ignored distractor. The researchers found that when the first target word was taboo, a larger AB was observed

compared to when the T1 belonged to one of the other emotion categories. When the to-be-ignored distractor was a taboo word, it resulted in an involuntary attentional blink with reduced accuracy in participants' ability to report the color word. Participants were asked to rate all stimuli for emotional arousal and valence. Although the researchers found no association between the valence of T1 and the accuracy in the tasks, the researchers found that emotional arousal was associated with poor accuracy. Taboo words were found to be more arousing and better remembered than the words from the other emotional categories. This arousal had an impact on AB and accuracy, providing support for the notion that taboo words affect certain cognitive processes, including memory and attention.

Another study examining taboo words was conducted by Jay et al. (2008) who examined how depth of processing influences recall of emotional and taboo words. Words that are processed at a deep level should be recalled easier than words processed at a shallow level (Morris, Bransford, & Franks, 1977). The researchers hypothesized that because taboo words are arousing, participants would have superior recall for taboo words compared to valenced or neutral words regardless of the level of processing used. In their first experiment, the authors presented participants with orienting questions that either facilitated shallow or deep processing. The stimuli consisted of taboo, neutral, and emotional (positively and negatively valenced) words. Each orienting question was followed by a stimulus word. After all the stimuli were presented, participants performed a filler task. Participants then received a surprise recall task, in which they were instructed to write down as many of the stimuli as they could remember. The researchers found that the levels of processing influenced recall times for neutral words, with words

being processed at a deep level being remembered better. However, the level of processing did not impact participants' ability to remember the taboo and emotional words, with participants performing equally well for these words. In the second experiment, participants' Skin Conduction Responses (SCRs) were measured and participants were asked questions that activated semantic associations of a stimulus. SCLs function as a measure of arousal. Then participants performed a distraction task followed by a surprise recall task. There were four different recall conditions to which participants were randomly assigned. While the first condition was a free recall task, the other three conditions required participants to recall words from each of the word categories in a different order. Jay et al. (2008) found that irrespective of the level of processing used, taboo words elicited higher SCRs than neutral and emotional words. Questions that activated semantic associations to allow deep processing were found to improve taboo word recall. Even when taboo words were cued to be recalled after the neutral and emotional words, recall was found to be higher for taboo words. As a result, taboo words were found to influence memory and result in a greater amount of arousal. People are expected to find taboo words highly arousing and have a better memory for taboo words.

In conclusion, taboo words can be highly arousing. This arousal impacts people's attention, which can significantly hamper performance on certain tasks. Taboo words also influence memory. People are able to recall taboo words with greater ease than other types of words.

Emotional Words in a Second Language

In another study that measured skin conductance, Eilola and Havelka (2011)

examined differences between non-native and native English speakers' reactions to emotional and taboo Stroop tasks. The researchers measured SCLs while participants performed a Stroop task that included positive, negative, neutral, and taboo stimuli. Participants were presented with the stimuli on a computer screen and asked to ignore the meaning of the word while indicating the color in which each word appeared by pressing one of four buttons. The researchers found that participants in both groups had longer reaction times (RTs) for negative and taboo words than neutral words. This finding led the researchers to conclude that there were no differences in the magnitude of the taboo effect between native and non-native speakers on a behavioral level, since longer RTs were obtained in both groups – and both groups were equally distracted by the negative and taboo words. However, when it came to the SCLs, these researchers found a difference between the native and non-native speakers. Native speakers displayed higher SCLs when presented with negative and taboo words compared to positive and neutral words, and this difference was greater than the difference obtained for the non-native speakers. While non-native speakers had a trend toward higher SCLs for taboo words compared to positive words, this difference was not found to be statistically significant, leading the researchers to conclude that native speakers find taboo and negative words relatively more arousing than non-native speakers. These findings demonstrate that taboo words are arousing, and that the extent of the arousal depends on whether a particular language was learned first. However, the differences between native and non-native speakers may be more difficulty to detect in RTs. A physiological measure – in this case, SCLs – was needed to detect this difference.

In another study in which this taboo effect was examined in native and non-native

speakers of English, Tuft, Incera, and M^{c}Lennan (2016) used a Stroop task that included taboo and neutral words. Participants were presented with the words in a colored font on a computer screen one at a time in a random order. Participants were instructed to focus on the color of the words and ignore their meaning, and to indicate the color of the word by clicking on the corresponding button on the computer screen. The researchers found that both non-native and native speakers of English had longer RTs to taboo words than neutral words, and that this taboo effect was equivalent across the two groups. Mouse movements were also more deviated in response to taboo words than neutral words across both groups. In other words, participants made more direct movements to the correct response, indicative of more efficient processing, in response to the neutral words than the taboo words. Furthermore, there was a significant correlation in MD between the magnitude of this taboo effect and participants' age of acquisition of English, such that the effect was stronger in participants with an earlier age of acquisition.

Anooshian and Hertel (1994) were interested in studying how emotional bilingual individuals found words in each of their two languages. Half of the participants recruited were native Spanish speakers who learned English after eight years old. The other half of the participants were native English speakers who learned Spanish after eight years old. The researchers chose emotional and neutral English words, as well as the Spanish translations of these words. Participants were asked to provide ratings based on how easy the words were to pronounce, the extent to which the meaning of the words involved activity, and how intensely emotional these words were. Participants were then asked to recall as many words as possible from the rating task. The researchers found that participants were able to recall more emotional words than neutral words in their native

language. This difference in recall between emotional and neutral words was not found in the participants' non-native language. Words in the native language were also rated as more emotional than words in the second language. The researchers proposed that this difference in emotionality occurred because the participants had fewer emotional experiences in the second language, having not learned the second language in early childhood. As a result, participants did not have a recall advantage for emotional words in their second language. These results further highlight differences between native and non-native speakers' memory and emotionality toward emotional stimuli. Emotional words are remembered better - and considered more emotional - in the first language.

Although the order of language acquisition matters, proficiency might also play a role in perceptions of emotional words. Dewaele (2004) examined the emotional force that multilinguals felt from taboo and swear words. Dewaele collected data from 1,039 people through an Internet-based questionnaire that included self-report questions about emotions and bilingualism. The researcher found that when participants reported higher proficiency and usage in one of the languages they spoke, these participants also reported greater emotional force in this language. These findings demonstrate the need to account for both the order in which people learned all of their languages, as well as how proficient they are in each of these languages.

Colbeck and Bowers (2012) recruited native speakers of English and native speakers of Chinese who learned English later on in life to study how emotional both groups found English taboo words. Using an attentional-blink task, the researchers included taboo/sexual critical-distractor words, neutral critical-distractor words, and noncritical-distractor nonwords. Participants were presented with RSVP streams

comprising noncritical-distractor nonwords, a critical-distractor word (either taboo/sexual or neutral), and a color word (the target). Participants were instructed to ignore all the words in the stream except the color word, and to use a number pad to indicate what color word they saw for every stream. After the attentional-blink task, participants were asked to indicate if they could define each of the taboo and neutral words to check for proficiency. Native English speakers were found to have a stronger AB (worse at identifying the color word) when they were presented with a taboo/sexual distractor compared to a neutral distractor. In the Chinese-English bilinguals, the AB depended on the age of second language acquisition. Bilinguals who learned English later on in life had ABs that were smaller for taboo/sexual words compared to early bilinguals. Even though early bilinguals had greater ABs for these taboo/sexual words than later bilinguals, early bilinguals still had shorter ABs than native speakers of English despite being fluent in English. These results further highlight the importance of considering age of acquisition. If a participant learns a second language earlier on in life, it is possible that he or she would consider that language almost as emotional as a native speaker of that language.

Overall, previous research has found that non-native speakers differ from native speakers in their ability to remember emotional words. Although native- and non-native speakers both have longer RTs in response to taboo words, alternative measures demonstrate that this taboo effect is only present (or is greater) in native speakers. Additionally, non-native speakers do not find languages learned later on in life to be as emotional as the first language. Factors that influence memory, emotionality, and arousal in non-native speakers include order of language acquisition, proficiency, and age of

acquisition.

Reprimands

Harris et al. (2003) examined if bilingual individuals found it easier to use reprimands and taboo words in their non-native language compared to their native language. Reprimands were included because the researchers considered reprimands to be emotional, just like taboo words. Reprimands are emotional expressions that people are exposed to in their childhood, usually in their native language. The researchers included reprimands to investigate the theory that emotional regulation systems develop at the same time as early language does so. These researchers proposed that because a person's native language has more emotions attached, exposure to emotional stimuli such as taboo words and reprimands in this language would elicit a physiological response that can be detected in the form of skin conductance. These researchers recruited Turkish-English bilinguals. English was the non-native language for all participants. Harris et al. compiled a list of English and Turkish stimuli belonging to five categories: neutral, positive, taboo, reprimand, and aversive. Participants were either instructed to read these words on a computer screen or heard the words through computer speakers. The participants were asked to rate the pleasantness of the stimuli presented. Participants' SCRs were recorded using fingertip electrodes throughout the experiment. The researchers found the highest SCRs with words from the taboo category in both languages. SCRs were found to be higher with taboo words in the native language. However, this difference was found to be statistically significant only when the stimuli were presented through the speakers rather than on the screen. Irrespective of whether the stimuli were presented visually or auditorily, reprimands in the native language resulted

in higher SCRs compared to reprimands in the non-native language. The researchers suggested that this difference might have occurred because participants attached these reprimands to specific childhood memories in which adults had used these reprimands. This reprimand effect was replicated in another study that investigated the effect of endearments, insults, and reprimands (Caldwell-Harris & Ayçiçeği-Dinn, 2009). The researchers found that although the insults and endearments also resulted in high SCRs, the effect was most pronounced for reprimands. For all three types of stimuli, there were reduced SCRs in English (the non-native language) compared to Turkish (the native language). However, the difference between the native and non-native language was strongest for reprimands.

A similar study was conducted by Caldwell-Harris, Tong, Lung, and Poo (2011) using Chinese-English bilinguals whose second language was English. The stimuli included Mandarin and English phrases that were neutral, taboo, insults, reprimands, and endearments. Participants were instructed to listen to the phrases through a computer speaker and to rate the emotional intensity of the phrases by pressing a key on a keyboard. Consistent with the previous study, participants' SCRs were recorded using electrodes at their fingertips. Participants rated Mandarin reprimands as more emotionally intense than English reprimands. English taboo phrases were rated as more emotionally intense than taboo phrases in Mandarin. SCRs were found to be higher for English endearments in participants who were not as proficient in English or used English the least. In contrast, participants who did not use Mandarin as often or were not as fluent in Mandarin had higher SCRs for Mandarin endearments. No SCR differences were found between English and Mandarin reprimands. This result was inconsistent with previous

studies by Harris et al. (2003), Eilola and Havelka (2011), and Caldwell-Harris and Ayçiçeği-Dinn (2009). Caldwell-Harris et al. (2011) suggest that this discrepancy might have occurred because their study required the participants to exert more effort than the previous studies because participants had to retrieve autobiographical memories in this study as opposed to tapping into their cultural and semantic knowledge in the previous studies, which is less effortful. Consequently, the elevated SCRs in English (resulting in levels equal to those for Mandarin reprimands) might have occurred as a result of effort-associated arousal rather than emotional arousal.

In conclusion, there are some conflicting findings in the literature about the emotionality of reprimands in a non-native language. However, to date, the weight of the evidence is consistent with the notion that people find reprimands more arousing in their native language compared to their non-native language.

Mouse Tracking

The study by Tuft et al. (2016) used computer mouse tracking to record participants' responses during the taboo Stroop task. In the current study, I also used mouse tracking because I aimed to replicate Tuft et al.'s (2016) results. I used the software MouseTracker, which was introduced by Freeman and Ambady in 2010 to examine real time processing of responses. This software allows researchers to record the manner in which participant mouse movement responses unfold (for a more detailed description of the software, see Freeman & Ambady, 2010.) Mouse tracking allows me to measure time course (speed of the mouse pointer) and intensity (trajectory of the mouse pointer) separately. Although MouseTracker allows a user to analyze several different variables, only reaction time (RT) and maximum deviation (MD) will be analyzed for the

purpose of my thesis research. Reaction time is defined as the time between participants' clicking the "START" button (to begin a trial) and clicking their response option (to end a trial). MD is defined as the greatest distance the participants' mouse trajectories deviated from the ideal trajectory (straightest path) between the "START" button and the correct response.

To my knowledge, the current experiment is the first to use computer mouse tracking to study reprimands. Previous research has only used skin conductance responses — a physiological measure — to gauge reactivity to reprimanding stimuli. The studies by Harris et al. (2003), Caldwell-Harris and Ayçiçeği-Dinn (2009), and Caldwell-Harris et al. (2011) took into account the mean and amplitude of the participants' responses to the reprimands. Additionally, participants in those previous studies were asked to rate the stimuli for emotional intensity by typing a key on a keyboard from one to seven. RTs taken to type the key were analyzed. Responses to reprimands over time were not analyzed. It is possible that asking participants to rate the stimuli might have made it easier for them to guess the hypothesis, influencing their response times. By using computer mouse tracking in the current study, I am the first to investigate the differences in responses throughout the trial between reactions to neutral and reprimanding phrases. RT and MD are both thought to represent how distracted participants are by a stimulus word/phrase (i.e. how much the stimuli grab the participants' attention). MD takes into account deviations throughout the entire duration of the trial. In the case of the taboo words and reprimands, their emotional nature makes them attention grabbing and arousing. Additionally, mouse tracking will allow me to investigate how reprimands are processed using a technique that may be less likely to be

susceptible to demand characteristics.

The Current Study

Successfully replicating a previous study provides increased confidence that the results are reliable. Fortunately, there are calls for increasing the number of replications in the field of psychology (Makel, Plucker, & Hegarty, 2012; Shrout & Rodgers, 2018). Given the current emphasis on replication, I attempted to replicate Tuft et al.'s (2016) results in this study by using the same set of taboo and neutral stimuli. However, instead of only presenting the stimuli visually via a computer screen, stimuli in the current study were presented both visually and auditorily. Consequently, this was not an exact replication, but rather an extension of the previous study with this one and only modification. The decision to use both visual and auditory presentation was based on Harris et al.'s (2003) suggestion that spoken language has more emotion associated with it, resulting in greater arousal. Harris et al.'s (2003) findings provide support for this suggestion. Taboo words can have consequences for spoken word recognition (Tuft, M^{c}Lennan, & Krestar, 2016). Presenting the stimuli auditorily can help gain a better understanding of these consequences.

As is the case with taboo words, reprimands also have emotions attached to them (Harris et al., 2003). In the current study, I also aimed to investigate whether the predicted taboo effect would extend to reprimands. The studies by Harris et al. (2003), Caldwell-Harris and Ayçiçeği-Dinn (2009), and Caldwell-Harris et al. (2011) measured SCRs and response times taken to press a key to rate the stimuli on emotional intensity — which might have increased the influence of demand characteristics on their responses. No previous study has used a behavioral measure looking at responses over time to

investigate the emotional nature of reprimands. I aimed to address this gap in the current study by using computer mouse tracking to determine how participants would respond to reprimands.

The results were expected to mirror those of Tuft et al. (2016). A taboo effect was anticipated, such that RTs to taboo words would be longer than RTs to neutral words. Similar results were expected with reprimands since it was anticipated that the emotions attached to reprimands should result in longer RTs for reprimanding phrases than neutral phrases. A difference between native- and non-native English speakers was also predicted. Despite an equivalent taboo (and reprimand) effect being expected for native and non-native speakers when it comes to RTs, when considering MD, greater taboo and reprimand effects were expected for native speakers. In other words, although native and non-native speakers of English were both predicted to have longer RTs for taboo words and reprimands compared to their neutral counterparts, no significant difference was expected between native and non-native speakers in the magnitude of this RT difference. Using MD, it was predicted that native English speakers would show a greater deviation for taboo words and reprimands compared to their neutral counterparts. In contrast, the MDs for non-native speakers were expected to be (more) similar for both categories of words and phrases.

CHAPTER II

EXPERIMENT: TABOO AND REPRIMAND STROOP TASKS

Method

Participants. The sample size was determined by conducting a power analysis using G*Power (Faul, Erdfelder, Lang, & Buchner, 2009). I chose to use a more conservative Cohen's d of 0.5, given that Winskel (2013) found a Word Type by Language interaction of $\eta_p^2 = .089$ (medium to large effect). Using this more conservative estimate, I determined that I needed to recruit 34 participants. Forty-eight participants with no reported speech, hearing, or visual disorders were recruited from the Department of Psychology Participant Pool at Cleveland State University. Half (n = 24) of these participants were native speakers of American English (L1); the other half were non-native (L2 or later) speakers of American English. Six participants from the L1 group were replaced[1]. Participants ranged in age from 18 to 30 years with a mean age of 19.75 years. The mean age of acquisition for the non-native speakers was 6.63 (*SD* = 3.81) years old. Each participant was given one research participation credit in exchange for an hour of participation.

[1] Four participants were replaced for following instructions incorrectly. Two participants were replaced because of technical difficulties.

Materials. The stimuli for the taboo Stroop consisted of 12 Taboo and 12 Neutral words chosen from McKay et al. (2004, See Appendix A). The words were presented in a colored font on a computer screen with MouseTracker software. A female monolingual native English-speaking Clevelander recorded all auditory stimulus words.

The reprimand Stroop task included 12 reprimanding phrases and 12 neutral phrases (See Appendix B). Six of these reprimanding phrases were taken from Harris, Aycicegi, and Gleason (2003), and I created the other six reprimanding and the 12 neutral phrases. Neutral phrases were matched to the reprimands on number of words. Also, the final word in each set of neutral and reprimanding phrases was identical. Like the taboo Stroop, the phrases were simultaneously presented on a computer screen as well as binaurally over headphones. However, only the last word of the phrases was in a colored font. The same native Clevelander who recorded the taboo and neutral words recorded these reprimands and neutral phrases. Consistent with the studies by Harris et al. (2003), Caldwell-Harris and Ayçiçeği-Dinn (2009), and Caldwell-Harris et al. (2011), the reprimanding phrases were spoken in an admonishing tone appropriate to the meaning of the phrase, and the neutral phrases were spoken in a neutral tone.

All auditory stimuli were recorded using Praat software (Boersma & Weenink, 2012). The stimuli were first normalized to 95% loudness and then equated to 68 db. To compare the difference in length between the taboo and neutral words, an independent samples *t*-test was performed. No significant difference was found between the duration of the taboo (M = 544 ms, SD = 108 ms) and neutral (M = 608 ms, SD = 93 ms) words, $t(22) = 1.554$, $p = .30$. Another independent samples *t*-test was performed to compare the durations of the reprimands and the neutral phrases. No significant difference was found

between the duration of the reprimands (M = 998 ms, SD = 145 ms) and neutral phrases (M = 913 ms, SD = 232 ms), $t(22) = -1.068$, $p = .30$.

Design. The study included two modified emotional Stroop tasks (taboo & reprimand) with two conditions each (Taboo Stroop: neutral & taboo; Reprimand Stroop: neutral phrases & reprimands). The order of the emotional Stroop tasks was counterbalanced across participants. There was a baseline task at the start of each emotional Stroop task to get the participants accustomed to the computer mouse, and to distract participants before they started the next Stroop task – in order to minimize the likelihood that performance on the second task was influenced by the emotional stimuli in the first task. For each task, participants responded to practice trials followed by a random presentation of 12 trials for each condition, for a total of 24 trials.

Procedure. As soon as participants entered the lab, they were provided with an informed consent form (See Appendix C). Participants were then informed that they may encounter offensive words during the experiment and that they were free to withdraw from the study at any time without penalty or loss of research credit. Participants then completed a participant information form (See Appendix D) and a handedness inventory (Oldfield, 1971; See Appendix E).

After completing the questionnaires, participants were seated in a cubicle where they were tested individually. Participants were then asked to read the instructions on the computer screen (See Appendix F), which was followed by the baseline task and then the taboo and reprimand Stroop tasks (the order of these two tasks was counterbalanced across participants). For every trial, participants clicked a button labeled "START" located at the bottom center of the screen. For the baseline task, participants clicked a

button labeled “Here” located at one of the corners at the top of the screen immediately after clicking “START.” After the baseline task, participants were then presented with the emotional Stroop tasks. As soon as they clicked the “START” button, participants were presented with a word (in the taboo Stroop) or a phrase (in the reprimand Stroop) on the screen. Participants also heard the word (or phrase) binaurally over headphones at the same time as the word (or phrase) was presented on the screen.

The entire word in the taboo Stroop – and only the last word in the reprimand Stroop – was presented in a colored font. Participants were instructed to ignore the meaning of the words and phrases and only focus on the color that the word was presented in on the screen. Participants were asked to decide which of the four colors (“BLUE”, “RED”, “YELLOW”, “GREEN”) located at the top of the screen matched the color of the word. For example, in a neutral trial of the taboo Stroop task, participants were simultaneously presented with the auditory word “HOST” through their headphones and on the visual word in a red font on the computer screen (see Figure 1). Their task was to move the mouse cursor up to the “RED” response option and click on it.

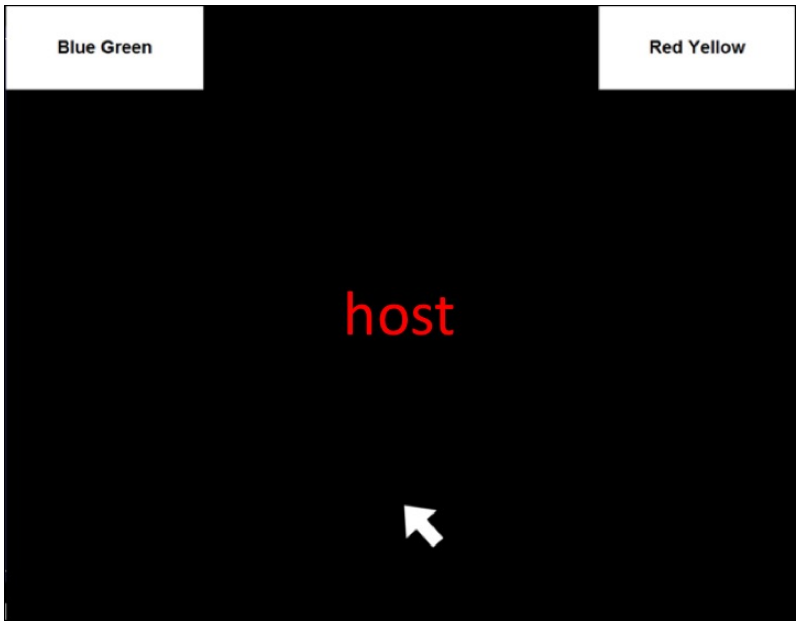

Figure 1. Neutral Trial in the Taboo Stroop Task.

In a taboo trial of the taboo Stroop task, participants were presented with the word "SHIT" through their headphones and on the computer screen in a red font (see Figure 2). Their task was to move the mouse cursor up to the "RED" response option and click on it.

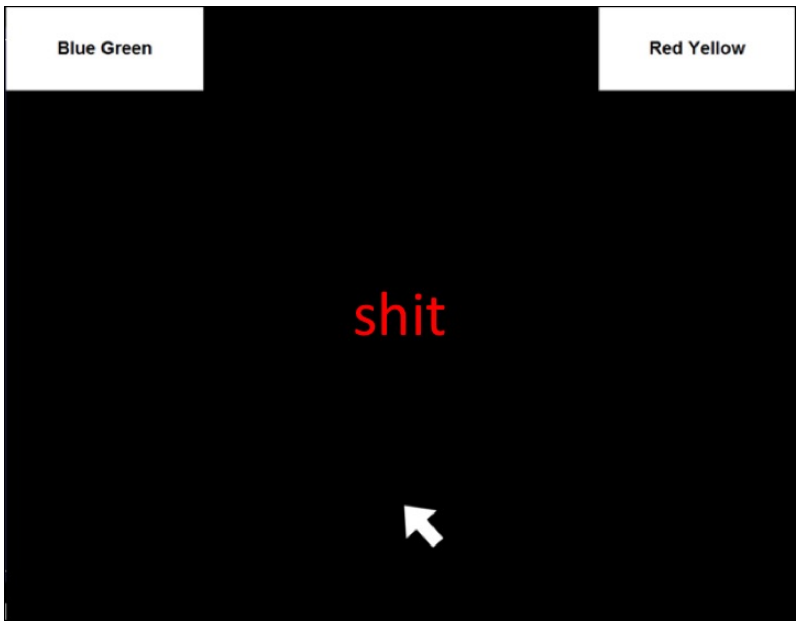

Figure 2. Taboo TRIAL in the Taboo Stroop Task.

In a neutral trial of the reprimand Stroop task, participants were presented with the phrase “LOOK AT THAT” through their headphones and on the computer screen at the same time. Only the word “THAT” was in a yellow font (see Figure 3). Just as in the taboo Stroop task, participants had to move the mouse cursor up to the “YELLOW” response option and click on it.

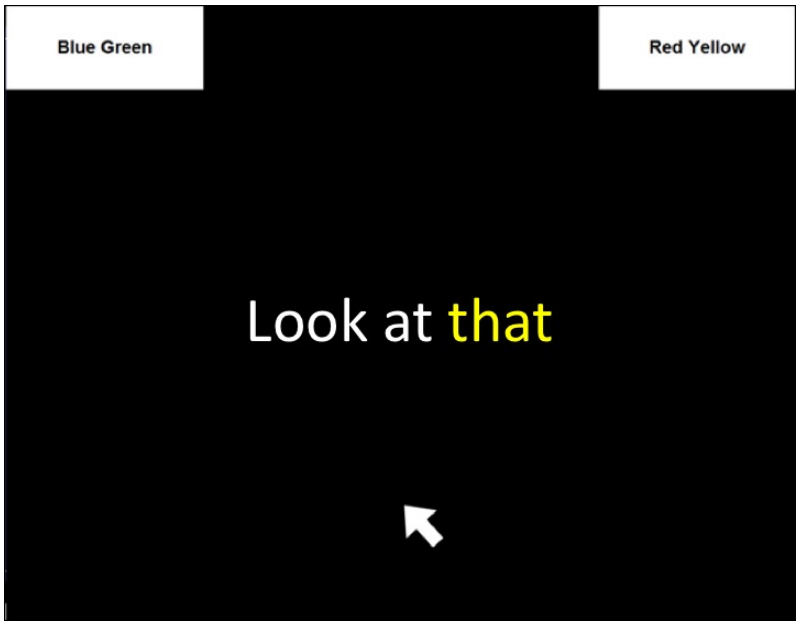

Figure 3. Neutral Trial in the Reprimand Stroop Task.

The reprimand trial of the reprimand Stroop task involved presenting participants with the reprimanding phrase “DON’T DO THAT!” through the headphones and on the computer screen. The word “THAT” was presented in a yellow font and participants had to move their mouse cursor up to the “YELLOW” response option to click on it (see Figure 4).

Figure 4. Reprimand Trial in the Reprimand Stroop Task.

The four colors were paired into two response alternatives with each of the responses appearing in the two top corners of the screen resulting in four versions. The order of these four versions was counterbalanced across participants. Participants were asked to perform the baseline task again between the two emotional Stroop tasks. Participants were instructed to click on the correct response as quickly and accurately as possible after they clicked the "START" button. After completing the Stroop tasks, participants were given a questionnaire in which they were asked to rate the words and phrases (See Appendix G), after which they were verbally debriefed and provided with the debriefing form (See Appendix I).

CHAPTER III

RESULTS

For each of the modified emotional Stroop tasks, there were 24 trials (12 per condition), resulting in a grand total of 1,152 trials for each Stroop task across the 48 participants. Consistent with the study by Tuft et al. (2016), trials with incorrect responses were not included. I discarded 14 trials from the taboo Stroop task (four neutral and nine taboo trials) and 15 trials from the reprimand Stroop (six neutral and nine reprimand trials) for having incorrect responses. None of the responses had initiation times greater than 500 ms[2]. There were two dependent variables, reaction time (RT) and maximum deviation (MD).

Taboo Stroop

I performed two separate 2 (Word Type: taboo, neutral) X 2 (Group: L1, L2) mixed ANOVAs, one on RTs and one on MD. Word Type was a within-participants' factor; Group was a between-participants' factor (quasi-independent variable).

Reaction Times. RT data showed a significant main effect of Word Type ($F(1,46) = 19.84$, $p < .001$, $\eta_p^2 = .301$). Across both groups, participants were slower to respond to taboo words (M = 1,304.52 ms, SD = 308.96 ms) compared to neutral words

[2] Initiation time is the time taken from clicking "START" to onset of mouse movement.

(M = 1,218.39 ms, SD = 267.79 ms). Neither the main effect of Group (F(1,46) = .28, p = .60, η_p^2 = .006) nor the Word Type by Group interaction F(1,46) = .61, p = .69, η_p^2 = .003) was significant.

Table 1: RTs for native- and non-native speakers in the taboo Stroop task

	Taboo		Neutral		
Group	M	SD	M	SD	Taboo Effect (Taboo - Neutral)
L1	1,322.30	285.16	1,243.89	256.27	78.41
L2	1,286.74	336.28	1,192.88	281.98	93.86

Maximum Deviation. A significant main effect of Word Type was observed (F(1,46) = 5.68, p = .02, η_p^2 = .11). L1 and L2 participants both had a greater MD in response to taboo words (M = .61, SD = .24) than neutral words (M = .55, SD = .20). Neither the main effect of Group F(1,46) = .17, p = .68, η_p^2 = .004) nor the Word Type by Group interaction F(1,46) = .02, p = .89, η_p^2 <.001) was significant.

Table 2: MD for native- and non-native speakers in the taboo Stroop task

	Taboo		Neutral		
Group	M	SD	M	SD	Taboo Effect (Taboo - Neutral)
L1	0.61	0.20	0.56	0.23	0.05
L2	0.61	0.27	0.54	0.18	0.07

Reprimand Stroop

I performed two separate 2 (Phrase Type: reprimand, neutral) X 2 (Group: L1, L2) mixed ANOVAs, one on RTs and one on MD. Phrase Type was a within-

participants' factor; Group was a between-participants' factor (quasi-independent variable).

Reaction Times. There was a significant main effect of Phrase Type ($F(1,46) = 4.89$, $p = .03$, $\eta_p^2 = .096$). L1 and L2 participants both had significantly faster responses to reprimands ($M = 1{,}207.60$ ms, $SD = 239.65$ ms) compared to neutral phrases ($M = 1{,}239.70$ ms, $SD = 261.35$ ms). Neither the main effect of Group $F(1,46) = .59$, $p = .45$, $\eta_p^2 = .013$) nor the Phrase Type by Group interaction $F(1,46) = .19$, $p = .665$, $\eta_p^2 = .004$) was significant.

Table 3: RTs for native- and non-native speakers in the reprimand Stroop task

	Reprimand		Neutral		
Group	M	SD	M	SD	Reprimand Effect (Reprimand - Neutral)
L1	1,238.13	214.85	1,263.90	250.32	-25.77
L2	1,177.07	263.16	1,215.50	275.12	-38.43

Maximum Deviation. No effects on MD were obtained. That is, the main effect of Phrase Type $F(1,46) = 2.05$, $p = .16$, $\eta_p^2 = .043$), the main effect of Group $F(1,46) = .41$, $p = .525$, $\eta_p^2 = .009$), and the Phrase Type by Group interaction $F(1,46) = .046$, $p = .831$, $\eta_p^2 = .001$) were all not statistically significant.

Table 4: MD for native- and non-native speakers in the reprimand Stroop task

	Reprimand		Neutral		
Group	M	SD	M	SD	Reprimand Effect (Reprimand - Neutral)
L1	0.54	0.20	0.57	0.18	-0.03
L2	0.56	0.15	0.60	0.20	-0.04

Exploratory Analyses

In addition to the a priori planned analyses, I also performed some unplanned exploratory analyses. One such analysis involved independent samples *t*-tests comparing the taboo effect between L1 and L2 participants. I conducted two separate independent samples *t*-tests, one on RTs and one on MD. The taboo effect is the difference between responses to taboo and neutral stimuli. For the RTs, no significant difference in the taboo effect between L1 (M = 78.41 ms, SD = 138.94 ms) and L2 (M = 93.86 ms, SD = 128.79 ms) participants was found $t(46) = -.40$, $p = .69$. Similarly, no significant difference was found for MD, with L1 (M = .05, SD = .169) and L2 (M = .07, SD = .169) participants having similar (and statistically equivalent) taboo effects, $t(46) = -.42$, $p = .68$.

Additionally, I performed an independent samples *t*-test to compare the difference in self-rated proficiency reported in the participant information questionnaire between L1 and L2 participants. No significant difference was found between the proficiency ratings of the L1 participants (M = 91.83, SD = 6.32) and the L2 participants (M = 88.14, SD = 9.03), $t(46) = 1.64$, $p = .12$.

CHAPTER IV

DISCUSSION

In the current study, I was interested in determining whether the results that Tuft et al. (2016) obtained would be replicated using the same set of taboo and neutral stimuli. Another purpose of this experiment was to determine if the taboo effect would generalize to reprimands. Responses to taboo words were significantly slower compared to responses to neutral words. Additionally, responses to taboo words were significantly more deviated than responses to neutral words. These results support the notion that taboo words are attention grabbing and arousing and are consistent with Tuft et al.'s (2016) results. Also consistent with Tuft et al.'s (2016) findings, group differences between L1 and L2 participants were not statistically significant. Participants also behaved differently than predicted in the reprimand Stroop task. Reprimanding phrases were expected to have longer RTs, greater MDs, or both relative to neutral phrases, paralleling the effect with taboo words. Interestingly, the opposite was found with RTs, with responses being faster for reprimands compared to neutral phrases, and no significant difference in MD values was observed between reprimands and neutral phrases.

The lack of group differences (between L1 & L2) in the emotional Stroop tasks

could be due to at least one of the following two explanations. First, it is possible that native- and non-native speakers simply do not differ in their processing of emotional stimuli. However, this explanation would be inconsistent with previous research (Colbeck & Bowers, 2012; Dewaele, 2004; Eilola & Havelka, 2011; Tuft et al., 2016). A second, more likely, explanation is that that the non-native participants in the current study simply behaved more like native speakers. There are two pieces of data that support this alternative explanation. First, participants in the current study had a rather early age of acquisition (M = 6.63 years). Previous research has found that emotional stimuli are processed similarly in non-native speakers with an early age of acquisition compared to their monolingual peers (Colbeck & Bowers, 2012; Harris, Gleason, & Aycicegi, 2006). To address this issue, participants who have acquired their second language after seven years of age could be recruited in future studies (Harris et al., 2006). Alternatively, in order to gain a better understanding of the role that age of acquisition plays in emotional language processing, researchers could compare performance between participants with early and later ages of acquisition across a wide range. The second piece of data that supports the alternative explanation, that the non-native participants in the current study simply behaved more like native speakers, is that there was no main effect of Group on either DV. In addition to the predicted interactions, in which the taboo and reprimand effects were expected to be greater in L1 than in L2 participants, a main effect of Group would have been expected (e.g., such that L2 participants would respond more slowly than L1 participants). The lack of any significant main effects of Group and the similar scores of self-rated proficiency of the L1 (M = 91.83, SD = 6.32) and L2 participants (M = 88.14, SD = 9.03) suggest that the two groups were more similar than might have been

expected.

One difference between the reprimand version and the taboo version of the Stroop task is that the items to which participants were responding to were repeated in the reprimand version but not in the taboo version. This repetition occurred because I made sure that the final word in each set of neutral and reprimanding phrases matched. As a result, participants indicated the color of the same word more than once in the reprimand Stroop task.

Given that a considerable amount of data were collected in the form of questions in the participant information form and the word and phrase ratings, there are several additional analyses that can be performed. However, these analyses are beyond the scope of this thesis. Additionally, there are more MouseTracker measures that are beyond the scope of this thesis, such as *x*-flips, *y*-flips, initiation times (ITs), Maximum Deviation Time (MD-time) and Area Under the Curve (AUC). Although analyses using these data and measures are beyond the scope of my thesis, I plan to perform such analyses in the near future.

The current study is not free from limitations. One limitation of this study is that participants were not tested for language proficiency. Instead, participants were asked to rate their own proficiency. Another limitation of this study is the fact that the experiment was conducted completely in English. Future research could consider comparing responses to stimuli in both of the languages that bilinguals speak by using taboo and reprimanding stimuli from both languages. Differences in performance between languages could be used to determine if proficiency or age of acquisition is more influential.

Recall that Eilola and Havelka (2011) found higher SCLs when participants were presented with negative and taboo words compared to positive and neutral words. It is likely that valence also plays a role, with participants performing differently in response to positive stimuli compared to negative stimuli. To investigate the effect of valence further, future research could also compare positive stimuli, such as endearments, to neutral phrases in addition to reprimands.

Being the first to investigate responses to reprimands using a behavioral measure investigating implicit processing of emotional stimuli, it was interesting to discover that people had faster responses to reprimands than to neutral phrases. This finding might indicate that participants respond faster to emotional stimuli like reprimands, and thus that participants respond differently to different categories of emotional stimuli. However, caution must be exercised before reaching this conclusion. Recall that neutral and reprimanding stimuli were spoken in different tones. Although the decision to use an admonishing tone for reprimands was made in order to follow what had been done in a previous study with reprimands, it is possible that the faster responses to reprimands is a result of the reprimanding phrases being recorded in an admonishing tone, and not just because of the emotional semantic nature of the reprimands. That is, the results might be a result of the difference in tone, or a combination of the type of phrase and tone used. One way these possibilities could be teased apart in future research is by recording both categories of phrases being spoken in admonishing and neutral tones. Although efforts were made to equate the reprimands and the neutral phrases for length (number of words) and the final word, the reprimands and the neutral phrases were not equated for predictability. The final word(s) in the reprimanding phrases may have been more

predictable than the final word(s) in the neutral phrases. If so, then responses to the reprimands may have been faster simply because they were more predictable. In the future, researchers are encouraged to equate reprimands and neutral phrases for predictability.

Consistent with what was observed in the taboo Stroop task, no statistically significant differences were found between and non-native speakers for the reprimand Stroop task. As previously discussed, the lack of group differences might be due to the participants' early age of acquisition. Future research should investigate reactions to reprimands in non-native speakers with later (or a wider range of) ages of acquisition. Doing so will also have important implications for the communication or expression of emotions with people who speak more than one language, particularly when communicating in their non-native language. Emotional content is often used in advertising to influence consumers. Although textual advertisements have been found to be more emotional in individuals' native languages, this effect was found to be influenced by how often participants experienced words in their native language compared to their non-native language (Puntoni, De Langhe, & Van Osselaer, 2009). Studying differences in emotional language processing in non-native speakers can help shed light on how to tailor messages to non-native speakers of another language. For example, advertisements and public service announcements that usually appeal to their audience's emotions could incorporate emotional language in a manner that would be better suited to non-native speakers. Such investigations may also lead to a greater insight into ways to help non-native speakers of a certain language in therapy for traumatic events. Language has been found to play an important role in the therapeutic process of

bilingual clients. Previous research has found that patients received different diagnoses based on the language in which a psychologist chose to interview the client (Malgady & Costantino, 1998). Language switching may not only help clients talk about their experiences objectively, it may also help build trusting relationships between patients and their therapists (Santiago-Rivera & Altarriba, 2002). Bager-Charleson, Dewaele, Costa, and Kasap (2017) suggest that therapists in core psychotherapy courses should be trained to learn about multilingualism because it can serve as a means to understand their multilingual clients' sense of self. Investigating emotional processing in non-native speakers would help to inform the development of language sensitive treatment approaches.

The results of the current study help to inform future theoretical, practical, and empirical developments in the field. For example, the current study lays the groundwork for additional research using mouse tracking to examine the unfolding of responses to different categories of emotional stimuli, and to studies examining processing differences between bilingual individuals' native and non-native languages.

REFERENCES

Anooshian, L. J., & Hertel, P. T. (1994). Emotionality in free recall: Language specificity in bilingual memory. *Cognition & Emotion*, *8*(6), 503-514.

Bager-Charleson, S., Dewaele, J. M., Costa, B., & Kasap, Z. (2017). A multilingual outlook: Can awareness-raising about multilingualism affect therapists' practice? A mixed-method evaluation. *Language and Psychoanalysis, 6*(2), 1-21.

Bialystok, E. (2017). The bilingual adaptation: How minds accommodate experience. *Psychological bulletin, 143*(3), 233.

Boersma, P. & Weenink, D. (2012). Praat: doing phonetics by computer [Computer program]. Version 5.3.24, retrieved 24 September 2012 from http://www.praat.org/

Caldwell-Harris, C. L. (2015). Emotionality differences between a native and foreign language: Implications for everyday life. *Current Directions in Psychological Science, 24*(3), 214-219.

Harris, C. L., Gleason, J. B., & Aycicegi, A. (2006). When is a first language more emotional? Psychophysiological evidence from bilingual speakers. *Bilingual Education and Bilingualism, 56*, 257.

Caldwell-Harris, C. L., Tong, J., Lung, W., & Poo, S. (2011). Physiological reactivity to emotional phrases in Mandarin-English bilinguals. *International Journal of Bilingualism*. Advance online publication. doi:10.1177/1367006910379262

Chen, P., Lin, J., Chen, B., Lu, C., & Guo, T. (2015). Processing emotional words in two languages with one brain: ERP and fMRI evidence from Chinese–English bilinguals. *Cortex, 71*, 34-48.

Colbeck, K. L., & Bowers, J. S. (2012). Blinded by taboo words in L1 but not L2. *Emotion*, *12*(2), 217.

Dewaele, J. M. (2004). The emotional force of swearwords and taboo words in the speech of multilinguals. *Journal of Multilingual and Multicultural Development*, *25*(2-3), 204-222.

Eilola, T. M., & Havelka, J. (2011). Behavioural and physiological responses to the emotional and taboo Stroop tasks in native and non-native speakers of English. *International Journal of Bilingualism*, *15*(3), 353-369.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191.

Freeman, J. B., & Ambady, N. (2010). MouseTracker: Software for studying real-time mental processing using a computer mouse-tracking method. *Behavior Research Methods, 42(*1), 226-241.

Harris, C. L., Aycicegi, A., & Gleason, J. B. (2003). Taboo words and reprimands elicit greater autonomic reactivity in a first language than in a second language. *Applied Psycholinguistics*, *24*(4), 561-579.

Jay, T., Caldwell-Harris, C., & King, K. (2008). Recalling taboo and nontaboo words. *The American journal of psychology*, 83-103.

Mackay, D. G., Shafto, M., Taylor, J. K., Marian, D. E., Abrams, L., & Dyer, J. R. (2004). Relations between emotion, memory, and attention: Evidence from taboo Stroop, lexical decision, and immediate memory tasks. *Memory & Cognition, 32*(3), 474-488.

Makel, M. C., Plucker, J. A., & Hegarty, B. (2012). Replications in psychology research: How often do they really occur? *Perspectives on Psychological Science, 7*(6), 537-542.

Malgady, R. G., & Costantino, G. (1998). Symptom severity in bilingual Hispanics as a function of clinician ethnicity and language of interview. *Psychological Assessment, 10*(2), 120.

Mathewson, K. J., Arnell, K. M., & Mansfield, C. A. (2008). Capturing and holding attention: The impact of emotional words in rapid serial visual presentation. *Memory & Cognition, 36*(1), 182-200.

Morris, C. D., Bransford, J. D., & Franks, J. J. (1977). Levels of processing versus transfer appropriate processing. *Journal of Verbal Learning and Verbal Behavior, 16(*5), 519-533.

Oldfield, R. C. (1971). The assessment and analysis of handedness: the Edinburgh inventory. *Neuropsychologia, 9*(1), 97-113.

Puntoni, S., De Langhe, B., & Van Osselaer, S. M. (2009). Bilingualism and the emotional intensity of advertising language. Journal of Consumer Research, 35(6), 1012-1025.

Santiago-Rivera, A. L., & Altarriba, J. (2002). The role of language in therapy with the Spanish-English bilingual client. *Professional Psychology: Research and Practice, 33*(1), 30.

Shrout, P. E., & Rodgers, J. L. (2018). Psychology, Science, and Knowledge Construction: Broadening Perspectives from the Replication Crisis. *Annual Review of Psychology, 69*, 487-510.

Tuft, S. E., Incera, S., & M[c]Lennan, C. T. (2016). Examining taboo effects in native and non-native speakers of American English. Poster presented at Psychonomics, Boston, Massachusetts.

Tuft, S. E., M[c]Lennan, C. T., & Krestar, M. L. (2016). Hearing taboo words can result in early talker effects in word recognition for female listeners. *The Quarterly Journal of Experimental Psychology*, 1-16.

Winskel, H. (2013). The emotional Stroop task and emotionality rating of negative and neutral words in late Thai–English bilinguals. *International Journal of Psychology, 48*(6), 1090-1098.

APPENDIX A

Taboo Stroop Stimuli List

Neutral Words	Taboo Words
Page	Scrotum
Attic	Anus
Cross	Bitch
Note	Nigger
Frame	Pussy
Bank	Cock
Wife	Piss
Brother	Queer
Senate	Dyke
Lung	Slut
Pity	Rape
Host	Shit
Hammer*	Hooker*
Noodles*	Nipples*
Boots*	Breasts*
Dose*	Damn*

*indicates words used during the practice block only

APPENDIX B

Reprimand Stroop Stimuli List

Neutral Phrases	Reprimanding Phrases
Look at that	Don’t do that**
I have a room	Go to your room**
I hear you	Shame on you**
Go up	Shut up**
Not that	Stop that**
She sees you	I hate you**
He goes there	Don’t go there
The word’s nice	That’s not nice
John’s wrong	You’re wrong
Jane’s now here	Get back here
She sat down	Put that down
Jim’s out	Get out
It’s no trouble*	You’re in big trouble*
Yes, she does seem better*	No, you don't know better*
Ask him yourself*	Behave yourself*
What is the time*	You've done it this time*

*indicates words used during the practice block only

**indicates a phrase taken from Harris, Aycicegi, and Gleason (2003)

APPENDIX C

Participant Consent Form

PARTICIPANT CONSENT FORM: LANGUAGE AND EMOTIONS
RACHEL B. FERNANDES, GRADUATE STUDENT: R.FERNANDES@VIKES.CSUOHIO.EDU
DR. M^{C}LENNAN, FACULTY ADVISOR: C.MCLENNAN@CSUOHIO.EDU, (216) 687-3750
LANGUAGE RESEARCH LABORATORY – UNION BUILDING 653, (216) 687-3834
CLEVELAND STATE UNIVERSITY: DEPARTMENT OF PSYCHOLOGY

Rachel is a graduate student working under Dr. M^{C}Lennan's supervision. Dr. M^{C}Lennan is an Associate Professor at Cleveland State University. The goal of this experiment is to learn more about the relationship between language and emotions at different ages.

You will see words on a computer screen and/or hear spoken words over headphones. These words may be offensive. You will respond to the words by pressing a response button, repeating the words aloud into a microphone, or clicking on a response with a computer mouse. You will be asked to fill out surveys by writing or typing your responses. In order to make sure your identity is confidential, we will assign you a number. All of your information will be coded with that number instead of your name.

The experiment takes up to 1 hour. You will receive **1 credit** of research participation or **$20** for your participation. You may stop this experiment at any time without loss of credit or money.

Your participation in this experiment involves minimal risks. You will be asked to provide more personal information than may have been provided within daily living. The researchers will do their best to keep your responses confidential. You may also have some negative feelings hearing and/or seeing some of these words. If you would like to discuss any of these feelings, you can contact the Counseling Center on campus, located in Union Building 220 (phone: 216-687-2277). There are two copies of this informed consent form, one for the researchers and one for you to keep for your own records.

Thank you!

"I understand what will happen during the experiment. I understand I may ask questions at the end of the experiment. I understand that there may be indirect benefits of this study, but the only direct benefit is that I will receive 1 credit of research participation or $20.

I understand that if I have any questions about my rights as a research subject, I can contact the Cleveland State University Institutional Review Board at (216) 687-3630.

I am 18 years or older and have read and understood this consent form. I give my consent to voluntarily participate in this experiment."

_____	_____
Signature of Participant	*Date*
_____	
Name of Participant (PLEASE PRINT)	*E-mail Address* / *Telephone Number*
_____	_____
Signature of Researcher	*Date*

APPENDIX D

Participant Information Form

PARTICIPANT INFORMATION FORM
RACHEL B. FERNANDES, GRADUATE STUDENT: R.FERNANDES@VIKES.CSUOHIO.EDU
DR. M[C]LENNAN, FACULTY ADVISOR: C.MCLENNAN@CSUOHIO.EDU, (216) 687-3750
LANGUAGE RESEARCH LABORATORY – UNION BUILDING 653, (216) 687-3834
CLEVELAND STATE UNIVERSITY: DEPARTMENT OF PSYCHOLOGY

FOR LRL USE:
Room #
Participant #_____
_____ (credits) OR $
Experiment
Date _____

Please fill in the following information:

1. Date of Birth: _____ **2.** Place of birth (City):_____

3. Gender: _____ **4.** Current Job: _____

4. Sexual Orientation: _____ **5.** Race: _____

6. Place of Longest Residence (City): _____

7. Years of Education: _____ **8.** Highest Degree earned: _____

9. Are you (circle one): right-handed left-handed ambidextrous

10. Would you like to be added to (or remain on) our "Paid Participants Database" so that we can notify you in the future of paid experiments for which you are eligible to participate? _____

11. Please list all the languages you know in order of dominance:

1	2	3	4	5

12. Please list all the languages you know in order of acquisition (your native language first):

1	2	3	4	5

13. At what age did you start to learn English? ***(Use 0 [zero] if English is your native language)*** _____

14. On average for the past year, please list what percentage of the time you use each language with ***family***. ***(Your percentages should add up to 100%)***

List language here:	English				
List percentage here:					

15. On average for the past year, please list what percentage of the time you use each language with ***friends***. ***(Your percentages should add up to 100%)***

List language here:	English				
List percentage here:					

16. On average for the past year, please list what percentage of the time you use each language at ***school***. ***(Your percentages should add up to 100%;*** **Place a X under English if you have not been in school for the past year)**

List language here:	English				
List percentage here:					

17. On average for the past year, please list what percentage of the time you use each language at ***work***. ***(Percentages should add up to 100%;*** **Place a X under English if you have not worked for the past year)**

List language here:	English				
List percentage here:					

18. On average for the past year, please list what percentage of the time you use each language to ***express your emotions***. ***(Percentages should add up to 100%)***

List language here:	English				
List percentage here:					

19. On average for the past year, please list what percentage of the time you use each language to ***swear/curse***. ***(Percentages should add up to 100%)***

List language here:	English				
List percentage here:					

20. On average for the past year, please list what percentage of the time you ***use*** each language. ***(Percentages should add up to 100%)***

List language here:	English				
List percentage here:					

When providing your rating for questions 21 - 24, please assume that a person who only speaks English is, on average, a 90:

21. From 0 to 100, please rate your level of proficiency in ***speaking English***: _____

22. From 0 to 100, please rate your level of proficiency in ***understanding spoken English***: _____

23. From 0 to 100, please rate your level of proficiency in ***reading English***: _____

24. From 0 to 100, please rate your level of proficiency in ***writing English***: _____

25. Have you ever had a hearing or speech disorder?

(circle one) YES NO

If yes, please explain: _____

26. Have you ever had a visual or reading disorder (other than glasses/contacts)?

(circle one) YES NO

If yes, please explain: _____

27. Have you ever been diagnosed with Attention Deficit Disorder (ADD) or Attention Deficit Hyperactivity Disorder (ADHD)?

(circle one) YES NO

If yes, please explain: _____

If you speak more than one language please answer questions 28 – 30 *(If English is your only language, skip to question 31):*

28. Does the phrase "**I love you**" have the same emotional weight for you in your different languages?

(circle one) YES NO

If no, which language does it feel strongest in? _____

_____

29. If you were to recall some **bad or difficult memories**, which language would you prefer to discuss them in? _____

_____

30. If you were to recall some **good or positive memories**, which language would you prefer to discuss them in? _____

_____

31. Is there anything else you wish to share about your language experiences?

_____

_____

_____

APPENDIX E

Edinburgh Handedness Inventory [modified and completed on computer]

HANDEDNESS INVENTORY
RACHEL B. FERNANDES, GRADUATE STUDENT: R.FERNANDES@VIKES.CSUOHIO.EDU
DR. M[C]LENNAN, FACULTY ADVISOR: C.MCLENNAN@CSUOHIO.EDU, (216) 687-3750
LANGUAGE RESEARCH LABORATORY – UNION BUILDING 653, (216) 687-3834
CLEVELAND STATE UNIVERSITY: DEPARTMENT OF PSYCHOLOGY

FOR LRL USE:
Room #
Participant #
_____ (credits) OR $
Experiment
Date _____

Instructions: There are no right or wrong answers. For each of the activities below, please indicate: "Which hand you prefer for that activity?" and "Do you ever use the other hand for the activity?" by ***circling*** your response.

1. Which hand do you prefer to use when ***writing***?
   Left Right No Preference
   Do you ever use the other hand?
   YES NO
2. Which hand do you prefer to use when ***drawing***?
   Left Right No Preference
   Do you ever use the other hand?
   YES NO
3. Which hand do you prefer to use when ***throwing***?
   Left Right No Preference
   Do you ever use the other hand?
   YES NO
4. Which hand do you prefer to use when ***using scissors***?
   Left Right No Preference
   Do you ever use the other hand?
   YES NO
5. Which hand do you prefer to use when ***using a toothbrush***?
   Left Right No Preference
   Do you ever use the other hand?
   YES NO
6. Which hand do you prefer to use when ***using a knife (without a fork)***?
   Left Right No Preference
   Do you ever use the other hand?
   YES NO
7. Which hand do you prefer to use when ***using a spoon***?
   Left Right No Preference
   Do you ever use the other hand?
   YES NO
8. Which hand do you prefer to use when ***using a broom (upper hand)***?
   Left Right No Preference
   Do you ever use the other hand?
   YES NO
9. Which hand do you prefer to use when ***striking a match***?
   Left Right No Preference
   Do you ever use the other hand?
   YES NO
10. Which hand do you prefer to use when ***opening a box (holding the lid)***?
    Left Right No Preference
    Do you ever use the other hand?
    YES NO

APPENDIX F

Stroop Task Instructions

Welcome to the Language Research Laboratory. We appreciate you helping us today.

We will begin with a brief practice phase to familiarize you with the program. Your task is to simply **click where it says "Here"** as quickly and as accurately as possible.

A typical trial will proceed as follows: the response options and a start cue will appear on the computer screen. As soon as you click START you will have to click on the response option that says "Here". As soon as you have made a response, a new trial will begin.

If you have any questions, please ask the experimenter now.

Let the experimenter know when you are ready to begin the experiment.

Thank you!

In the experiment that you will be participating in next, you will see words in different color fonts on the computer screen and hear words through the headphones that will be provided to you. Your task is to ignore the meaning of the words and to simply **click on the color** in which they are printed as quickly and as accurately as possible.

A typical trial will proceed as follows: four response options and a start cue will appear on the computer screen. As soon as you click on the start cue, a word will appear on the screen and will be played through the headphones. As quickly as possible (it is important to begin moving the mouse toward a response option immediately), click on the color in which the word is printed. Remember to be sure to begin moving the mouse as soon as you see the stimulus word presented. As soon as you have made a response, a new trial will begin.

We will begin with a brief practice phase to familiarize you with the experiment. If you have any questions, please ask the experimenter now.

Let the experimenter know when you are ready to begin the experiment.

Thank you.

In the experiment that you will be participating in next, you will see phrases on the computer screen and hear phrases through the headphones that will be provided to you. Only one word in this phrase will be in a colored font. Your task is to ignore the meaning of the phrases and to simply **click on the color** in which the words are printed as quickly and as accurately as possible.

A typical trial will proceed as follows: four response options and a start cue will appear on the computer screen. As soon as you click on the start cue, a phrase will appear on the screen and will be played through the headphones. As quickly as possible (it is important to begin moving the mouse toward a response option immediately), click on the color in which the last word of the phrase is printed. Remember to be sure to begin moving the mouse as soon as you see the stimulus word presented. As soon as you have made a response, a new trial will begin.

We will begin with a brief practice phase to familiarize you with the experiment. If you have any questions, please ask the experimenter now.

Let the experimenter know when you are ready to begin the experiment.

Thank you.

APPENDIX G

Word Ratings Questionnaire

WORD RATINGS

RACHEL B. FERNANDES, GRADUATE STUDENT: R.FERNANDES@VIKES.CSUOHIO.EDU, (216) 687-3834

DR. MCLENNAN, FACULTY ADVISOR: C.MCLENNAN@CSUOHIO.EDU, (216) 687-3750

LANGUAGE RESEARCH LABORATORY – UNION BUILDING 653

CLEVELAND STATE UNIVERSITY: DEPARTMENT OF PSYCHOLOGY

FOR LRL USE:

Room # _____

Participant # _____

_____ (credits) OR $ _____

Experiment _____

Date _____

Experimenter _____

Instructions: In this study we are interested in how people perceive words. You will be given a list of words and phrases—your task is to rate each word and phrase according to the scales that are presented on the page. Please be as honest as possible in your judgments; they are very important to us! Work at a rapid pace and don't spend too much time on each word. Make your ratings based on your first reaction to the word/phrase. Please circle your rating.

Read the scales carefully before you start rating the words!

Part 1a: Please rate each word using the following question:

How often do **YOU** use the word in any way—speaking or writing?

1	2	3	4	5	6	7	8	9
I never use this word			I sometimes use this word			I use this word all the time		
Anus	1	2	3	4	5	6	7	8	9
Attic	1	2	3	4	5	6	7	8	9
Bank	1	2	3	4	5	6	7	8	9
Bitch	1	2	3	4	5	6	7	8	9
Brother	1	2	3	4	5	6	7	8	9
Cock	1	2	3	4	5	6	7	8	9
Cross	1	2	3	4	5	6	7	8	9
Dyke	1	2	3	4	5	6	7	8	9
Frame	1	2	3	4	5	6	7	8	9
Host	1	2	3	4	5	6	7	8	9
Lung	1	2	3	4	5	6	7	8	9
Nigger	1	2	3	4	5	6	7	8	9
Note	1	2	3	4	5	6	7	8	9
Page	1	2	3	4	5	6	7	8	9
Piss	1	2	3	4	5	6	7	8	9
Pity	1	2	3	4	5	6	7	8	9
Pussy	1	2	3	4	5	6	7	8	9
Queer	1	2	3	4	5	6	7	8	9
Rape	1	2	3	4	5	6	7	8	9
Scrotum	1	2	3	4	5	6	7	8	9
Senate	1	2	3	4	5	6	7	8	9
Shit	1	2	3	4	5	6	7	8	9
Slut	1	2	3	4	5	6	7	8	9
Wife	1	2	3	4	5	6	7	8	9

Part 1b: Please rate each phrase using the following question:

How often do **YOU** use the phrase in any way—speaking or writing?

	1	2	3	4	5	6	7	8	9
	I never use this phrase			I sometimes use this phrase			I use this phrase all the time		
Don't do that	1	2	3	4	5	6	7	8	9
Don't go there	1	2	3	4	5	6	7	8	9
Get back here	1	2	3	4	5	6	7	8	9
Get out	1	2	3	4	5	6	7	8	9
Go to your room	1	2	3	4	5	6	7	8	9
Go up	1	2	3	4	5	6	7	8	9
He goes there	1	2	3	4	5	6	7	8	9
I hate you	1	2	3	4	5	6	7	8	9
I have a room	1	2	3	4	5	6	7	8	9
I hear you	1	2	3	4	5	6	7	8	9
Jane's now here	1	2	3	4	5	6	7	8	9
Jim's out	1	2	3	4	5	6	7	8	9
John's wrong	1	2	3	4	5	6	7	8	9
Look at that	1	2	3	4	5	6	7	8	9
Not that	1	2	3	4	5	6	7	8	9
Put that down	1	2	3	4	5	6	7	8	9
Shame on you	1	2	3	4	5	6	7	8	9
She sat down	1	2	3	4	5	6	7	8	9
She sees you	1	2	3	4	5	6	7	8	9
Shut up	1	2	3	4	5	6	7	8	9
Stop that	1	2	3	4	5	6	7	8	9
That's not nice	1	2	3	4	5	6	7	8	9
The word's nice	1	2	3	4	5	6	7	8	9
You're wrong	1	2	3	4	5	6	7	8	9

Part 2a: Please rate each word using the following question:

How often do you **encounter** the word? For example, you may hear it used in a conversation, on the radio, in a movie or on TV, or you may read the word in a magazine, book, on the Internet, etc.

	1	2	3	4	5	6	7	8	9
	I never encounter this word			I sometimes encounter this word			I encounter this word all the time		
Anus	1	2	3	4	5	6	7	8	9
Attic	1	2	3	4	5	6	7	8	9
Bank	1	2	3	4	5	6	7	8	9
Bitch	1	2	3	4	5	6	7	8	9
Brother	1	2	3	4	5	6	7	8	9
Cock	1	2	3	4	5	6	7	8	9
Cross	1	2	3	4	5	6	7	8	9
Dyke	1	2	3	4	5	6	7	8	9
Frame	1	2	3	4	5	6	7	8	9
Host	1	2	3	4	5	6	7	8	9
Lung	1	2	3	4	5	6	7	8	9
Nigger	1	2	3	4	5	6	7	8	9
Note	1	2	3	4	5	6	7	8	9
Page	1	2	3	4	5	6	7	8	9
Piss	1	2	3	4	5	6	7	8	9
Pity	1	2	3	4	5	6	7	8	9
Pussy	1	2	3	4	5	6	7	8	9
Queer	1	2	3	4	5	6	7	8	9
Rape	1	2	3	4	5	6	7	8	9
Scrotum	1	2	3	4	5	6	7	8	9
Senate	1	2	3	4	5	6	7	8	9
Shit	1	2	3	4	5	6	7	8	9
Slut	1	2	3	4	5	6	7	8	9
Wife	1	2	3	4	5	6	7	8	9

Part 2b: Please rate each phrase using the following question:

How often do you **encounter** the phrase? For example, you may hear it used in a conversation, on the radio, in a movie or on TV, or you may read the word in a magazine, book, on the Internet, etc.

	1	2	3	4	5	6	7	8	9
	I never encounter this phrase			I sometimes encounter this phrase			I encounter this phrase all the time		
Don't do that	1	2	3	4	5	6	7	8	9
Don't go there	1	2	3	4	5	6	7	8	9
Get back here	1	2	3	4	5	6	7	8	9
Get out	1	2	3	4	5	6	7	8	9
Go to your room	1	2	3	4	5	6	7	8	9
Go up	1	2	3	4	5	6	7	8	9
He goes there	1	2	3	4	5	6	7	8	9
I hate you	1	2	3	4	5	6	7	8	9
I have a room	1	2	3	4	5	6	7	8	9
I hear you	1	2	3	4	5	6	7	8	9
Jane's now here	1	2	3	4	5	6	7	8	9
Jim's out	1	2	3	4	5	6	7	8	9
John's wrong	1	2	3	4	5	6	7	8	9
Look at that	1	2	3	4	5	6	7	8	9
Not that	1	2	3	4	5	6	7	8	9
Put that down	1	2	3	4	5	6	7	8	9
Shame on you	1	2	3	4	5	6	7	8	9
She sat down	1	2	3	4	5	6	7	8	9
She sees you	1	2	3	4	5	6	7	8	9
Shut up	1	2	3	4	5	6	7	8	9
Stop that	1	2	3	4	5	6	7	8	9
That's not nice	1	2	3	4	5	6	7	8	9
The word's nice	1	2	3	4	5	6	7	8	9
You're wrong	1	2	3	4	5	6	7	8	9

Part 3a: Please rate each word using the following question:

How positive or negative is the word?

1	2	3	4	5	6	7	8	9
Strongly negative				Not negative or positive				Strongly positive
Anus	1	2	3	4	5	6	7	8	9
Attic	1	2	3	4	5	6	7	8	9
Bank	1	2	3	4	5	6	7	8	9
Bitch	1	2	3	4	5	6	7	8	9
Brother	1	2	3	4	5	6	7	8	9
Cock	1	2	3	4	5	6	7	8	9
Cross	1	2	3	4	5	6	7	8	9
Dyke	1	2	3	4	5	6	7	8	9
Frame	1	2	3	4	5	6	7	8	9
Host	1	2	3	4	5	6	7	8	9
Lung	1	2	3	4	5	6	7	8	9
Nigger	1	2	3	4	5	6	7	8	9
Note	1	2	3	4	5	6	7	8	9
Page	1	2	3	4	5	6	7	8	9
Piss	1	2	3	4	5	6	7	8	9
Pity	1	2	3	4	5	6	7	8	9
Pussy	1	2	3	4	5	6	7	8	9
Queer	1	2	3	4	5	6	7	8	9
Rape	1	2	3	4	5	6	7	8	9
Scrotum	1	2	3	4	5	6	7	8	9
Senate	1	2	3	4	5	6	7	8	9
Shit	1	2	3	4	5	6	7	8	9
Slut	1	2	3	4	5	6	7	8	9
Wife	1	2	3	4	5	6	7	8	9

Part 3b: Please rate each phrase using the following question:

How positive or negative is the phrase?

1	2	3	4	5	6	7	8	9
Strongly negative				Not negative or positive				Strongly positive
Don't do that	1	2	3	4	5	6	7	8	9
Don't go there	1	2	3	4	5	6	7	8	9
Get back here	1	2	3	4	5	6	7	8	9
Get out	1	2	3	4	5	6	7	8	9
Go to your room	1	2	3	4	5	6	7	8	9
Go up	1	2	3	4	5	6	7	8	9
He goes there	1	2	3	4	5	6	7	8	9
I hate you	1	2	3	4	5	6	7	8	9
I have a room	1	2	3	4	5	6	7	8	9
I hear you	1	2	3	4	5	6	7	8	9
Jane's now here	1	2	3	4	5	6	7	8	9
Jim's out	1	2	3	4	5	6	7	8	9
John's wrong	1	2	3	4	5	6	7	8	9
Look at that	1	2	3	4	5	6	7	8	9
Not that	1	2	3	4	5	6	7	8	9
Put that down	1	2	3	4	5	6	7	8	9
Shame on you	1	2	3	4	5	6	7	8	9
She sat down	1	2	3	4	5	6	7	8	9
She sees you	1	2	3	4	5	6	7	8	9
Shut up	1	2	3	4	5	6	7	8	9
Stop that	1	2	3	4	5	6	7	8	9
That's not nice	1	2	3	4	5	6	7	8	9
The word's nice	1	2	3	4	5	6	7	8	9
You're wrong	1	2	3	4	5	6	7	8	9

Part 4a: Please rate each word using the following question:

How exciting is the word? Consider how much the word **grabs your attention**.

1	2	3	4	5	6	7	8	9
Not at all arousing				Medium arousing				Very arousing
Anus	1	2	3	4	5	6	7	8	9
Attic	1	2	3	4	5	6	7	8	9
Bank	1	2	3	4	5	6	7	8	9
Bitch	1	2	3	4	5	6	7	8	9
Brother	1	2	3	4	5	6	7	8	9
Cock	1	2	3	4	5	6	7	8	9
Cross	1	2	3	4	5	6	7	8	9
Dyke	1	2	3	4	5	6	7	8	9
Frame	1	2	3	4	5	6	7	8	9
Host	1	2	3	4	5	6	7	8	9
Lung	1	2	3	4	5	6	7	8	9
Nigger	1	2	3	4	5	6	7	8	9
Note	1	2	3	4	5	6	7	8	9
Page	1	2	3	4	5	6	7	8	9
Piss	1	2	3	4	5	6	7	8	9
Pity	1	2	3	4	5	6	7	8	9
Pussy	1	2	3	4	5	6	7	8	9
Queer	1	2	3	4	5	6	7	8	9
Rape	1	2	3	4	5	6	7	8	9
Scrotum	1	2	3	4	5	6	7	8	9
Senate	1	2	3	4	5	6	7	8	9
Shit	1	2	3	4	5	6	7	8	9
Slut	1	2	3	4	5	6	7	8	9
Wife	1	2	3	4	5	6	7	8	9

Part 4b: Please rate each phrase using the following question:

How exciting is the phrase? Consider how much the word **grabs your attention**.

1 Not at all arousing	2	3	4	5 Medium arousing	6	7	8	9 Very arousing
Don't do that	1	2	3	4	5	6	7	8	9
Don't go there	1	2	3	4	5	6	7	8	9
Get back here	1	2	3	4	5	6	7	8	9
Get out	1	2	3	4	5	6	7	8	9
Go to your room	1	2	3	4	5	6	7	8	9
Go up	1	2	3	4	5	6	7	8	9
He goes there	1	2	3	4	5	6	7	8	9
I hate you	1	2	3	4	5	6	7	8	9
I have a room	1	2	3	4	5	6	7	8	9
I hear you	1	2	3	4	5	6	7	8	9
Jane's now here	1	2	3	4	5	6	7	8	9
Jim's out	1	2	3	4	5	6	7	8	9
John's wrong	1	2	3	4	5	6	7	8	9
Look at that	1	2	3	4	5	6	7	8	9
Not that	1	2	3	4	5	6	7	8	9
Put that down	1	2	3	4	5	6	7	8	9
Shame on you	1	2	3	4	5	6	7	8	9
She sat down	1	2	3	4	5	6	7	8	9
She sees you	1	2	3	4	5	6	7	8	9
Shut up	1	2	3	4	5	6	7	8	9
Stop that	1	2	3	4	5	6	7	8	9
That's not nice	1	2	3	4	5	6	7	8	9
The word's nice	1	2	3	4	5	6	7	8	9
You're wrong	1	2	3	4	5	6	7	8	9

Part 5: Please rate each word using the following question:

How offensive is the word to **YOU**?

	1	2	3	4	5	6	7	8	9
	I am not at all offended by this word								This word is very offensive to me
Anus	1	2	3	4	5	6	7	8	9
Attic	1	2	3	4	5	6	7	8	9
Bank	1	2	3	4	5	6	7	8	9
Bitch	1	2	3	4	5	6	7	8	9
Brother	1	2	3	4	5	6	7	8	9
Cock	1	2	3	4	5	6	7	8	9
Cross	1	2	3	4	5	6	7	8	9
Dyke	1	2	3	4	5	6	7	8	9
Frame	1	2	3	4	5	6	7	8	9
Host	1	2	3	4	5	6	7	8	9
Lung	1	2	3	4	5	6	7	8	9
Nigger	1	2	3	4	5	6	7	8	9
Note	1	2	3	4	5	6	7	8	9
Page	1	2	3	4	5	6	7	8	9
Piss	1	2	3	4	5	6	7	8	9
Pity	1	2	3	4	5	6	7	8	9
Pussy	1	2	3	4	5	6	7	8	9
Queer	1	2	3	4	5	6	7	8	9
Rape	1	2	3	4	5	6	7	8	9
Scrotum	1	2	3	4	5	6	7	8	9
Senate	1	2	3	4	5	6	7	8	9
Shit	1	2	3	4	5	6	7	8	9
Slut	1	2	3	4	5	6	7	8	9
Wife	1	2	3	4	5	6	7	8	9

Part 6: Please rate each word using the following question:

How taboo or **socially unacceptable** is the word to **people in general**? Imagine the word being used at work, in a classroom, at a religious service, at a cocktail party, with friends, with family, etc.

	1	2	3	4	5	6	7	8	9
	Not at all taboo				Medium taboo				Very taboo
Anus	1	2	3	4	5	6	7	8	9
Attic	1	2	3	4	5	6	7	8	9
Bank	1	2	3	4	5	6	7	8	9
Bitch	1	2	3	4	5	6	7	8	9
Brother	1	2	3	4	5	6	7	8	9
Cock	1	2	3	4	5	6	7	8	9
Cross	1	2	3	4	5	6	7	8	9
Dyke	1	2	3	4	5	6	7	8	9
Frame	1	2	3	4	5	6	7	8	9
Host	1	2	3	4	5	6	7	8	9
Lung	1	2	3	4	5	6	7	8	9
Nigger	1	2	3	4	5	6	7	8	9
Note	1	2	3	4	5	6	7	8	9
Page	1	2	3	4	5	6	7	8	9
Piss	1	2	3	4	5	6	7	8	9
Pity	1	2	3	4	5	6	7	8	9
Pussy	1	2	3	4	5	6	7	8	9
Queer	1	2	3	4	5	6	7	8	9
Rape	1	2	3	4	5	6	7	8	9
Scrotum	1	2	3	4	5	6	7	8	9
Senate	1	2	3	4	5	6	7	8	9
Shit	1	2	3	4	5	6	7	8	9
Slut	1	2	3	4	5	6	7	8	9
Wife	1	2	3	4	5	6	7	8	9

APPENDIX H

Debriefing Form

DEBRIEFING FORM
RACHEL B. FERNANDES, GRADUATE STUDENT: R.FERNANDES@VIKES.CSUOHIO.EDU, (216) 687-3834
DR. MCLENNAN, FACULTY ADVISOR: C.MCLENNAN@CSUOHIO.EDU, (216) 687-3750
LANGUAGE RESEARCH LABORATORY – UNION BUILDING 653
CLEVELAND STATE UNIVERSITY: DEPARTMENT OF PSYCHOLOGY

Thank you for your participation in this experiment today! In the Language Research Laboratory, we are interested in discovering how people understand spoken and written language. Specifically, we are interested in learning how word meaning might affect your performance on cognitive tasks.

Thanks again for your participation in this experiment. If you have friends participating in experiments in this laboratory, please keep the purpose of this experiment confidential in case we ask them to participate in the future.

Any data you have provided will be kept confidential. Any information you provided relating to perceptual impairments will not be tied directly to your name.

Some participants may experience negative feelings about their performance in the experiment. If you would like to discuss any of these feelings, please feel free to contact the Counseling Center on campus at Cleveland State University, located in Union Building 220 (phone: 216-687-2277). If you have any questions about your rights as a research subject, you can contact the Cleveland State University Institutional Review Board at (216) 687-3630.

If you have any further questions about this experiment, please feel free to ask. You may also contact the Language Research Laboratory at (216) 687-3834 if you have questions later that you wish to have answered.

Please follow us on Facebook or Twitter:

https://www.facebook.com/languageresearch

@CSULRL