But Words Will Never Hurt Me

Jennifer Duncan, B.S.[a]

Erin M. Buchanan, Ph.D.[a]

Caleb Z. Marshall[a]

Katerina M. Oberdieck, M.S.[a]

[a]Missouri State University, Psychology Department

901 S National Ave, Springfield, MO 65897

Abstract

It is no secret that people often use taboo words when speaking about persons and objects in their environment. Taboo words are charged with emotion and have observable impact on the listener as well as the speaker. The purpose of this study was to determine whether taboo words were quantitatively more offensive when used in combination with a proper name versus being used with a non-human object. We found that using taboo words to describe proper names does not cause a significant effect; however, we found that participants rated certain categories of taboo words as more offensive than other categories. In a second experiment, taboo words did affect ratings and memory for proper names and non-human objects.

Keywords: taboo, curse, linguistics, memory

But Words Will Never Hurt Me

In *The Better Angels of Our Nature: Why Violence Has Declined*, Pinker (2011) states many of the social rules that we take for granted or consider "stuffy" are traditions from a more uncivilized time when the more sophisticated members of society attempted to curb violent outbursts among the populace. Pinker suggests that as society became more sophisticated and less violent, social norms (such as proper table manners) began to relax. Although humans can communicate with gestures and facial expressions, meaningful social interaction relies heavily on language to convey precise meaning. Specifically, taboo words can be used to express strong emotion, to relieve tension or frustration, or to gain a sense of camaraderie (LaPointe, 2006). Often, they are used for their shock value, though many taboo words have lost their ability to outrage due to their increasingly common usage. Still, a myriad of studies has explored the interaction of race and gender with taboo words (Jacobi, 2014), as well as their function in television and radio (Coyne, Stockdale, Nelson, & Fraser, 2011), video games (Ivory & Kaestle, 2013) and law enforcement (Patton, Asken, Fremouw, & Bemis, 2017). This background literature reveals the nuanced and unique linguistic function which taboo words perform in our social interactions.

Profanities: definitions and classifications

What criterion must a word meet before it is considered *taboo*? Perhaps the word incurs censorship, fines, or other sanctions from broadcast media (Kaye & Sapolsky, 2009). It could be a word that is barred by religious institutions. Perhaps it is word that evokes an emotional response from the listener, as evidenced by galvanic skin response readings (Bowers & Pleydell-Pearce, 2011). It may be a word that would be used in informal settings, but would be considered

inappropriate in formal settings, such as around co-workers or one's parents. Lastly, the taboo word is most likely perceived as causing harm, dishonor or injury to the listener (Jay, 2009a).

For a singular word to be perceived as harmful may seem excessive – many of the words we censor today might not have elicited much surprise or chagrin in the past. According to Mohr (2013), common taboo words have changed significantly throughout recorded history. Interestingly, many of the words we now consider taboo entered the language as innocuous terms used in everyday conversation by the lower social classes. Because of social separation, the elite would avoid using the lower dialectical vocabulary so as not to appear coarse, common, or crude. Over time, proscription of "common" words trickled down to the lower castes, making ordinary words unacceptable across every class of people. A somewhat recent example of this is when a member the Middleton family used the word "toilet" instead of "lavatory" in front of the Queen of England, a *faux-pas* which distinguished them as members of a 'lower' social caste than the royal family (Hoey, 2011).

Why are some words considered more taboo than others? One explanation is that we are socialized to believe that they are dirty, as there is some evidence that social learning and conditioning are rooted in our perception of obscene words (Jay, 2000a). Indeed, we are punished for speaking these words not only during childhood, but also in certain situations as adults (Jay, King, & Duncan, 2006). What's more, taboo words evoke a higher level of emotional response and physical arousal in the listener than other words (Janschewitz, 2008; Jay & Janschewitz, 2007). Taboo words also activate different areas of the brain in the speaker, such as the amygdala, when compared to other types of words (Jay, 2009b). Finally, taboo words have a connotative meaning that supersedes their denotative meaning (Jay, 1981). For example, the

word *bitch* refers to an unpleasant or frustrating woman, a connotative meaning distinct from the original denotative meaning of a female dog in heat.

According to Jay (1981, 2009b), context, as well as the relationship between speaker and listener, is extremely important when considering the effects of swearing on those who overhear it. Not all taboo words are offensive to every listener in all situations: depending on context, some 'normative' words are far more offensive than even the most shocking taboo words. Jay asserts that in cases of hate speech, discrimination, and harassment taboo words are concretely harmful to the listener. However, our use of offensive words in friendly conversation can instead be a social advantage creating social cohesion through cathartic humor and sarcastic irony (Jay, 2009b). Jay (2009b) estimates that the average person says 60-90 offensive words daily, which are generally conversational. He criticizes the methods that many researchers use when studying swearing, suggesting that published results too often wrongly categorize all forms of swearing under the category of verbal abuse.

Thus, because of the many different types of usages and origins that taboo words can have, it seems prudent to define separate forms of taboo words. Previous studies of taboo words have classified them by type, although many researchers have used different classifications over the years. Patrick (1901) classified taboo words into seven categories, five of which refer to religious or blasphemous content. The other two groups refer to vulgar words and expletives, although most expletives mentioned in Patrick's study are mild by today's standards. For example, Patrick considers *goodness* and *mercy* to be expletives, and he avoids providing examples for "vulgar" words. Unfortunately, there are no modern examples of vulgar words for comparison. Six decades later, Cameron (1969) classified taboo words into three new categories: sexual (e.g., *ass*), sacred (e.g., *damn*), and excretory (e.g., *shit*). In recent years, Jay (1992,

2000b) acknowledged that there are numerous categories for taboo words, and that many words fall under several categories.

Pinker (2007) explains why different categories of taboo words have been associated with so many negative connotations. He hypothesized that many of our taboos are things that we have held as sacred, such as oaths, or things that we do not wish to think about, such as bodily waste products. For each increase in the "level" of disgust associated with a given object or function (e.g., *shit* versus *piss*) there is a correspondent rise in offensiveness attached to the word. He categorized modern taboo words according their emotional impact on people: reverence (religious taboos), fear, disgust, hatred, and depravity (sexual taboos).

One specific category of taboo words that has received special attention in recent years is ethnophaulisms or racial slurs. Words that describe disabilities or exceptionalities have become taboo in polite conversation. According to Mohr (2013), society is increasingly finding it taboo to reduce any single person into an overall term, especially by race, disability, and physical size. Epithets of any kind have been shown to lead to social exclusion and other negative outcomes for marginalized groups (Leader, Mullen, & Rice, 2009; Mullen & Rice, 2003). The researchers explain that it is the simplistic ways in which an ethnophaulism reduces a person down to a single characteristic, paired with the negative valence of the word that determines the amount of harm caused by use of a slur.

Why do Humans Swear?

Swear words are frequently used by many types of people in many situations, and college campuses are no exception. Cameron (1969) demonstrated the universality of swearing among differing age groups by sampling conversations of college students on campus as well as older adults at work and in informal settings. Following sampling, Cameron found that taboo words

accounted for a sizable minority of the words sampled, and he also commented on the flexibility which profanity has in everyday conversation. Overall, taboo words constituted over 12 percent of the words used by adults in leisure settings. As such, Cameron notes that taboo words are not likely words that are limited to only "uneducated" persons and that they are situationally defined. Finally, Cameron noticed that many early studies of language have failed to include taboo words, even though these words comprise a sizable chunk of the adult lexicon. If taboo words are so widely spoken, there is no reason to totally exclude them from language studies and ample reason to study them.

Jay (1992, 2000b) has created an extensive theory of swearing, encompassing numerous aspects including neurological, social, and psychological factors. Thus, the theory is named Neuro-Psycho-Social theory of Speech. In the context of this theory, Jay (2000b) hypothesized that, while the explicit meaning of curse words remains the same, our implicit motivation for cursing varies among three factors. They are: purely neurological factors (e.g., aphasias, Tourette Syndrome, amygdala activation); psychological factors (e.g., impulsivity, religiosity, moral reasoning); and social reasoning (e.g., privacy, intimacy, and formality). Jay (2000b) gives the example of how two lovers might use cursing as enticement to encourage sexual intimacy, but would refrain for moral reasons from using the same language towards their partner in non-intimate social situations.

The reasons people why people swear was thought to be an intersection of these three factors. Jay and Janschewitz (2007) explained that the use of taboo words effectively communicates emotional information. Additionally, they suggested that we evolved to symbolically express emotions, which gives an aggression indicator advantage over other species. Despite their emphasis on the non-violent functions of swearing, they are careful to

point out that the emotions conveyed by cursing can take many hues, not just negative emotions. Mohr (2013) posits that humans use swearing as an emotional express safety valve; therefore, reducing our need for physical aggression.

One criticism of the idea of using profanity as a safety valve or emotional release is that aggression actually leads to further aggression, not to a reduction in frustration (Bushman, Baumeister, & Stack, 1999). According to Ebbeson, Duncan, and Konenci (1975) the same idea holds true for verbal aggression: expressing one's frustrations in the form of verbal aggression leads to further expressions of verbal aggression in the future. However, swearing may allow people to alleviate physical pain in certain situations (Stephens & Allsop, 2012; Stephens, Atkins, & Kingston, 2009). For example, cursing may alleviate the pain and anger of a stubbed toe, but it surely would have repercussions if one directed a vituperation against a neighbor or co-worker. Therefore, the differences found in research about emotional release may be the object the swear is directed at, which is investigated in this study.

What sets taboo words apart from other words?

Jay (1981) also studied the differences between the denotative and connotative meanings of obscene words. The denotative meaning corresponds to the definition of a word, such as one would find in a dictionary, whereas the connotative meaning adds emotional representation associated with that denotative meaning. He stipulates that the denotative and connotative meaning are closely tied for many non-taboo words but can easily be disassociated for taboo words. This separation, according to Jay, is a peculiarity of obscene or taboo words. When we hear or see most non-taboo words, the denotative meaning immediately comes to mind, and we can do little to inhibit the connotations associated with them. Taboo words are unique not only

because connotative and denotative meaning can be easily separated, but also because connotative meaning supersedes denotative meaning for all taboo words.

Another unique feature of taboo words is that they are remembered better than other words (Jay & Janschewitz, 2007). Theorists believe that the emotionality of the word complemented by the neurological arousal attached to the words enhances memory of taboo words. This result is likely because emotionally arousing words are processed using a different pathway than non-arousing words (Kensinger & Corkin, 2004). Thomas and LaBar (2005) found enhanced implicit memory for taboo words and priming emotional interaction for taboo words when compared to their neutral counterparts. Swearing itself also produces unique neurobiological responses which are dependent on the motivation for using taboo words (Vingerhoets, Bylsma, & de Vlam, 2013). A frequently cited example is using a taboo word in response to pain or discomfort, a phenomenon known as cathartic swearing. Pinker (2007) suggests rapid activation of a neural pathway from the amygdala to hypothalamus and midbrain often relieves short-term pain, which further reinforces the use of cathartic swearing in reaction to pain or tense situations.

The same neural circuit responsible for cathartic swearing is associated in many individuals with anger and frustration. A familiar example is that of automobile drivers who swear in response to illegal or stressful situations, such as pedestrians crossing the street or being cut-off in traffic. Recently, Popusoi and Havârneanu (2016) found that in these circumstances, swearing can act as a substitute for physical aggression. Also, drivers seem to be aware of the roles anxiety and frustration play in swearing while driving, which suggests general understanding of usual motivations for swearing in the context of stressful driving conditions.

There is also an interesting connection in neurological research on impulse control and swearing, shown by Vingerhoets et al. (2013) citing the research of Van Lancker and Cummings (1999) and Jay (2000b). They note that, unlike non-taboo language which usually emphasizes left-brain activity, swearing is often regulated by both hemispheres. When swearing is primarily reactive, as in cathartic swearing, the right-brain is almost entirely responsible for swearing. Yet, when cursing is used conversationally in social interactions, swearing is a predominantly left-brain process. This unique neurological structure also explains *coprolalia*, uncontrollable swearing in inappropriate social contexts seen in persons with Alzheimer's Disease, Tourette's Syndrome and brain injuries (Bergen, 2016).

Coprolalia represents a dysfunction in the complex neurological pathways which control swearing, and often leads to socially inappropriate usage of taboo words. Yet, beyond neurological disorders, determining when and why an individual swears is still complicated. For instance, while Bergen (2016) states swearing in children is viewed as highly inappropriate, Simpson, Duarte, and Bishop (2015) noted a strong correlation between frequent swearing in adults and the amount of swearing used by their parents while growing up. While this finding seems reasonable, it was surprising that correlation between maternal swearing and adult swearing was significantly higher than peers, romantic partners or coworkers, especially considering that children are often not allowed to use taboo words around their parents.

Beyond the social and neurological complexities of swearing, taboo words also possess unique syntactic qualities in English. Utilizing Google searches, Bauer (2015) demonstrated the prevalence of "expletive insertion" in spoken language. Expletive insertion is the meshing of a taboo word within the pronunciation of a non-taboo word (e.g., *un-fucking-believable*). Bauer also found strict rules governed expletive insertion, with the taboo word typically preceding the

stressed syllable of the non-taboo word. This finding portrays that, while taboo words may violate the normal rules of English syntax, they still often demonstrate phonetic and syntactically predictable usage and behavior. They also allow for creativity and spontaneity outside of the usual rules of grammar and syntax in the English language.

In many respects, we understand the mechanics of swearing. However, the exact function of taboo words in language, both grammatically, psychologically and socially, remains an area of active research, in large part because of the complexity of swearing. The purpose of the current study is to determine whether we view taboo words differently when used to describe people versus things or objects. To test this, we attempted to determine whether pairing a taboo word with a proper name would elicit different offensiveness ratings as opposed to pairing a taboo word with an object; thus, studying the directive of the curse. Participants involved in this study were shown taboo words within various contexts (paired with a name or object) and asked to rate the offensiveness of those words. In a second study, we examined how semantic processing affected the responses found for offensiveness. We posited that certain types of taboo words, such as racial slurs or other derogatory words that marginalize groups of people would remain strongly taboo across situations, while other terms would be perceived as more offensive when paired with a name, especially when participants used deeper semantic processing of the information presented.

Experiment 1

Method

Participants

Participants were recruited from an introductory psychology course at a large Midwestern university, and each received course credit for their participation. There were 100 participants in

all. Five participants' data were excluded from analysis for failure to complete the task. Data from the remaining 95 participants (67 women and 28 men, 86% were Caucasian) were analyzed. Participants selected age categories included 91.6% werethat were 18-24 years old, 4.2% were 25-34 years old, and 4.2% were 35-54 years old . Use of human participants for both experiments was approved by the Institutional Review Board.

Materials

In order to test the effects of pairing a taboo word with a proper name versus pairing it with an object, we created an online rating survey in which participants could assign a Likert-type rating to each target word. Participants were exposed to a total of 78 word-pairs, with each pair appearing individually as one target word and one non-target word. Non-target words were for experimental manipulation and were not rated. For the first half of trials, the non-target word was a noun paired with a target word (e.g., *SHAPE QUEER*). Nouns were chosen from an online noun generator for objects, and we use the term object to specify this group of nouns to help the reader distinguish between names (which are also nouns) and object-nouns that are not names. Only nouns that were not typically associated with taboo words in everyday speech were selected for word pairs. Non-target words were matched for word length (i.e. number of letters) with the target words. All word pairs were presented in uppercase block lettering. For example, participants may have seen the words *SHAPE QUEER*.

For the other half of the trials, the target word was paired with a proper first name as the non-target word (e.g., *HENRY QUEER*). Names were chosen from a list of the most popular baby names in the United States (Social Security Administration, n.d.), which was broken down by birth year; most of the names were chosen for the birth years 1950 and 1960, and this selection was randomized. Half of the names were typical male names and half were typical

female names. Thirty-eight of the target words were taboo words, and the remaining forty words were non-taboo words. The presentation of words and pair order was counterbalanced so that participants would not rate the same words twice. The word pairings were also counterbalanced across subjects so that each taboo and non-taboo word was equally paired with a name and an object across participants.

Identified taboo words were additionally broken down into categories for analysis. Categories included words that would typically be considered offensive to members of specific groups of people such as women (e.g., *bitch*), people with disabilities (e.g., *retarded*), minorities (e.g., *kike*), gays and lesbians (e.g., *faggot*), overweight individuals (e.g., *tubby*), and men (e.g., *bastard*). An additional category of taboo words for genitalia (e.g., *dick*) was included as well.

Procedure

Participants enrolled in the study online and were then directed to the Qualtrics website (survey software purchased by the university) where they could complete the word ratings. Participants were randomly assigned to complete one of two versions of the counter-balanced rating survey. In order to measure the effects of pairing a taboo target word with a proper name versus pairing with a non-human object, participants rated each taboo-object pairing on a nine-point Likert-type scale. Ratings ranged from 1 (*not at all*) to 9 (*extremely*) for six dimensions: how offensive words were to the participant, how offensive participants believed the words were to other people, how pleasant the word was to the participant, how much general 'emotion' the word made the participant feel, how often the participant used the target word, and how often the participant heard others use the target word. These ratings were similar to those used by Janschewitz (2008), with the exception of emotionality, which she had measured using galvanic skin response. To further replicate the Janschewitz study, we decided to have participants give a

rating for emotionality, as our university did not have the equipment available to collect skin response data. The complete Qualtrics survey and all data analyses below can be found on our Open Science Foundation page at: https://osf.io/kxy7u/.

Results

Data processing

Prior to analysis, data were screened for missing data and outliers. Five participants' data were excluded from analysis due to missing data. A mixed linear model was used to analyze the data to control for stimuli repetition across subjects and ratings within subjects. Therefore, the data was arranged by subject and target word with the rating for target words as the dependent variable. This arrangement for 95 subjects resulted in 7,410 data points for the experiment. Seventy-five of these ratings were identified as outliers using Mahalanobis distance across all rating questions and were excluded from analyses. Data were also screened for normality, linearity, and homoscedasticity. Small issues appeared with multivariate assumptions, but the sample size and analysis used are robust enough that these small violations should not skew research findings and conclusions.

Offensiveness Ratings

A mixed linear model was used to investigate the gender by word type by pair type effect on offensive- to-self-ratings. The design was a 2 (gender) X 2 (word type: taboo, non-taboo) X 2 (pair type: name, object) predicting the dependent variable of offensiveness ratings. A significant main effect of gender was found, $F(1, 129.66) = 43.73$, $p < .001$, $\eta_p^2 = .25$, indicating that women ($M = 3.10$, $SE = 0.06$) rated all words significantly more offensive than men ($M = 2.35$, $SE = 0.10$). The main effect of word type was significant, $F(1, 3743.07) = 3225.95$, $p < .001$, $\eta_p^2 = .46$, indicating that taboo ($M = 4.22$, $SE = 0.07$) words were rated more offensive than non-

taboo words (M = 1.23, SE = 0.05). The main effect of pair type was not significant, F(1, 3747.16) = 0.31. p = 0.58, $\eta_p^2 < .01$.

For the two-way interactions, only the gender X word type interaction was significant, F(1, 3743.07) = 270.53, $p < .001$, $\eta_p^2 = .07$. To follow up the significant gender interaction, male (M = 3.42, SE = 0.12) and female (M = 5.03, SE = 0.08) ratings for taboo words were compared with an independent t-test, and female ratings were significantly higher, t(659.44) = 11.31, $p < .001$, d = 1.04. Next, non-taboo words were compared for male (M = 1.29, SE = 0.09) and female (M = 1.17, SE = 0.06) participants, which showed that ratings were not significantly different, t(179.33) = -1.10, p = 0.27, d = 0.17. None of the other two-way or three-way interactions were significant: gender by pair type: F(1, 3747.16) = 0.14, p = 0.70, $\eta_p^2 < .01$, pair type by word type: F(1, 3774.41) = 0.02, p = 0.89, $\eta_p^2 < .01$, gender-by-pair type by word type: F(1, 3774.41) = 0.02, p = 0.88, $\eta_p^2 < .01$.

Taboo Word Ratings

Another 2 (gender) X 7 (word category: women, disabilities, race, LGBT, overweight, genitalia, men) X 2 (pair type: name, object) mixed linear model was analyzed on offensive-to-self ratings to determine if collapsing across taboo word types influenced our previous results. A significant effect was found for gender, F(1, 96.36) = 17.20, $p < .001$, $\eta_p^2 = .19$, indicating that women (M = 6.11, SE = 0.26) rated all words as more offensive than did men (M = 4.11, SE = 0.40). A significant effect was also found for word categories, F(6, 328.11) = 13.09, $p < .001$, $\eta_p^2 = .17$, indicating differences in ratings between racial slurs (M = 6.20, SE = 0.34), words that derogate women (M = 5.35, SE = 0.25), people in the LGBT community (M = 5.25, SE = 0.26), people with disabilities (M = 5.06, SE = 0.29), men (M = 4.87, SE = 0.27), people who are overweight or obese (M = 4.18, SE = 0.28), and euphemisms referencing human genitalia (M =

4.87, SE = 0.25). We did not run pairwise comparisons for this main effect because the two-way interaction between gender and word categories was significant, $F(6, 328.12) = 3.26$, $p < .01$, $\eta_p^2 = .06$. Therefore, to control for Type 1 error, a *post hoc* analysis was examined across gender for each category only. These analyses can be found in Table 1. All other main effects, pair type: $F(1, 496.08) = 1.76$, $p = .19$, $\eta_p^2 < .01$, and interactions, pair type X gender: $F(1, 496.09) = 1.24$, $p = .27$, $\eta_p^2 < .01$, pair type X word category: $F(6, 358.81) = 0.63$, $p = .70$, $\eta_p^2 < .01$, and the three way interaction: $F(6, 358.81) = 1.78$, $p = .10$, $\eta_p^2 = .03$ were not significant.

Discussion

It is not surprising that women rated all words as more offensive than men. In most studies of taboo words, researchers have found that women rated taboo words far more harshly than men did (Selnow, 1985). Regardless of gender, participants rated racial slurs highest in offensive types of taboo words; however, women's ratings of racial slurs were more severe than men's ratings. Taboo words usually used against women were also found to be highly offensive, with women rating them higher on the offensiveness scale than men. This rating result continues through many of the other categories as well. Words that are derogatory towards LGBT individuals ranked third followed by words that derogate disabled individuals and words that describe genitalia or sex. What is interesting is that women rated words that are derogatory toward overweight or obese people as being far more offensive than men did, even though these words are not typically considered taboo.

This finding suggests that women may face more social pressure about body concerns than men, resulting in a higher rating for offensiveness. The least offensive words, as rated by the participants in our study, are derogatory taboo words directed toward men. One caveat of this sub-groups rating was that they were the second most highly offensive words in the male

participant's ratings. It may be worth noting that even the most highly offensive words on the men's list (racial slurs) were rated lower than even the least offensive words on the women's list. Across both analyses examining offensive-to-self ratings, we did not find an effect or interaction with the pair type of the taboo word. It appeared that whether the taboo word was paired with a name or object, ratings were equal, and the differences in offensiveness stemmed from the rater and the type of taboo word presented. Limitations of the study design may have led to this result, and they are discussed below.

Limitations

One issue with our stimuli selection may have been that many of the words that were thought to be offensive to members of specific groups were not necessarily 'traditional' taboo words. While they may be derogatory and offensive, they are not typically censored in the media, nor are they universally replaced with euphemisms in formal settings. Some examples of derogatory (though not necessarily taboo) words included *fat, glutton, tubby,* and *cripple.* Additionally, many of the taboo words we assessed could easily be included in more than one category, making it difficult to determine whether they were particularly offensive to one group or another. Another speculation was that participants at our Midwestern school were probably not familiar with many of the ethnophaulisms included in this questionnaire, such as *kike* or *paki*. While it was certainly a good thing that these words were not often used in this region, it made our analysis challenging. In fact, only one of the racial slurs (*nigger*) was rated as highly offensive, which led us to conjecture that the demographic and geographic region led to the large-scale ignorance of specific racial slurs.

One potential research-design issue was the pairing of the target and non-target words. Since there was no time interval between the presentation of the word pairs and the ratings, there

was no need for the participants to actually attend to the non-target words. As a result, the non-target words may not have primed any response in the participants. A couple of paradigm fixes may solve this problem: first, to present word pairs over a set of headphones as sound files; second, to flash the word pairs on the screen and ask participants to rate the word that had either appeared on the left or right hand side of the screen. However, the best option would be to prompt participants to engage in deeper processing of the words, which was employed in Experiment 2.

Experiment 2

For the second experiment, we wanted to have participants process the taboo words and the non-target words semantically to address limitations from Experiment 1. Deeper semantic processing often leads to better memory (Tulving, 2002), and therefore, an association between the taboo word and noun could be created by engaging in deep processing. We presented participants with a list of statements that included the taboo words and asked them to rate and rank the statements according to how offensive they considered each statement to be. We did not analyze the statement rankings or ratings. The ranking and rating task had two purposes: to prime semantic processing and for a recognition task later in the experiment. Reading of sentences would help create a mental model or image of the sentence, which would better engage memory for the taboo and target nouns (Zwaan & Radvansky, 1998). Additionally, using dual processingcoding theory, participants may remember words better when an image of them together can be created (Paivio, 1971). To investigate memory, participants were asked to recall the non-taboo words that had been previously presented.

Method

Participants

All participants were recruited from an introductory psychology course at the same institution as the first experiment. Those participants who had been part of the first experiment were not eligible to participate in the second experiment. A total of 165 participants began the experiment; nine were excluded from analysis due to non-completion of the task, leaving a total of 156 participants' data. Of the 156 participants included in analysis, three were not native English speakers. We decided to include their data, since they were few in number and distributed among groups. The inclusions of their data did not change the results reported below (i.e., statistics were identical to two decimals). Out of the 156 participants used in this study 92 were women, 63 were men, and one did not respond; Selected age range categories included 95.5% that were 18-24 years old, 3.9% were 25-34 years old, .6% were 35-54 years old. 83% of participants listed their race as White.

Materials

The first task in this experiment consisted of 16 statements that the participants were asked to read and then sort into one of three boxes: *most offensive, somewhat offensive,* or *least offensive.* Within each of these boxes, participants could then rank each statement from most to least offensive. The purpose of this task was two-fold: to prompt semantic processing of the target words and to set up the recall task that comprised the third section of the task.

There were four versions of the questionnaire, which was counter-balanced so that participants would not rate the same target word twice. The breakdown of the sixteen statements was as follows: four statements with a proper name and a taboo word, four statements with an object and a taboo word, four statements with a proper name and a non-taboo word, and four statements with an object and a non-taboo word. Some examples of the statements presented in

this experiment are, "*Larry was acting like an asshole all night,"* and "*That club is skanky, and you should probably stay away from it."*

The second task in this experiment involved rating the target words from each of the sixteen statements. Participants were presented with only the target words from each statement, such as *asshole* or *skanky.* Participants rated each word on a nine-point Likert-type scale. Ratings ranged from 1 (*not at all*) to 9 (*extremely*) offensive.

The third task in this experiment involved recalling the subject of the statements that the participants had previously ranked. There were sixteen recall questions, with each of the sixteen names or objects that had been previously presented as multiple-choice selections. Some examples of recall questions: "*Who/what was acting like an asshole all night?"* or "*Who/what is skanky and you should probably stay away?"*

Procedure

As in the first experiment, participants enrolled in the study online and were then directed to the Qualtrics website where they could complete the word rating task. Participants were randomly assigned to complete one of four versions of the counter-balanced rating survey. As in the first experiment, we examined the effects of using a taboo word with a proper name versus using the taboo target word with a non-human object. Instead of using word pairs, participants read statements about the target words and the people or objects the words modified, as described above. Additionally, all survey questions and survey design can be found at https://osf.io/kxy7u/. After the participants ranked each of the sixteen statements on offensiveness, they were asked to rate how offensive each individual target word was to them. We did not have the participants rate words on the remaining other dimensions from the first

experiment. We expected that adding a taboo word to a proper name would cause participants to rate the taboo target word as more offensive.

Following their ratings, participants were given a brief recognition task to measure whether they processed the word type (taboo versus not) and pair type (name versus object), thus allowing for the measurement of the relationship between recall and taboo word pairing. We expected to find that taboo words would enhance recognition of both proper names and non-human objects, as measured by more correct responses to multiple-choice questions.

Results

Data Processing

Prior to analysis, data were screened for missing data and outliers. Nine participants' data were excluded from analysis due to missing data or because they had not completed the task. A mixed linear model was used to analyze the data to control for stimuli repetition across subjects and ratings within subjects. Therefore, the data was arranged by subject and target word with the rating for target words as the dependent variable. This arrangement for 156 subjects resulted in 2,496 data points for the experiment. None of these ratings were identified as outliers using Mahalanobis distance across all rating questions. Data were also screened for normality, linearity, and homoscedasticity. There were no issues with multivariate assumptions.

Offensiveness Ratings

A 2 (word type: taboo, non-taboo) X 2 (pair-type: name, object) mixed linear model was used to analyze offensiveness ratings. A significant effect of word type was found, $F(1, 1766.01) = 5021.80$, $p < 0.001$, $\eta_p^2 = .74$, indicating that taboo words ($M = 6.30$, $SE = 0.08$) were rated as more offensive than non-taboo words ($M = 1.75$, $SE = 0.07$). A significant effect of pair type was also found, $F(1, 1733.32) = 9.83$, $p < 0.01$, $\eta_p^2 = .01$, indicating that words that were paired with

proper names ($M = 4.13$, $SE = 0.08$) were being rated as more offensive than those paired with objects ($M = 3.92$, $SE = 0.08$). However, no significant interaction effects were found, $F(1, 1748.91) = 1.44$, $p = 0.23$, $\eta_p^2 < .01$.

Recognition

Another 2 (word type: taboo, non-taboo) X 2 (pair type: name, object) mixed linear model was used to investigate the effect of word type by pair type on recognition proportion of the subject of the sixteen statements. A significant effect of pair type was found, $F(1, 2306.50) = 81.35$, $p < 0.001$, $\eta_p^2 = .03$, indicating that objects ($M = 0.57$, $SE = 0.02$) were more often correctly recalled than proper names ($M = 0.40$, $SE = 0.02$). No significant effect of word type was found, $F(1, 2307.00) < .01$, $p = 0.95$, $\eta_p^2 < .01$, nor was there a significant interaction found, $F(1, 2310.48) = 0.12$, $p = 0.74$, $\eta_p^2 < .01$. This effect was opposite of our hypothesis, which was that we expected names to be remembered more than objects, especially when paired with taboo words.

Discussion

Taboo words were rated as more offensive than non-taboo words, as we expected them to be. Experiment 1 did not indicate that taboo words paired with proper names were more offensive; however, when participants focused more on semantic processing in Experiment 2, we did find that words (both taboo and non-taboo) were more offensive when paired with a proper name. We speculate this effect may be due to trying to match words in taboo and non-taboo, as the non-taboo words were not particularly pleasant (*dummy, pee*). Within the recognition task, the fact that more objects were chosen correctly than names may reflect a potential memory encoding advantage. It is likely that objects were more easily visualized than a proper name (especially if the participant does not personally know anyone by that first name); therefore, it

may be no surprise that participants were able to recognize more of them. According to Paivio's (1971) dual coding theory, concepts are remembered more often when imagery can be paired with verbal representations. Additionally, he has portrayed that concrete words are easier to remember than abstract concepts, which would have made the objects in our study easier to remember than the names. Two things could have improved the recognition task: first, the taboo or non-taboo modifiers should have been recalled instead of the subject of the statements. Second, only the subject and the modifier should have been included in the recognition task, instead of the entire statement.

Conclusion

In conclusion, these results agree with previous research by Jay and Janschewitz (2008) on taboo words which found that, in a collegiate setting, English-speaking women rated taboo words as more offensive than English-speaking men. However, taboo words are rated as being more offensive than non-taboo words by participants of either gender, which is again similar to results found by Jay and Janschewitz (2008). Additionally, certain categories of words, such as racial slurs, can be more offensive to people than other types of taboo words, so long as the participants are familiar with the words. Given recent work by Simpson et al. (2015) and Bauer (2015), the interpretation of taboo words likely takes place within the surrounding context or social situation.

Despite potential controls in our research design that may have hindered finding significant interactions between taboo words and the subjects they modify, we believe there is room for future research in this area. For example, it could be beneficial sociologically to study whether repeated exposure to a word can neutralize its shock value. Alternatively, it could be interesting to determine whether participants' ratings of words match skin conductance readings.

It may be the case that male participants may underestimate the offensiveness of taboo words. It may be beneficial to study participants' perceptions about the speaker's emotional state when uttering taboo words as well. Another area that deserves attention is euphemisms. When we substitute a word for another word, it may serve to create taboo words where there were no taboos previously. For example, substituting the word "gay" in "don we now our gay apparel" in a well-known holiday tune.

Regardless of our findings, it is important to consider whom we may hurt by speaking disrespectfully to and about other people. While taboo words may just be words, incapable of causing direct physical damage to others, they pack abnormally high emotional energy. These results indicate the benefits of mindfulness when addressing others in order to avoid the damage and backlash of using the wrong words. Although it may not be necessary to self-censor in most situations, it is always useful to know the impact one's words may have on other people, particularly when one is compelled by strong emotion.

References

Bauer, L. (2015). Expletive insertion. *American Speech*, *90*(1), 122–127. https://doi.org/10.1215/00031283-2914736

Bergen, B. (2016). *What the F: What swearing reveals about our language, our brains, and ourselves*. New York, NY: Basic Books.

Bowers, J. S., & Pleydell-Pearce, C. W. (2011). Swearing, euphemisms, and linguistic relativity. *PLoS ONE*, *6*(7), e22341. https://doi.org/10.1371/journal.pone.0022341

Bushman, B. J., Baumeister, R. F., & Stack, A. D. (1999). Catharsis, aggression, and persuasive influence: Self-fulfilling or self-defeating prophecies? *Journal of Personality and Social Psychology*, *76*(3), 367–376. https://doi.org/10.1037/0022-3514.76.3.367

Cameron, P. (1969). Frequency and kinds of words in various social settings, or What the hell's going on? *The Pacific Sociological Review*, *12*(2), 101–104. https://doi.org/10.2307/1388561

Coyne, S. M., Stockdale, L. A., Nelson, D. A., & Fraser, A. (2011). Profanity in media associated with attitudes and behavior regarding profanity use and aggression. *Pediatrics*, *128*(5), peds.2011-1062d. https://doi.org/10.1542/peds.2011-1062d

Ebbesen, E. B., Duncan, B., & Konecni, V. J. (1975). Effects of content of verbal aggression on future verbal aggression: A field experiment. *Journal of Experimental Social Psychology*, *11*(2), 192–204. https://doi.org/10.1016/S0022-1031(75)80021-7

Hoey, B. (2011). *We Are Amused*. London: JR Books.

Ivory, A. H., & Kaestle, C. E. (2013). The effects of profanity in violent video games on players' hostile expectations, aggressive thoughts and feelings, and other responses. *Journal of Broadcasting & Electronic Media*, *57*(2), 224–241.

https://doi.org/10.1080/08838151.2013.787078

Jacobi, L. L. (2014). Perceptions of profanity: How race, gender, and expletive choice affect perceived offensiveness. *North American Journal of Psychology*, *16*(2), 261–275.

Janschewitz, K. (2008). Taboo, emotionally valenced, and emotionally neutral word norms. *Behavior Research Methods*, *40*(4), 1065–1074. https://doi.org/10.3758/BRM.40.4.1065

Jay, T. B. (1981). Comprehending dirty-word descriptions. *Language and Speech*, *24*(1), 29–38. https://doi.org/10.1177/002383098102400102

Jay, T. B. (1992). *Cursing in America*. Philadelphia: John Benjamins.

Jay, T. B. (2000a). What to do when your kids start talking dirty. *Parent Guide*, *18*(9), 20.

Jay, T. B. (2000b). *Why we curse: A Neuro-Psycho-Social Theory of Speech*. Philadelphia: John Benjamins.

Jay, T. B. (2009a). Do offensive words harm people? *Psychology, Public Policy, and Law*, *15*(2), 81–101. https://doi.org/10.1037/a0015646

Jay, T. B. (2009b). The utility and ubiquity of taboo words. *Perspectives on Psychological Science*, *4*(2), 153–161. https://doi.org/10.1111/j.1745-6924.2009.01115.x

Jay, T. B., & Janschewitz, K. (2007). Filling the emotion gap in linguistic theory: Commentary on Potts' expressive dimension. *Theoretical Linguistics*, *33*(2), 215–221. https://doi.org/10.1515/TL.2007.014

Jay, T. B., King, K., & Duncan, T. (2006). Memories of punishment for cursing. *Sex Roles*, *55*(1–2), 123–133. https://doi.org/10.1007/s11199-006-9064-5

Kaye, B. K., & Sapolsky, B. S. (2009). Taboo or not taboo? That is the question: Offensive language on prime-time broadcast and cable programming. *Journal of Broadcasting & Electronic Media*, *53*(1), 22–37. https://doi.org/10.1080/08838150802643522

Kensinger, E. A., & Corkin, S. (2004). Two routes to emotional memory: distinct neural processes for valence and arousal. *Proceedings of the National Academy of Sciences of the United States of America*, *101*(9), 3310–3315. https://doi.org/10.1073/pnas.0306408101

LaPointe, L. L. (2006). Profanity. *Journal of Medical Speech-Language Pathology*, *14*(1), 7–9.

Leader, T., Mullen, B., & Rice, D. R. (2009). Complexity and valence in ethnophaulisms and exclusion of ethnic out-groups: What puts the "hate" into hate speech? *Journal of Personality and Social Psychology*, *96*(1), 170–182. https://doi.org/10.1037/a0013066

Mohr, M. (2013). *Holy Sh*t: A brief history of swearing*. New York: Oxford University Press.

Mullen, B., & Rice, D. R. (2003). Ethnophaulisms and exclusion: the behavioral consequences of cognitive representation of ethnic immigrant groups. *Personality & Social Psychology Bulletin*, *29*(8), 1056–1067. https://doi.org/10.1177/0146167203254505

Paivio, A. (1971). *Imagery and Verbal Processes*. Oxford: Holt, Rinehart, & Winston.

Patrick, G. T. W. (1901). The psychology of profanity. *Psychological Review*, *8*(2), 113–127. https://doi.org/10.1037/h0074772

Patton, C. L., Asken, M., Fremouw, W. J., & Bemis, R. (2017). The influence of police profanity on public perception of excessive force. *Journal of Police and Criminal Psychology*, *32*(4), 340–357. https://doi.org/10.1007/s11896-017-9226-0

Pinker, S. (2007). *The stuff of thought: Language as a window into human nature*. New York: Viking.

Pinker, S. (2011). *The better angels of our nature: Why violence has declined*. New York: VIking.

Popușoi, S., & Havârneanu, C. (2016). When and why drivers swear? A qualitative pilot study. *Romanian Journal of Experimental Applied Psychology*, *7*(1), 23–25.

Selnow, G. W. (1985). Sex differences in uses and perceptions of profanity. *Sex Roles*, *12*(3–4), 303–312. https://doi.org/10.1007/BF00287597

Simpson, E., Duarte, J., & Bishop, B. (2015). When Moms Say Bad Words: Family and Peer Influence on the Frequency of Swearing. *Undergraduate Research Journal*, *8*(2), 1–7. Retrieved from http://stars.library.ucf.edu/urj/vol8/iss2/1

Social Security Administration. (n.d.). Popular Baby Names. Retrieved October 10, 2012, from https://www.ssa.gov/oact/babynames/

Stephens, R., & Allsop, C. (2012). Effect of manipulated state aggression on pain tolerance. *Psychological Reports: Disability & Trauma Psychological Reports*, *111*(1), 311–321. https://doi.org/10.2466/16.02.20.PR0.111.4.311-321

Stephens, R., Atkins, J., & Kingston, A. (2009). Swearing as a response to pain. *Neuroreport*, *20*(12), 1056–1060. https://doi.org/10.1097/WNR.0b013e32832e64b1

Thomas, L., & LaBar, K. (2005). Emotional arousal enhances word repetition priming. *Cognition & Emotion*, *19*(7), 1027–1047. https://doi.org/10.1080/02699930500172440

Tulving, E. (2002). Episodic Memory: From Mind to Brain. *Annual Review of Psychology*, *53*(1), 1–25. https://doi.org/10.1146/annurev.psych.53.100901.135114

Van Lancker, D., & Cummings, J. . (1999). Expletives: neurolinguistic and neurobehavioral perspectives on swearing. *Brain Research Reviews*, *31*(1), 83–104. https://doi.org/10.1016/S0165-0173(99)00060-0

Vingerhoets, A. J. J. M., Bylsma, L. M., & de Vlam, C. (2013). Swearing: A biopsychosocial perspective. *Psihologijske Teme*, *22*(2), 287–304.

Zwaan, R. A., & Radvansky, G. A. (1998). Situation models in language comprehension and memory. *Psychological Bulletin*, *123*(2), 162–185. https://doi.org/10.1037//0033-

2909.123.2.162

Table 1

Offensiveness Ratings for Word Categories by Gender

	Female Participants		Male Participants				
Category	*M*	*SE*	*M*	*SE*	*t*(153)	*p*	*d*
Racial Slurs	7.27	0.37	5.13	0.57	3.29	.001	0.54
Derogatory to Women	6.44	0.27	4.27	0.42	4.55	< .001	0.74
Derogatory to LGBT	6.29	0.28	4.22	0.43	4.22	< .001	0.70
Derogatory to Disabled Individuals	5.96	0.32	4.16	0.49	3.21	.002	0.53
Genitalia	5.83	0.28	3.91	0.43	3.91	< .001	0.64
Derogatory to Obese Individuals	5.55	0.30	2.80	0.47	5.17	< .001	0.85
Derogatory to Men	5.43	0.29	4.31	0.45	2.19	.030	0.36