WHAT NOT TO SWEAR:

HOW DO CHILDREN

LEARN BAD WORDS?

by

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ABSTRACT

Children begin producing taboo words as early as ages one or two years old and produce them at a steady rate until the teenage years. However, little is known about how children acquire taboo words and whether the acquisition of taboo words is like the acquisition of other types of words. The current study explores the differences in how children acquire a novel taboo word compared to a novel object word. Three- to 8-year-olds (N=97) saw a short video featuring nonsense words that were framed as either novel object words or novel taboo words. Children identified the nature of the word (i.e., good/bad, right/wrong), reproduced the word, identified the original source of the word, and made several additional judgements about that source. Participants also completed the Peabody Picture Vocabulary Test (PPVT) as a measure of receptive vocabulary. Results revealed both older and younger children learn taboo words, but only younger children did so at rate greater than object words. Additionally, taboo words were the only word type not related to increases in vocabulary size.
DEDICATION

This thesis is dedicated to two very important people in my life: my 95-year-old great grandmother Bernice and my 8-year-old sister Kristen. My great-grandmother has lived a humble life as a mother of four, who never received higher than a middle school education. She has been blessed to see me graduate from the University of Alabama for my Bachelor’s and soon my Master’s. I am grateful for her presence in my life. My sister is growing and learning every day and I look forward to witnessing the things she will achieve in the near future. She is a bright and beautiful young girl, and I can only hope that I inspire her as much as she inspires me. Both of these ladies have been my inspiration and motivation for not only education, but for my life. I love you and I thank you.
LIST OF ABBREVIATIONS AND SYMBOLS

\(df\) Degrees of freedom: number of values free to vary after certain restrictions have been placed on the data

\(p\) Probability associated with the occurrence under the null hypothesis of a value as extreme as or more extreme than the observed value

\(Q\) Cochran’s \(Q\): A test comparing 3 or more related samples

\(t\) Computed value of \(t\) test

\(\chi^2\) Chi-Square: Statistic measurement of how expectations compare to results

\(<\) Less than

\(>\) Greater than

\(=\) Equal to
ACKNOWLEDGMENTS

I am delighted to have this opportunity to thank the many faculty and community members who have helped me with this research project. I am most thankful to Jason Scofield, my faculty advisor and chairman of this research project, for sharing his experience and lending me his ideas. I would also like to thank all of my committee members, Casey Totenhagen, Sara McDaniel, and consultant Andre Souza for their involvement, insight, and support of both the project and my academic progress. I would like to thank Megan Shoaf, for sacrificing her valuable time as an undergraduate to assist me with collecting data.

I extend my gratitude to both the teachers and parents at The Children’s Program, Tuscaloosa Magnet School, and Woodland Forrest Elementary school for their cooperation and helpfulness throughout this process. And also to the smart, wonderful children who, without them, none of this would be possible. They were always fun to be around and there was never a dull moment.

Even when my motivation seemed to waver, I am thankful for my friends, family, and fellow graduate students that uplifted and motivated me to continue. Your support has not gone unnoticed and I am forever grateful.
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CHAPTER 1

INTRODUCTION

There are over 70 swear or taboo words recorded in the English language (Jay, 2009). A majority of these words refer to body parts (e.g., asshole), body products (e.g., shit), sexual acts (e.g., fuck), or ethnic and racial slurs (e.g., gypsy) (Jay, Caldwell-Harris, & King, 2005). Most adults are at least familiar with many of these words, so much that taboo words may make up more than 0.5% of their daily spoken language (Jay, 2009). The average English speaker uses approximately 16,000 words per day and statistically up to 90 of those may be swear words (Jay, 2009). In comparison, commonly used words such as first person plural pronouns occur at a rate of 1.0% (Mehl & Pennebaker, 2003).

Defining a word as taboo means that it is restricted on institutional and individual levels, assuming that if the word is used it would cause harm to the listener (Jay, 2009). Placing taboos on language emerges from authorities that have the power to restrict speech (e.g., courts of law, religious leaders, and mass media managers). These authorities also have the power to punish those who violate the rules against the restricted speech (Jay, 2009). In American media, the Federal Communication Commission (FCC) is responsible for defining what is considered taboo or offensive language on broadcast television (Kaye & Sapolsky, 2009). The FCC is influenced and motivated by the complaints of television viewers. After a monumental increase in viewer complaints, the Broadcast Decency Enforcement Act was passed in 2006 (Kaye & Sapolsky, 2009). The Broadcast Decency Enforcement Act allowed the FCC to increase indecency fines.
from $32,500 to $325,000; the FCC could also fine broadcast stations per indecency incident, when stations had previously been fined per program (Kaye & Sapolsky, 2009).

In 1972, comedian George Carlin began performing his infamous “Seven Words You Can’t Say on Television” routine. He lists the words shit, piss, fuck, cunt, cocksucker, motherfucker, and tits as the “heavy seven” that were deemed as indecent to use on any type of broadcast. Although the routine was done in jest, he envelopes the comedy in his personal theory about swear words. Carlin argues that the seven words are not always bad, but the meaning and subsequent offensiveness of the words depends on the context. There are cases where swearing can be polite (e.g. You look fucking great!); and there are also instances where swearing can be viewed as rude, like calling someone a racial slur (Jay & Janschewitz, 2008). The words Carlin revealed in 1972 are still words that are considered taboo and obscene today, and will result in the previously mentioned fine by the FCC each time one is said on television.

Although the exact origin of some swear words is not clear, restrictions on language can be traced back to the Biblical era (Heins, 2007). The way swear words are used depends on the speaker and the statement he or she is trying to make. Jay (2009) compares the use of swear words, to the use of a car horn in that it can be used for emphasis to express a span of emotions, depending on the context of the situation. Swearing can be spontaneous with very little control, or reflective, carefully thought out and executed (e.g. telling a dirty joke). Instances of swearing are not always emotionally motivated, as sometimes they just exist in the everyday language of the speaker (Jay & Janschewitz, 2008).

The use of swears has been documented in social groups from all walks of life including police, prisoners, soldiers, athletes and college students (Jay, 2009). Research by McEnery (2006) found that speakers who have a low social ranking swear more than speakers who have a
high social ranking. Swearing is also low in environments that are high in religiosity, sexual anxiety, or sexual repressiveness (Janschewitz, 2008). Personality is additionally a factor in the type of people who use taboo language. Those who swear often are likely to have more extraverted and dominant personality traits (Jay, 2009).

Swearing in Adults

Adults swear and use taboo language for a number of reasons, including emotional influence or inflection, or habitual use in casual conversation (Jay, 2009). Men and women typically differ in general conversational behavior, which would propose a difference in the way they use taboo language (Mehl et al., 2007). Perceived gender differences are present in the types of swear words men use and the types of swear words that women use. Stronger swear words (e.g. shit, fuck) are interpreted as more masculine and milder swear words (e.g. hell, damn) are more feminine (Rasmuessen & Moely, 1986). Words referencing parts of women’s anatomy are typically used as insults towards both men and women, and are used more by men. Additionally, men and women use swear words and taboo language more in the presence of their like gender. Men are more conscious of using profanity while around women, as it can sometimes be seen as improper or impolite, but men are also sometimes noted to curse more (Jay & Janschewitz, 2008).

Women are often criticized for their use of taboo language, but most research shows no significant difference in how much women swear as oppose to men (Jacobi, 2014). Rassin and Muris (2005) surveyed female undergraduate students about their use of swear words. The researchers hypothesized that swearing would be correlated with general aggression, and high levels of unhappiness and frustration. They also believed that swearing was a result of low life satisfaction. The results of the study support later findings by Jay and Janschewitz (2008),
concluding that the most common use for swears was to express negative emotion. Swearing was also used for positive displays of emotion, shock, or surprise, but negative emotion was the most prominent reason.

The uses of swear words and taboo language is often associated with dominant and aggressive personality types (Jay, 2009). Stereotypically, verbal aggression is associated with African-Americans; thus leading to the use of swears by African-Americans being interpreted in a more negative connotation. In contrast, White-Americans are seen as playful for their use of taboo language (Jacobi, 2014). Racial differences may also coincide with class differences in the use of swear words, although adults from all demographics swear (Jay, 2009).

How adults use taboo language depends heavily on the speaker, the audience, and the environment; and the same factors can lead adults to inhibit their use of taboo language. For example, one audience that adults are the most sensitive to is children (Jay & Janschewitz, 2008). However, despite less exposure to taboo language, children begin producing taboo words very early in their development (Jay, 2009). This section suggests that adults’ production of taboo words uses different parameters than normal language. Could these same rules and restriction exist in children?

Swearing in Children

While children appear to use swear words early in development, there is not much research on how the words are acquired. Jay, known for his copious research on swear words and taboo language, has also noticed that not much research has been done on children and how they learn and use swear words, and calls for more research to be done in the area. Children begin acquiring swear words as early as the ages of 12 to 24 months. Young toddlers may say tamer taboo words (e.g. poop, fart, dork). A child’s vocabulary grows rapidly between the ages of 1
and 4 years of age, which also leads to an increase of taboo words being learned and used. Rates of production increase at 3 and 4 year olds and remain stable until ages 11 or 12 (Jay & Jay, 2013). Children learn words that are often used in a derogatory fashion, but may not fully understand their meaning (Jay, 2009). For example, young boys might use homosexual slurs (i.e. calling a friend a faggot), but may not recognize the implication of the word (Jay, 2009). Parents do not typically encourage early use of taboo words, instead they may either instruct the child not to say them, or may inflict punishment. Often college students recall how they received punishment for swearing in their childhood (Jay et al., 2006).

Parents and caretakers are the primary punishers for the use of taboo language, but often times they are also the primary source. Adults inhibit but do not necessarily eliminate their use of taboo language around children. Some parents are more conscious of their use of taboo language when children are present, and as a result attempt to stifle their use. Although adults attempt to not use profanity in front of children, with the influence of music and television, the exposure is inevitable. Research on the use of profanity and its relevance gives insight into where children would typically hear bad words and why. There is not much research that specifically focuses on children and swear words, but the information on adults is still valuable. Young ears can be particularly vulnerable to the highly emotional situations and attitudes that accompany profane language (Jay & Janschewitz, 2008).

Additionally, research shows that children share a similar perceived gender difference to adults in the use of swear words, with boys seemingly swearing more frequently than girls. Children can be recorded using different taboo words and epithets than adults (i.e. poophead). Often a child’s interpretation of a “bad” word is different than an adult’s, and the interpretations change overtime as children begin to gain more adult knowledge (Jay & Jay, 2013). The reason
children swear or use taboo language could be similar to that of adults, in that they may feel stressed or emotional, but the literature lacks good data to address this issue (Jay, King, & Duncan, 2006). The next natural questions in research, is how do children acquire these taboo words in early childhood and is the acquisition different from that of typical words.

Learning Words

In their most basic form, words work as symbols. Concrete, or object words can be mapped and connected to a tangible object. Children as young as 13 months old may begin to recognize a word as the representation of some real-life object (Koenig & Cole, 2013). Research has revealed that in some cases concrete words can be recalled more easily (Walker & Hulme, 1999). When learning a new word, a child's first instinct is to search for the object the word represents. Their expectation on the initial introduction to a new word is that it has a physical representation. Children ages 2 and older can often pick up on the meaning of a word after being exposed to it only once. For younger children, it may take up ten different instances. When introducing new words to children, the speaker tends to give more contextual cues, which aids in the learning of the word (Koenig & Cole, 2013).

When words do not have that representation it may take a more advanced cognitive process to understand the meaning. Unlike concrete words, more abstract and conceptual words cannot be connected to any one physical object and can be applied and used differently in many situations; this observation could also be true in regards learning swears and taboo words. In a series of studies conducted by Vigilocco and colleagues, they proposed to view how abstract words in general are represented, as oppose to concrete words and if emotion matters when learning them. Through the experiments they found that abstract words were more easily processed, but not because of the associated context (Vigilocca, Kousta, Vinson, Andrews & Del
Campo, 2013). They also concluded that abstract words with an emotional context would be learned earlier than abstract words with no emotional context, affirming that emotion does have bearing on word learning.

Learning the meaning or developing an association for abstract words relies heavily on the speaker and context (Mestres-Missé, Münte, & Rodriguez-Fornells, 2009). This would appear relevant for taboo language in general. The speaker is often familiar to children, whether it is a parent, caretaker, or a character seen on TV. This could also suggest that children may hold an opinion on the speaker, like whether or not they are trustworthy with new words or information. Swear and taboo words are often used in a habitual way, meaning that no matter the context, the production frequency is high (Jay, 2009). Swearing is typically used to convey negative expressions, such as aggression and anger, more so than positive ones (Rassin & Muris, 2005). There is evidence that emotion does aid young children in learning new words, specifically negative emotion (Berman, Graham, Callaway & Chambers, 2013). One could suggest that the more emotionally valenced a taboo word is, the more apt the child is to remembering it (Jay, 2009). If children hear the words used in this way more often, then it may aid in learning taboo language (Jay & Janschewitz, 2008).

The Current Study

Given what we know about word learning in young children, the current study looks to explore the differences in how children acquire a novel taboo word compared to a novel non-taboo word. Children ages 3 to 8 years old were presented with nonsense words, which are framed as novel object words and taboo words. Children were asked to identify the nature of the nonsense words (good/bad, right/wrong), reproduce the word, and identify the original source of
the word. Children are also asked several questions to determine if they hold any particular judgements about the source.

**Research Questions**

Children are introduced to many new words daily. When children are introduced to a taboo word for the first time, are they likely to remember that the word was bad? If so, are they more likely to remember that the quality of the word was bad over other types of words? The rate at which children remember that a word was taboo will be compared to chance, as well as to the rate that they remember the quality of the good, right, and wrong words. If children are more likely to remember the quality of taboo words, then the remembrance rate of the bad word will be greater than that of the good, right, and wrong words. It is also possible that the pattern may change across age, and if so a measure will be included.

Despite being taught not to say them; children still incorporate taboo words into their working vocabulary. Are children more likely to produce taboo words, than other types of words and does this production pattern change with age? The production of the bad word will be compared to the production of the good, right, and wrong words. The production of the bad word will also be compared across ages. If children are more like to produce a taboo word, then it is expected for rates of production of the bad word to be greater than the production of the good, right, and wrong words. If children are not more likely to produce a taboo word, then the production rate of the bad word will be less than or equal to the production rates of the good, right, and wrong words.

It is not exactly known how children learn swear words, but the source they learn from is often a familiar one. In the current study, it will be examined if children remember the source of the taboo word; and if so, will they be more likely to remember the source of a taboo word
compared to other types of words. Children’s recognition of the source of the bad word will be compared to their recognition of the source of the wrong and right words. How often children remember the source of the bad word will also be compared to chance. For children, swear words can sometimes be labeled as a misbehavior. The current study will also examine whether or not children believe the source of bad word is likely to misbehave. Furthermore, children could also believe that the use of swear words may be a language mistake and may be cautious to trust the source of a taboo word with new information. Again, children’s preference for the source of the taboo word will be compared to their preference for the right word and wrong word. If children believe the use of a bad word is linked to a misbehavior, then preference for the taboo word should be observed. Likewise, if children believe that the source of a taboo word is likely to make a language mistake or likely to give incorrect information, then preference for the source of the taboo word should observed in these cases as well.
CHAPTER 2

METHODOLOGY

Participants

Data was collected from a total of 97 participants, ranging from ages 3 to 8 years old. Of each age there were sixteen 3, 4, and 5-year-olds, fifteen 6-year-olds, and seventeen 7 and 8-year-olds. Thirty-five percent of our sample was non-White/Caucasian and 48 out of 97 were female. Participants were recruited from elementary schools and pre-school programs in the Tuscaloosa area.

Materials

Participants were tested in either empty classrooms or teacher work rooms near their original classroom. They were asked to watch short videos that lasted a maximum of 30 seconds. The videos were integrated into a PowerPoint presentation along with the follow-up questions, all shown to participants on a laptop. For the post-assessment, the participants were shown a series of photographs on the same device and asked to answer questions that corresponded to each video they watched. The videos shown to the participants featured four human actors. In addition, the Peabody Picture Vocabulary Test (PPVT) was administered to each participant in order to gather information about the child’s current understanding and knowledge of vocabulary.
Procedure

Participants were first given the PPVT, which consumed the most time. After completing the PPVT, they were allowed to pick out a sticker, provided by the researcher, before moving to the videos and follow-up questions.

In video 1, Actor A gestures at a novel object and labels it with a novel word “This is a dax”. Actor B then responds “*Gasp* that is the wrong word” and corrects Actor A by saying “You should say fep. Fep is the right word. Say fep”. Actor A responds “Ok, this is not a dax. I will not say dax”. In video 2, Actor C knocks over a block tower she is actively building and says “Oh zut!” Actor D then responds “*Gasp* that is a bad word” and corrects Actor C by saying “You should say bim. Bim is a good word. Say bim.” Actor C replies by saying “Ok, I should not say zut. I will not say zut”. After each video, participants were asked the following question.

Word Judgments

**Word Identification – What was the Word?** Participants are presented with the text of the novel words used in both and were asked to identify which words were right or wrong, or good or bad. For video 1, participants were presented with text “dax” and “fep” and were asked, “We heard a right/wrong word in the video. Which was the right/wrong word: dax or fep?” Following video 2, participants are presented with the text “zut” and “bim” and are asked, “We heard a good/bad word in the video. Which was the good/bad word: zut or bim?”

**Word Production – Can You Say the Word?** Participants are asked to produce the words from memory. Following video 1, participants are asked “One of the words was a right/wrong word? Can you say it?” For video 2, participants were asked “One of the words was a good/bad word. Can you say it?”
**Source Judgments**

**Source Identification – Who Said It?** The researcher presented the participants with pictures of the two actors side by side and asked the participant to identify which actor said each novel word. For video 1, participants were shown Actor A and Actor B and asked “Which Actor said the right word/wrong word?” For video 2, participants were shown Actor C and Actor D and asked “Which Actor said the good word/bad word?”

**Linguistic Judgement - Who Mislabeled the Object?** Participants were shown pictures of familiar objects, and then photos of the actors; and were asked which actor named each object correctly or incorrectly. After video 1, participants are shown a picture of an orange cup. The researcher then asked “Someone told me this was a cup. Who do you think called it a cup?” and “Someone told me this was a shoe. Who do you think called it a shoe?” Following video 2, participants are shown a picture of a blue ball and were asked “Someone told me this was a ball. Who do you think called it a ball?” and “Someone told me this was a pencil. Who do you think called it a pencil?” Following each set of questions, participants were given the opportunity to choose between the two corresponding actors.

**Trust Judgement – Who Would You Ask?** Participants were shown a picture of an unfamiliar object and an unfamiliar setting and asked about which actor they believed could correctly identify the object or which actor could inform them on the proper behavior for the setting. In reference to the video 1, participants were shown a picture of a novel toy, followed by pictures the two actors and were asked “I’m not sure what this is called, who should I ask to learn its name?” For the video 2, participants were shown a picture of a pre-school style lunch room and were asked, “I have never been to this place before, and I am not sure what to do here. Who should I ask to learn what to do?”
Behavioral Judgment - Who Misbehaved? Participants are shown two examples of non-conventional or deviant behaviors and asked to choose which actors they believe behaved in what way. For video 1, participants are shown a picture of a person in business casual clothing and person in “tacky” clothing. They were asked “Someone wore nice/silly clothes to school for picture day. Who do you think wore nice/silly clothes?” For video 2, participants are shown a picture of a hand placing trash into a trash can and a picture of a soda can on the group. They were asked, “Someone put trash in the trash can. Who do think put trash in the trash can?” and “Someone put trash on the ground. Who do you think put trash on the ground?”
CHAPTER 3
RESULTS

Results were analyzed by using a chi-square goodness-of-fit test to compare participants’ preferences to chance and then compared to one another using McNemar’s test to determine any change or difference. Some variables were also split by age group (i.e., 3- to 5-year-olds versus 6- to 8-year-olds) to observe any significant differences that may have occurred.

Word Judgments

Word Identification - What was the Word? Children were able to identify the right (65/97, 67%), $\chi^2 (1, N = 97) = 11.224, p < .05$, wrong (63/97, 65%), $\chi^2 (1, N = 97) = 8.670, p < .05$, and bad words (81/97, 84%), $\chi^2 (1, N = 97) = 43.557, p < .05$, at rates higher than predicted by chance. However, Cochran’s Q indicated that performance across these three conditions differed, $Q (97) = 14.97, p = .001$. Follow-up McNemar tests revealed that children were similarly likely to identify the right and wrong words ($p = .774$) but that they more accurately identified the bad word as compared to both the right, $\chi^2 (1, N = 97) = 6.62, p = .01$, and the wrong words, $\chi^2 (1, N = 97) = 9.03, p = .003$. McNemar tests within each age group revealed that older children did not show any significant differences among the pairs of conditions ($ps > .18$) whereas younger children were better at identifying the bad word than either the right or the wrong words, $ps < .05$. Comparison to chance further indicates that the bad word was the only instance where younger children correctly identified the word at above chance levels, whereas older children did so for all three words. See Table 1.
Table 1: Word Identification - What was the Word?

<table>
<thead>
<tr>
<th></th>
<th>3- to 5-year-olds</th>
<th>6- to 8-year-olds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right Word</td>
<td>28/48, 58%</td>
<td>37/49, 76%*</td>
</tr>
<tr>
<td>Wrong Word</td>
<td>26/48, 54%</td>
<td>37/49, 76%*</td>
</tr>
<tr>
<td>Bad Word</td>
<td>38/48, 79%*</td>
<td>43/49, 88%*</td>
</tr>
</tbody>
</table>

*Performance different from chance

Word Identification and Receptive Vocabulary (PPVT). A binary logistic regression was conducted to predict accuracy judgements for the right word, wrong word, good word, and bad word using the raw score of the PPVT as the predictor. For judging the right word, the regression model was a significant predictor indicating that the PPVT raw score reliably distinguished between correct and incorrect judgments of the right word, $\chi^2 (1, N = 97) = 4.36, p = .037$. Similarly, for judging the wrong word, the model was again a significant predictor indicating that the PPVT raw score reliably distinguished between correct and incorrect judgments of the wrong word, $\chi^2 (1, N = 97) = 8.35, p = .004$. In contrast to the other word judgments, the regression model was not a significant predictor for judging the bad word indicating that the PPVT raw score (i.e., the size of a child’s receptive vocabulary) did not reliably distinguished between correct and incorrect judgments of the bad word, $\chi^2 (1, N = 97) = 1.53, p = .216$. Thus, correctly identifying the bad word was the only judgment that appeared unrelated to receptive vocabulary size. Finally, an independent samples t-test indicated that older children’s receptive vocabulary was significantly bigger than younger children’s, $t (95) = 11.78, p < .01$.

Word Production - Can You Say the Word? When prompted to produce the right, wrong, and bad words, Cochran’s Q indicated that performance across these three conditions differed, $Q (97) = 14.00, p = .001$. Follow-up McNemar tests showed that children were similarly likely to say the right and wrong words ($p = .774$) but that they were more likely to say the bad word as
compared to both the right, \( \chi^2 (1, N = 97) = 5.94, p = .015 \), and the wrong words, \( \chi^2 (1, N = 97) = 8.23, p = .003 \). McNemar tests within each age group revealed that younger children did not show any significant differences among the pairs of conditions (\( ps > .10 \)) whereas older children were more likely to say the bad word than either the right or the wrong words, \( ps < .05 \). Older children were 3.5X more likely to say the bad word than younger children, \( \chi^2 (1, N = 97) = 17.02, p < .001 \). See Table 2.

Table 2: Word Production - Can You Say the Word?

<table>
<thead>
<tr>
<th></th>
<th>3- to 5-year-olds</th>
<th>6- to 8-year-olds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right Word</td>
<td>5/48, 10%(^{\text{a}})</td>
<td>16/49, 33%(^{\text{a}})</td>
</tr>
<tr>
<td>Wrong Word</td>
<td>2/48, 4%(^{\text{a}})</td>
<td>17/49, 35%(^{\text{a}})</td>
</tr>
<tr>
<td>Bad Word</td>
<td>8/48, 17%(^{\text{a}})</td>
<td>28/49, 57%(^{\text{b}})</td>
</tr>
</tbody>
</table>

*Note: Different superscripts represent statistically significant differences*

Source Judgments

Source Identification – Who Said It? Overall, children were able to identify the source of the right word (74/97, 76\%), \( \chi^2 (1, N = 97) = 26.7814 (p < .01) \), the source of the wrong word (73/97, 75\%), \( \chi^2 (1, N = 97) = 24.793 (p < .01) \) and the source of the bad word (78/97, 80\%), \( \chi^2 (1, N = 97) = 35.887, (p < .01) \) at rates higher than predicted by chance, although these rates did not differ from each other, \( Q (97) = 1.24, p = .539 \). A comparison by age indicated that older children (44/49, 90\%) were more accurate at identifying the right speaker than younger children (30/48, 65\%), \( \chi^2 (1, N = 97) = 9.987, p = .002 \). Similarly, older children (43/49, 88\%) were more accurate at identifying the wrong speaker than younger children (30/48, 65\%), \( \chi^2 (1, N = 97) = 8.31, p = .005 \). In contrast, no differences were found between older (40/49, 82\%) and younger (38/48, 79\%) children for identifying the bad speaker (\( p = .480 \)). See Table 3.
Table 3: Source Identification – Who Said It?

<table>
<thead>
<tr>
<th></th>
<th>3- to 5-year-olds</th>
<th>6- to 8-year-olds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Right Word</strong></td>
<td>30/48, 65%*</td>
<td>44/49, 90%*</td>
</tr>
<tr>
<td><strong>Wrong Word</strong></td>
<td>30/48, 65%*</td>
<td>43/49, 88%*</td>
</tr>
<tr>
<td><strong>Bad Word</strong></td>
<td>38/48, 79%*</td>
<td>40/49, 82%*</td>
</tr>
</tbody>
</table>

*Performance different from chance

Linguistic Judgement - Who Mislabeled the Object? When identifying who might have mislabeled a familiar object, children tended to select the wrong speaker at a rate higher than predicted by chance (59/97, 61%), $\chi^2 (1, N = 97) = 4.55$ ($p = .033$). But, children did not select the bad speaker at above chance rates (52/97, 54%). These rates did not differ from each other ($p = .349$). A comparison by age indicated that older children (37/49, 76%) were more likely to judge that the wrong speaker had mislabeled an object than younger children (22/48, 46%), $\chi^2 (1, N = 97) = 8.96$, $p < .01$. Likewise, older children (32/49, 65%) were more likely to judge that the bad speaker had mislabeled an object than younger children (20/48, 42%), $\chi^2 (1, N = 97) = 5.45$, $p < .05$. See Table 4.

Table 4: Linguistic Judgement - Who Mislabeled the Object?

<table>
<thead>
<tr>
<th></th>
<th>3- to 5-year-olds</th>
<th>6- to 8-year-olds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wrong Speaker</strong></td>
<td>22/48, 46%</td>
<td>37/49, 76%*</td>
</tr>
<tr>
<td><strong>Bad Speaker</strong></td>
<td>20/48, 42%</td>
<td>32/49, 65%*</td>
</tr>
</tbody>
</table>

*Performance different from chance

Trust Judgement - Who Would You Ask? When identifying who they would trust for new information, children avoided the wrong speaker at above chance rates (only 33/97, 34%, chose the wrong speaker), $\chi^2 (1, N = 97) = 9.91$ ($p = .002$). Similarly, children avoided trusting
the bad speaker (only 39/97, 40%, chose the bad speaker), although here the rates were only marginally different from chance. These rates did not differ from each other \( (p = .405) \). A comparison by age indicated that older children (8/49, 16%) were more likely to avoid trusting the wrong speaker than younger children (25/48, 52%), \( \chi^2 (1, N = 97) = 13.81, p < .01 \). Likewise, older children (14/49, 16%) were more likely to avoid trusting the bad speaker than younger children (25/48, 52%), \( \chi^2 (1, N = 97) = 5.58, p < .05 \). See Table 5.

Table 5: Trust Judgement - Who Would You Ask?

<table>
<thead>
<tr>
<th></th>
<th>3- to 5-year-olds</th>
<th>6- to 8-year-olds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wrong Speaker</strong></td>
<td>25/48, 52%</td>
<td>8/49, 16%*</td>
</tr>
<tr>
<td><strong>Bad Speaker</strong></td>
<td>25/48, 52%</td>
<td>14/49, 29%*</td>
</tr>
</tbody>
</table>

*Performance different from chance

**Behavioral Judgement - Who Misbehaved?** When identifying who might have misbehaved, children tended to select the wrong speaker at a rate higher than predicted by chance (63/97, 65%), \( \chi^2 (1, N = 97) = 8.670, p < .05 \). Children also tended to select the bad speaker at above chance rates (64/97, 65%), \( \chi^2 (1, N = 97) = 9.907, p < .05 \). These rates did not differ from each other \( (p = .355) \). A comparison by age indicated that older children (34/49, 69%) and younger children (29/48, 60%) did not differ in choosing the wrong speaker as having misbehaved, \( p > .05 \). Likewise, older children (31/49, 63%) and younger children (33/48, 67%) did not differ in choosing the bad speaker as having misbehaved, \( p > .05 \). See Table 6.
Table 6: Behavioral Judgement - Who Misbehaved?

<table>
<thead>
<tr>
<th></th>
<th>3- to 5-year-olds</th>
<th>6- to 8-year-olds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrong Speaker</td>
<td>29/48, 60%</td>
<td>34/49, 69%*</td>
</tr>
<tr>
<td>Bad Speaker</td>
<td>33/48, 67%*</td>
<td>31/49, 63%</td>
</tr>
</tbody>
</table>

*Performance different from chance
CHAPTER 4
DISCUSSION

The primary goal of the current study was to expand knowledge on children’s acquisition of taboo words compared to typical object words; furthermore, the study aimed to observe if children used their knowledge of the word to judge the source of a taboo word. All children were shown two videos where they were introduced to right and wrong novel object words, and good and bad novel “taboo” words. Following, they were asked questions that were directed towards their learning and recollection of the words, their production of the words, and their identification and judgments of the word sources. Children’s receptive vocabulary was also measured.

Word Identification - What was the Word?

Of central interest in this study was whether children would learn bad (i.e., taboo) words differently from object words. To test this, children were introduced to novel object words that were either treated as right or wrong and novel taboo words. For older children, results showed that they correctly identified each type of word at above chance levels and did not differ in their ability to correctly identify one type over another. Thus, it appeared older children were equally good at learning a novel word they thought to be bad as they were a novel word they thought to be right or wrong. Younger children did not show the same pattern. Instead, the bad word was the only word they correctly identified at rates better than guessing. Therefore, unlike older children, younger children were better at learning a novel word they thought was bad word than they were a novel word they thought was right or wrong. In fact, when it came to learning the
bad word, younger children were just as good as older children. This was not true for learning the right or the wrong word.

Overall, this finding suggests that bad words might be learned differently from other types of words, especially for younger children. This is supported by results from the regression analyses. The regression model suggested that the receptive vocabulary size was an accurate predictor of whether or not a child could identify the right or wrong word, but not the bad word. Thus, the more receptive vocabulary a child has the better they are at learning new words. However, the levels of receptive vocabulary seem to be less relevant when identifying a bad word suggesting that learning a bad word is different from the more typical object word learning. Notably, younger children’s accuracy at identifying the bad word was just as good as older children’s, despite a smaller receptive vocabulary.

Young children’s inability to correctly identify the right word was somewhat surprising given that children in this age range typically show strong performance in word learning tasks (Gordon, McGregor, Waldier, Curran, Gomez, & Samuelson, 2016). However, the design of this study differed from traditional designs in word learning. Here children were asked to identify the right word (e.g., “What was the right word: dax or fep?”). In more traditional word learning studies children are not asked to judge the rightness (or wrongness) of a word. Instead, they are more often asked to select the referent of a novel word (e.g., “Which one is a dax?”) or to name a novel object (e.g., “What is this called?”) (Carey, 2010). The rightness/wrongness framing might have hurt younger children’s performance in the current study, at least for object names.

**Word Production - Can You Say the Word?**

There was also an interesting question as to whether children would produce the words they learned in the study. Each child was prompted to produce the right, wrong, and bad words
(e.g. “We heard a right word. Can you say it?”) Production was generally low for all participants; however, it was extremely rare to observe production from younger children (i.e., 10%). Older children did produce the right, wrong, and bad words more often than younger children, but still at a low frequency (i.e., 41%). Furthermore, an analysis showed that there was not a significant gender difference in production for either age group ($p < .05$). One possibility is that children knew the bad word and elected not to say it because of its tabooess. However, older children actually produced the bad word more often than they produced either the right word or the wrong word. Clearly, the badness of the word made a difference in how good children learned it – at least as indicated by their production – but does not seem to be a factor in explaining low production. Assuming that learning is actually taking place (which seems likely since the identification rates were so high for each word) the negative valence of the word may have made it stand-out against everyday object words.

When children watched the videos as a part of the study, the bad word was punctuated with emotion. Research supports the idea that emotion may aid in the word learning of young children (Berman et al., 2013), even for taboo words (Jay, Caldwell-Harris, & King, 2005; Vigilocca et al., 2013). Explaining low production on the right and wrong word is more challenging. Older children failed to produce these words roughly 2/3 of the time and were no more likely to produce the right word than the wrong word. Low production of the wrong word makes sense, why invest in learning, remembering, and reproducing a language error? Low production of the right word was surprising. Perhaps the task was too difficult.

First, children in the current study were asked to produce the word after only minimal exposure to it. Previous studies have shown production improves when children have additional experience with a word over time (Mainela-Arnold, Evans, & Coady, 2010). More in depth word
learning studies typically complete trials and tasks over longer time periods, which result in more effective learning, but also more production (Kapalková, Polišenská, & Süssová, 2016). Even though the focus is taboo words, word learning is the basic principle, and a longitudinal design may be more beneficial and meaningful in future research. Second, children were asked to complete the production task after having heard as many as four different novel words. It is possible that the participants were overloaded with novel lexical information, which may have hurt performance. Third, production tasks depend on recall memory (unlike identification tasks or forced choice tasks) and recall tests usually result in lower performance in children (Brown, Weighall, Henderson, & Gaskell, 2012).

**Source Identification and Judgements**

The majority of children correctly identified the source of the wrong word, the source of the right word, and the source of the bad word. Although, identification rates did not differ – they did not perform better in one condition over the other. Older children were significantly better at identifying the source of the right word and the source of the wrong word, showing that accuracy in these judgments increased with age. Notably however, younger children were just as accurate as older children when recognizing the source of the bad word. This is another key indication that something about the bad word was indeed different, such that it made the user stand out.

Other judgements about the sources of the bad and wrong words varied. Overall, children did not show a preference for the wrong speaker over the bad speaker when judging who might have made a language mistake, suggesting that they were likely to believe that either source could have made the error. Whereas younger children appeared to be guessing in both cases (i.e., chose right and wrong speaker equally and chose good and bad speaker equally), older children clearly favored the wrong and bad speakers as likely to make a labeling mistake. This result
might suggest that taboo words are not seen as language mistakes. When asked who to trust for new information, children did not avoid the source of the wrong word more than they avoided the source of the good word. Whereas younger children again appeared to be guessing in both cases (i.e., chose right and wrong speaker equally and chose good and bad speaker equally), older children actively avoided the wrong and bad speakers as preferred sources of new information. Research confirms that children can be selective learners and do have a tendency to trust sources who have been accurate in the past (Brosseau-Liard, 2014). Children also believe that prosocial actors (i.e., those who help or are nice) are more trustworthy (Lane, Wellman, & Gelman, 2013). Perhaps findings like this explain the advantage secured by right and good speakers in terms of trustworthiness. Finally, when judging who may have misbehaved, children favored choosing the wrong and bad speakers at rates better than guessing, but did not favor one speaker over the other. This result might suggest that taboo words are not seen as misbehaviors.

Overall, children appeared to be good at learning bad words and their sources. In both cases however, older children were more accurate than younger children. Interestingly, and unlike object words, better accuracy in identifying the bad word was not linked to larger vocabularies suggesting that the mechanisms active in learning bad words might not be the same as those activated in learning object words. This was especially obvious in younger children who identified the bad words better than either the right or wrong words. This might suggest that younger children are more sensitive to the good/bad quality than to the right/wrong quality of a word. In the case of taboo words, children may be motivated to remember them out of obligation – not necessarily to use, but to not use. As for the sources of taboo words, they were not viewed as more likely to make language mistakes or to misbehave compared to the sources of wrong words suggesting they may not be ascribing any broader attributions to the taboo word user.
The results of the current study could hold various implication for further research. A missing factor of the study, is that children’s perceptions of bad words are mostly shaped by their home life. Parental attitudes are unaccounted for in the current study, but could be included in future research by including a questionnaire for parents/guardians to complete. In households where swearing is strictly forbidden and media is monitored, high learning and low production could be expected. In this case, the emphasis on the taboo quality of the word would be a significant factor. For children from homes were the rules on taboo language are more relaxed, high learning and higher production could be observed. Although, the study does not present any conclusive results on how taboo language is learned, it is clear that learning of “bad” words is taking place and that it is indeed different from the learning of object words, especially for younger children.
REFERENCES


August 15, 2016

Jason Scofield, Ph.D.
Department of Human Development & Family Studies
College of Human Environmental Sciences
The University of Alabama
Box 876160

Re: IRB # 10-OR-115-R6 “Learning What Not to Say”

Dear Dr. Scofield:

The University of Alabama Institutional Review Board has granted approval for your renewal application.

Your renewal application has been given expedited approval according to 45 CFR part 46. Approval has been given under expedited review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Your application will expire on August 14, 2017. If your research will continue beyond this date, complete the relevant portions of Continuing Review and Closure Form. If you wish to modify the application, complete the Modification of an Approved Protocol Form. When the study closes, complete the appropriate portions of FORM: Continuing Review and Closure.

Please use reproductions of the IRB approved informed consent form to obtain consent from your participants.

Should you need to submit any further correspondence regarding this proposal, please include the above application number.

Good luck with your research.

Sincerely,

[Signature]
UNIVERSITY OF ALABAMA
INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS
REQUEST FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS

I. Identifying Information

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Second Investigator</th>
<th>Third Investigator</th>
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<tbody>
<tr>
<td>Names: Jason Scofield</td>
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<td><a href="mailto:scofield@cchei.ua.edu">scofield@cchei.ua.edu</a></td>
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Title of Research Project: Learning What Not to Say

Date Submitted: 7-29-16
Funding Source:

Type of Proposal |
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Please attach a continuing review of studies form
Please enter the original IRB # at the top of the page

II. NOTIFICATION OF IRB ACTION (to be completed by IRB):
Type of Review: Full board

IRB Action: Expedited

Rejected
Tabled pending revisions
Approved pending revisions
Approved this proposal complies with University and federal regulations for the protection of human subjects.

Approval is effective until the following date: 8/15/2016

Items approved: Research protocol (dated 5/4/16)
Informed consent (dated 5/4/16)
Recruitment materials (dated 5/4/16)
Other

Approval signature: Date 8/15/2016