The Effects of Context and Individual Difference in L2 Taboo Word Comprehension

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THE EFFECTS OF CONTEXT AND INDIVIDUAL DIFFERENCE IN L2 TABOO WORD COMPREHENSION

By

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Abstract

Previous research suggests that high emotionally salient words are different when it comes to language processing. This paper focuses on the interaction of context, individual difference, and the second language in the comprehension of taboo words. Using the Situated Speaker-Hearer Individual Difference Theory (SSHIDT) to study this interaction, this research reproduces a previous study investigating taboo comprehension. Forty-one bilinguals of English (L1) and Spanish (L2) participated in an in-lab word-by-word sentence reading task and an online questionnaire. To determine the influence of the taboo words and the context they appear in, the sentences contained two variables that were each manipulated on two levels: Taboo or Non-Taboo, and Surprised or Not-Surprised. In addition, the participants’ self-reported propensity to offense by Spanish taboo words were collected and incorporated into the results as a covariate. ANOVA unveils that there is no significant interaction between the taboo, surprise, and propensity to offense items. This suggests that emotionally salient words in our second language do not carry the same strength as they do in our first language.
Introduction

How does the feeling of hearing a novel swear word in your second language differ from hearing a familiar swear word in your native language? Does it matter who is saying the word or how other people react to hearing the word? Swear words or taboo words are defined as strong emotional words that are profane, morally questionable and often socially unacceptable. In research, taboo word comprehension has received more attention in recent years, specifically regarding how the context it appears in and the individual difference of a person processing the taboo word influence comprehension. Different theories propose how one processes these high emotionally salient words when they are encountered within context. This study reproduces major elements of an experiment by Christianson et al. (2017) that examined the Situated Speaker-Hearer Individual Difference Theory (SSHIDT). This theory investigates the mechanisms that underlie how individual difference and a swear word’s context influence how one comprehends sentence reading. This study is concerned with how individuals perceive and comprehend taboo words that they encounter in their second language and how the second language influences comprehension.

Previous Research

A foundational theory of multilingual taboo word comprehension is that the more proficient the speaker is in a language, the more the taboo word in that particular language has a potential emotional effect. Deweale (2004) investigated the “Emotional force” of taboo words in multilinguals. This study examined that languages learned first, chronologically, have higher emotional resonance than languages learned later. Therefore, multilinguals should perceive a stronger emotional weight in taboo words in their first language (L1) than in taboo words from their second and third languages. In another article, Deweale finds that the environment in which
the second language is learned influences significantly how taboo words are comprehended. They found that taboo words carried more emotional force when the second language was learned in a ‘naturalistic’ environment than when the second language was learned in ‘mixed’ or ‘traditional/classroom’ environment (Deweale 2004).

An important idea proposed by Altarriba (2000) and Amati-Mehler, Argentieri & Canestri (1993) is that there is an emotional detachment when uttering emotionally strong material or taboo words in a second language. The first language is the language where we typically feel the most personal involvement and sense of identity, whereas the second language or a language learned after puberty is associated with personal and emotional distance. Furthermore, Bond & Lai (1986) and Javier & Marcos (1989) report that conversing in one’s second language and code-switching can be used as a mechanism to distance oneself from emotionally salient and potentially anxiety provoking words and ideas. The second language can be used as a tool to alleviate the emotional stress of certain content that would typically be too threatening to express in the speaker's first language.

A study by Rintell (1984) demonstrates further that emotional perception is more difficult in the L2. They gave students learning English as a foreign language the task of rating the emotional intensity of emotionally salient words in English. The more advanced the students were in the English class, the better they performed in this task. However, even the most advanced students performed poorly compared to the control group of native English speakers.

Research exploring the embodied theoretical approach to language compared bilinguals’ comprehension of emotional words. This theory proposes that we associate words’ sensorimotor or emotional qualities with our own experience with the word. For example, ‘grief’ is an emotional word that stimulates our emotional experience associated with this word (i.e., a lump
in your throat). Therefore, due to lack of frequent experience and sensorimotor association with the words in a second language, they found that bilinguals’ L2 comprehension of emotional words suffered (Sheikh & Titone, 2016).

Finally, the cornerstone of this experiment comes from the article by Christianson et al. (2017). This study coined a new theory of emotional word comprehension, the Situated Speaker-Hearer Individual Difference Theory (SSHIDT). The SSHIDT is composed of two preexisting theories: the binding theory and the global resource theory, both of which examine taboo words in relation to the context the taboo words present in. The binding theory states that strong emotionally stimulating stimuli are associated with their context when comprehended. The global resource theory states that when too much cognitive attention is placed onto the taboo word, comprehension of the surrounding context will suffer. Thus, the main way to determine which theory is more influential in each sentence is to test whether or not the individual attended to and comprehended the taboo word’s context.

This study reveals that there is a significant interaction of taboo word presence, context, and individual difference on global sentence reading times, which suggests that regarding the condition of the sentence and how the individual is offended by taboo words, these influence how they are able to comprehend the taboo words. They find that in the Taboo and Surprising context condition, participants had a significantly higher global reading times (Christianson et al. 2017).

This Research and Hypotheses

The current study aims to reproduce many of the elements of the Christianson et al. (2017) article. The experiment by Christianson et al. (2017) was an eye-tracking study whereas
this study investigates word-by-word sentence reading tasks. Also, this experiment analyzes the SSHIDT of taboo word comprehension in the second language of participants compared to the original study which was only conducted in the participant’s first language.

Due to the test language being the participants’ second language, we expect to find different results than those found by Christianson et al. (2017). Because we expect that bilinguals of English (L1)/Spanish (L2) should perceive less of an emotional force in their second language, we expect to see less of an emotional SSHIDT effect in the word-by-word component of this study. However, we expect that individual difference of participants’ propensity to offense by taboo words to yield similar results found by Christianson et al. (2017) according to the SSHIDT: if a participant reports being highly likely to be offended by taboo words, then the global resource theory will occur, or if a participant reports being less likely to be offended by taboo words, then the binding theory will occur.

Method

Participants

Forty-one undergraduate students at a public four-year university participated in this study. The participants were between the ages of 18-23 (M=19.69). Participants were native speakers of American English (16+ students were heritage speakers of Spanish) and had varying levels of Spanish proficiency. Participants self-selected to participate in the experiment either by signing up with Sona, an intramural online experiment signup system, or by seeing a recruitment flyer around the university campus. All the students were recruited at Florida State University and were compensated for their participation with either class credit or 10 US dollars.

Materials
The materials consisted of 32 test sentences and 64 filler sentences which were counterbalanced between four conditions. The sentences were imported to software that allowed for word-by-word sentence reading that recorded reading times for each word and for the whole sentence. The experimental design consisted of two variables each with two conditions, creating a 2 x 2 within-subjects factorial design. Items were distributed via a Latin Square across four lists. The first variable was the presence of a taboo word, with the levels of a taboo word appearing in the sentence or a non-taboo word appearing in the sentence. Non-taboo words are words that do not have any high emotional value and either semantically or phonetically suggest a connection to a taboo word or expression (e.g., ‘Fudge’ and ‘Shoot’ would be the English non-taboo words of ‘F**k’ and ‘S**t’, respectively). The second variable was the situation (also referred to as Surprise or Surprisal), with levels of a perceived surprised audience or a perceived audience that was not surprised. Filler sentences were controlled to be the same length as the test sentences. All sentences had an exclamation. In the test sentences, the exclamation always appeared at the same point in the sentence. Exclamations in the filler sentences varied in sentence placement and never contained taboo words.

Below, to better illustrate the Taboo and Surprising variables, is an example of a test sentence in each condition with its corresponding English translations:

El coro quedó conmocionado cuando su instructor dijo, “¡Carajo!” cuando el pianista estornudó. The chorus was shocked when its instructor said, “F**k!” when the pianist sneezed (Surprised, Taboo).

El coro no se sorprendió cuando su instructor dijo, “¡Carajo!” cuando el pianista estornudó. The chorus was not surprised when its instructor said, “F**k!” when the pianist sneezed (Not-Surprised, Taboo).
El coro quedó conmocionado cuando su instructor dijo, “¡Carachó!” cuando el pianista estornudó. The chorus was shocked when its instructor said, “Fudge!” when the pianist sneezed (Surprised, Non-Taboo).

El coro no se sorprendió cuando su instructor dijo, “¡Carachó!” cuando el pianista estornudó. The chorus was not surprised when its instructor said, “Fudge!” when the pianist sneezed (Not-Surprised, Non-Taboo).

Procedure

Participants came into a psychology lab and then read and signed an informed consent form. The principal investigator or lab assistants logged participants onto lab computers to initiate the word-by-word reading portion of the experiment. After, participants filled out an online questionnaire that asked about their demographic information, Spanish education history and language proficiency, likelihood of being offended by taboo words, and usage of taboo words in Spanish and English. On the final page of the questionnaire, participants were presented with a taboo word comprehension post-test, where participants were prompted to translate the taboo words from Spanish to English. Participants’ translations were then graded on a three-point scale of accuracy.

Results

Before discussing the main results of the study, descriptive statistics from our questionnaires were examined to determine whether our participant sample was adequate to address the research questions. We asked each participant to report their overall proficiency in Spanish on a five-point scale (1= Excellent, 2= Good, 3= Average, 4= Poor, 5= Terrible). Participants self-reported a mean overall proficiency of 1.98 (SD= 0.72), indicating that they
knew Spanish well enough to take part in a reading study. Participants also reported their age, in years, of when they started to learn Spanish (M=4.88, SD=5.15). As discussed later, this is slightly problematic in that we were hoping to have a sample of participants who acquired Spanish as a genuine L2; an average age of acquisition under 5 suggests that at least some of our participants were native speakers of Spanish. Finally, we asked participants to report their likelihood of offense on a five-point scale (1=Extremely likely, 2=Somewhat likely, 3=Neither likely nor unlikely, 4=Somewhat unlikely, 5=Extremely unlikely). Participants self-reported their mean likelihood of offense at 3.48 (SD=1.21). Finally, participants performed quite well translating the taboo words from Spanish to English in the taboo word comprehension post-test. Graded on a three-point scale (-1=incorrect, 0=partially correct, 1=correct), participants earned a mean score of 0.47, indicating that they were largely familiar with the Spanish taboo words presented in the test sentences.

The reading times for the critical region of the sentence (Pre-Critical word, Critical word, Post-Critical word) were analyzed with a 2 (Taboo: Taboo vs Not Taboo) x 2 (Surprising: Surprising vs Not Surprising) x 3 (Word position: Pre-Critical, Critical, Post-Critical) within-participants ANOVA. The degree to which participants rated themselves as being likely to offense by taboo words in Spanish was included in the ANOVA as a covariate. The results of this ANOVA are presented in Table 1. There was a significant effect of Word position on reading times [F(2,78)=3.44, p=.037]. This effect of word position can be observed in Figure 1, with the corresponding recorded reading times in Table 2. There was not, however, a significant interaction of Taboo x Surprise x Word x Offense [F(2,78)=.072, p=.931] which demonstrates that the SSHIDT theory proposed by Christianson et al. (2017) cannot be applied to the data collected in this experiment.
<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p-value</th>
<th>η²</th>
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<td>13127</td>
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<td>0.621</td>
<td>0.006</td>
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<td>1, 78</td>
<td>77799</td>
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<td>0.345</td>
<td>0.023</td>
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<td>6563.89</td>
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<td>2, 78</td>
<td>960154</td>
<td>3.44</td>
<td>0.037</td>
<td>0.081</td>
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<td>1</td>
<td>0.372</td>
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<td>7516.41</td>
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<td>0.931</td>
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Table 1. ANOVA Table for Analysis
Figure 1. Mean Reading Times of words per each condition

Table 2. Mean Reading Time (milliseconds) per Word Position
Discussion

The data demonstrate that there is no statistically significant interaction of surprising context, taboo word, or individual difference when comprehending strong emotional words in the second language. Therefore, the SSHIDT proposed by Christianson et al. (2017) is not applicable to the results of the current experiment. However, the results are, in part, consistent with what we hypothesized before beginning the study: There will be a lessened or blunted emotional response to the taboo words due to the presentation of the taboo words being in the participant’s second language. Still, we also hypothesized that there would be a significant effect of Taboo x Surprise x Word x Offense, which did not turn out to be the case in the data. Due to the lack of this main effect, we are unable to analyze the results via the SSHIDT. Without an established effect in the data, we cannot use the theory as means to interpret this non-existent four-way interaction.

An interesting finding to consider in the results is that the Taboo x Surprised condition had the highest mean reading time for the taboo word than any other condition. Though this increased mean reading time was not significantly different from the other conditions, this trend is consistent with the findings of the SSHIDT of Christianson et al.’s study.

Another important aspect of the results that should be noted is that 16 of the 43 participants reported that Spanish was their first language. Additionally, many of the participants that reported learning English as their first language reported that they learned Spanish at rather young ages (e.g., 2-9 years old). Only 11 participants reported learning Spanish at or after the age of 10. Bilinguals that learned Spanish at such an early age were not the target sample, thus their presence in the data could have skewed or otherwise influenced our results. Nevertheless, one could expect that having more heritage speakers in the participant pool would skew the data to show more of an effect than there is, if indeed, heritage speakers are more familiar and
emotionally attuned to the Spanish taboo words. Thus, we can expect that if the participant sample was strictly English(L1)/Spanish(L2), where the mean age for learning Spanish as their second language was after puberty, we would possibly see even less of an interaction in the comprehension of taboo words.

The next step in pursuing this experiment is to perform identical follow-up experiments with exclusively English(L1)/Spanish(L2) bilinguals that learned Spanish after puberty. Previous research suggests that languages acquired post-puberty carry less personal or emotional attachment (Amati-Mehler, Argentieri & Canestri, 1993). This way, the results of these follow-up tasks should establish more validity in determining what influence the second language has on the comprehension of highly emotional stimulus in bilinguals that learned their second language at a later age.
THE EFFECTS OF CONTEXT AND INDIVIDUAL DIFFERENCE IN L2 TABOO

References


Appendix A

Test Sentences: (Surprised/Non-Surprised) & (Taboo/Non-Taboo)

1. (Todos se sorprendieron/Nadie se sorprendió) cuando la princesa proclamó, “¡(Come verga/Come verdura)!” cuando el príncipe llegó tarde.
2. El coro (quedó conmocionado/no se sorprendió) cuando su instructor dijo,
   “¡(Carajo/Caracho)!” cuando el pianista estornudó.
3. (Todos en la cena se sorprendieron/Nadie en la cena se sorprendió) cuando la presidenta exclamó, “¡(Chucha/Chicharrón)!” cuando probó su comida.
4. (Todos se conmocionaron/Nadie quedó conmocionado) cuando el monje gritó, “¡(Concha su madre/Cónchale)!” cuando se le derramó su te.
5. (Toda la clase/Nadie en la clase) se quedó conmocionad@ cuando la profesora gritó, “¡(Concha su madre/Cónchale)!”, cuando se le cayó su café.
6. (Las masas se sorprendieron/Nadie se sorprendió) cuando el Papa exclamó, “¡(A la mierda/A la miércoles)!” cuando se dio cuenta que se perdió su reloj.
7. (El grupo/Nadie) se sorprendió cuando el misionero exclamó, “¡(Qué perra/Qué fea)!” cuando acabó de estornudar.
8. Los pasajeros del autobús (se conmocionaron/no se conmocionaron) cuando la niñita dijo, “¡(Imbécil/Tonto)!” cuando el cobrador le pisó su mochila.
9. (Todos se sorprendieron/Nadie se sorprendió) cuando el médico exclamó, “¡(Hijo de puta/Hijo de cuca)!” cuando un paciente falleció.
10. La pareja (se quedó conmocionada/no se conmocionó) cuando su terapeuta gritó, “¡(Hijo de puta/Hijo de cuca)!” cuando se le escapó un pedo.
11. Los niños (quedaron/no quedaron) sorprendidos cuando su mamá gritó, “¡(Carajo/Caramba)!”, cuando se chocó con otro carro.

12. Las hermanas (se sorprendieron/no se sorprendieron) cuando la monja exclamó, “¡(Maldita sea/Dios Mío)!”, cuando pisó el chicle.

13. La audiencia (quedó conmocionada/no se conmocionó) cuando la periodista dijo, “¡(De la chingada/De la tamalada)!”, cuando acabó de toser.

14. Los vecinos (se sorprendieron/no se sorprendieron) cuando la abuelita gritó, “¡(De la chingada/De la tamalada)!”, cuando se quemaron las galletas.

15. El congreso (se quedó conmocionado/no se sorprendió) cuando el senador proclamó, “¡(Cara de verga/Cara de verdura)!”, cuando debatía con otro.

16. El templo (se sorprendió/no se sorprendió) cuando el rabino gritó, “¡(Chucha/Chicharrón)!”, cuando se le cayó su libro.

17. Los pacientes (se conmocionaron/no se sorprendieron) cuando la enfermera dijo, “¡A la mierda/A la miércoles)!”, cuando se cayó.

18. El corte (se conmocionó/no se conmocionó) cuando el juez articuló, “¡(Idiota/Sonso)!”, cuando el abogado acabó de gritar.

19. (Todos se sorprendieron/Nadie se sorprendió) cuando el cardiólogo exclamó, “¡(Coño, no jodas/Madre mía)!”, después de haber visto los resultados de un paciente.

20. Los niños (se sorprendieron/no se sorprendieron) cuando la directora del colegio gritó, “¡(Qué idiota/Qué sonso)!”, cuando vio a su ex-novio.

21. Las masas (se sorprendieron/no se sorprendieron) cuando el primer ministro del país exclamó, “¡(Maldita sea/Dios Mío)!”, cuando vio la mancha en su corbata.
22. El país (se sorprendió/no se sorprendió) cuando el reportero de la radio gritó, “¡(Eres imbécil/Eres tonto)!” mientras peleaba con otro reportero.

23. Los padres (se quedaron conmocionados/no se conmocionaron) cuando la niñera proclamó, “¡(Coño, no jodas/Basta)!” cuando el bebé vomitó.

24. El presidente chino (se conmocionó/no se sorprendió) cuando el embajador dijo, “¡(Me cago en Dios/Me cacho en diez)!” cuando probó la comida picante.

25. Los adolescentes (quedaron conmocionados/no se sorprendieron) cuando la señora religiosa exclamó, “¡(Me cago en la leche/Café con leche)!” cuando se le cayó su cartera.

26. Las señoras (se sorprendieron/no se sorprendieron) cuando el sacerdote proclamó, “¡(Puta madre/Tamales)!” cuando se olvidó su aniversario.

27. (Todos quedaron conmocionados/Nadie se sorprendió) cuando el gobernador gritó, “¡(Puto/Qué puro)!” cuando vio a su viejo amigo.

28. (Todos se sorprendieron/Nadie se sorprendió) cuando la anciana dijo, “¡(Perra/Fea)!” cuando se encontró con su nieta.

29. Los pacientes (se sorprendieron/no se sorprendieron) cuando el radiólogo expresó, “¡(Me cago en la leche/Café con leche)!” después de haber mordido su lengua.

30. Los empresarios (quedaron sorprendidos/no se sorprendieron) cuando la recepcionista gritó, “¡(Me cago en Dios/Me cacho en diez)!” cuando llamó su ex-novio.

31. El pueblo (quedó conmocionado/no se conmocionó) cuando el rey proclamó, “¡(Puto/Qué puro)!” cuando vio su enemigo.

32. La clase (se sorprendió/no se sorprendió) cuando la miss gritó, “¡(Puta madre/Tamales)!” cuando su colega le asustó.