The Perception of Foreign Gendered Nouns by High School Students

Sindhu Sivasankar, Newark Charter School, Newark, DE

E-mail: sindhukit.siva@gmail.com

Abstract

Several studies, such as Sabourin et al. (2006) and Prewitt-Freilino et al. (2012), have agreed that gendered language and gender bias have a significant relationship. However, many studies have potential confounding factors, such as the participants' culture and character, as well as noun meanings, which can affect the measured bias and perception of genders. The purpose of the study was to eliminate these confounding factors and understand how high schoolers associate a socially gendered referent, a person noun, to a foreign grammatically gendered noun in Norwegian, Polish, and Romanian. A questionnaire with 15 one-sentence scenarios in English was administered. Participants were split into groups by the gender of the referent in the scenario: Group One having female, Group Two having male, and Group Three having neutral. The participants were given the choice of a masculine, feminine, or neutral noun to fit the sentence. Group One frequently chose neutral nouns, Group Two frequently chose feminine nouns, and Group Three frequently chose either neutral or masculine nouns, results that were statistically significant. These findings suggest that genders and foreign gendered nouns can be associated, though the genders may not agree.

In today's society, gender stereotyping is still a serious issue, in which certain ideas, behaviors, and mental representations are associated with specific genders. According to certain findings, gendered language could play a role in this. There are three different categorizations of world languages, including grammatically gendered languages, naturally gendered languages, and gender-neutral languages (Prewitt-Freilino et al., 2012). Grammatically gendered languages, unlike the other categorizations, have gendered nouns for inanimate objects which can have a feminine, masculine, or neutral grammatical gender. However, research has indicated that countries that speak gendered languages have an increased Global Gender Gap (GGG) possibly due to the affected perceptions of the different genders (Prewitt-Freilino et al., 2012).

This discovery increased discussion on the negative effects of gendered vocabulary on society. Prior to that study, gendered nouns in Romance languages had already been studied by Sabourin et al. (2006), who focused on how people associated gendered animate or inanimate nouns and a certain human gender. They specifically tested speakers of German, English, and Romance languages on nouns in Dutch, their second language. The study's findings were that all participants, to some extent, could learn gender agreement, meaning the gender of the noun agreed with the human gender. The speakers of a genderless language, English, however, were not being able to learn gender agreement as well as the other language categories. Accordingly, the current body of literature supports that to some extent, gendered nouns create an unconscious association between the gender of the nouns and mental perception of that gender.

Literature Review

A History of Gendered Language

To give further context, historically, gendered language has been seen to exacerbate the effect of gender roles. Meyerowitz (2008) explored

gender representations over the years in different cultures and historical backgrounds. She concluded that there were specific historical trends that could explain gender inequality in today's society, suggesting that language was an important factor that established androcentric, or male-centered, hierarchies. Additionally, one paper noted that throughout history, English speakers' views were often shaped by gendered language, creating disparity and dichotomous perceptions, developing the conceptual framework regarding linguistic practices and theory behind sexism in language (Bigler & Leaper, 2015). Similar results were found in Italian and Spanish, supporting that grammatical gender can predict traditional gender roles in societies as native speakers of a grammatically gendered language are associated with low labor participation for women (Jakiela & Ozier, 2020).

Gender Stereotypes

As a result of established gender roles in the past, stereotypes of different genders have been deeply rooted, leading to implicit and explicit bias. Vigliocco (2005) analyzed the effect of grammatically gendered language on people's thoughts, behavior, and mental perceptions, specifically investigating Italian and German. Through a series of experiments having participants create word associations, Vigliocco observed a general trend of gender association with speech. Wasserman and Weseley (2009) also concentrated on how grammatically gendered languages can increase sexism in high school students. The study found that languages with grammatical gender can increase sexist beliefs, as participants were more frequently required to highlight the disparity when using different gendered vocabulary or pronouns. Moreover, Zakrisson et al. (2012) focused on how adults, industry employees, and high school students viewed sexism in the Swedish language and measured their attitudes towards the gender gap. The study found that sexist attitudes are associated with education and exacerbated by adolescence, with high school students having the highest rates, which may be important to consider when choosing a population sample.

Bilingualism/Second Language Learning

Furthermore, it generally agreed that the previous language learning of the participants may affect their perception of genders. One research study examined the effect of human referents, the facial expressions, with a specific gender on bilingual participants that knew French, which is a gendered language, or English, which is a naturally gendered language (Sato et al., 2013). By presenting subjects with stereotypical gendered nouns paired with male and female faces, the study found that switching the language of a noun can also switch the mental representation associated with that information. This shows that the multilingualism of the participant may be an important secondary factor to consider because the knowledge of different language systems could potentially affect the extent of bias subjects have towards different social genders.

Natural Language

In order to mitigate the effects of gendered language, a myriad of studies have proposed using neutral language instead in order to promote gender equality (Gygax et al., 2021). For example, Gabriel et al. (2018) measured the impact of different methods of neutralizing language in order to not allude to gender stereotypes. Previously, they found that masculine gendered languages, both inanimate and animate, often have generic and specific meanings, while feminine gendered language, both inanimate and animate, often refer to their visible appearance. Therefore, the authors proposed to use feminization in gendered language, but neutralization for non-gendered languages. This will allow more visibility for women in societies that speak gendered languages and remove the effect that gender could have on societies without grammatically gendered languages. On the other hand, research by Sarrasin et al. (2012) disagreed with the proposal of using neutralization, which found that there was an association between sexist beliefs and negative attitudes towards gender-neutral language (Gabriel et al., 2018). The researchers asserted, however, that gender-neutral vocabulary would still be beneficial towards removing sexist beliefs, in order to combat the

opposition. Overall, there is some controversy in the body of knowledge regarding the effect of neutral language, but may be another important consideration.

Research Gap

Gendered language has been proven to magnify sexist perceptions by assigning different ideas and nouns to certain genders, calling for the need to understand the specific effect of language structure on high school students. Previous studies with similar experiments have arguably introduced bias as confounding factors in their results, not considering the personalities and cultures of the subjects themselves which could affect the extent of gender bias they exhibit; thus, it is necessary to remove this bias by using foreign nouns with an unknown meaning that cannot be associated with a social gender. These factors will reveal data that will introduce a new depth to the existing body of knowledge. Therefore, the proposed research question is, "To what extent will high school students associate a certain human gender (female, male, neutral) to a grammatically gendered noun in a foreign European language (Norwegian, Romanian, Polish)?" The purpose of the research is to observe the effect of language structure on gender association by examining initial language learning and using foreign nouns that force participants to make associations to the grammatical gender. The participants will be high school students, as they are shown to frequently exhibit sexist beliefs (Zakrisson et al., 2012). Based on previous studies on gender agreement, it is hypothesized that participants will associate a foreign grammatically feminine noun with a female human referent, a foreign masculine noun with a male referent, and a foreign gender-neutral noun with a gender-neutral referent. Although the participants are given foreign gendered nouns, the study will discover whether they will be able to make assumptions based on suffix patterns even when they do not know the meaning of the noun, which will consequently lead them to correlate the same gendered noun to the same gendered referent. Overall, it is important to understand the effect of language structure on high school students in order to understand the history of and develop solutions for gender stereotyping.

Method

Participants

Subjects were students from a Delaware high school, selected for the study in a purposeful sampling procedure. This age group and organizational setting was used because of a study by Zakrission et al. (2012), which found that high school students, compared to other age groups and organizational settings, scored the highest in ambivalent sexism. The subjects were gained by sending an initial Google Forms survey asking for participation and then distributing the invention Google Forms survey through the emails provided. There were 16 people per experimental group, resulting in a total of 48 subjects in the study. A relatively small sample was reasonable because of the constraint that the participants could not be fluent in Norwegian, Polish, or Romanian, as well as other studies in the field having similar sample numbers. Participation was voluntary and all survey responses were anonymous.

Experimental Manipulation

A quantitative research approach and experimental method was used. In order to study the specific factors that contribute to sexism, the study tested how frequently participants would associate a certain gender, assumed by the human referent, to certain foreign gendered nouns in one-sentence scenarios. Thus, participants were split into three groups, each receiving different interventions. Group One received female human referents, Group Two received male human referents, and Group Three received gender-neutral human referents. The first two groups were necessary so that the effect of the gender of the human referent could be clearly evaluated, with Group One receiving common feminine names such as "Mary" or "Jennifer," and Group Two receiving common masculine names such as "Mark" or "Christopher." Group Three received common gender-neutral names, such as "Avery" or "Emerson," which acted as the neutral gender effect for the experiment. The names were taken from the most popular female, male, and unisex names in the United States from the Social Security Administration.

Data Collection

The data was obtained by distributing a questionnaire to the three experimental groups through Google Forms. The first part of the questionnaire addressed demographics, such as the participants' gender and multilingualism, which were secondary factors that could affect the study's results. Participants were asked to state the gender they most identified with and the other languages that they were additionally fluent in. The second part of the questionnaire consisted of 15 different one-sentence scenarios with a gendered human referent, differing depending on experimental group. Participants were also given three gendered noun choices. The questions were in English while the noun choices were Romanian for five of the questions, Polish for five of the questions, and Norwegian for five of the questions. The participants were asked to fill in the noun choice that they thought best fit the scenario, given one feminine, one masculine, and one gender-neutral noun per scenario.

Data Analysis

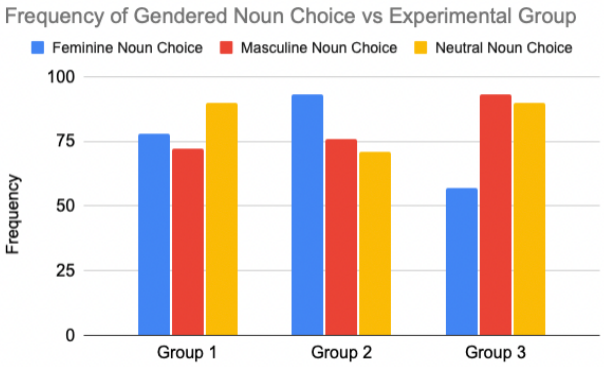
Basic frequency distribution data was gained from Google Forms in regard to how frequently each noun was chosen in the questionnaire. A two-way table was used with frequency as the column variable and foreign language (Romanian, Norwegian, Polish) as the row variable. In order to study the relationship between the gendered human referent and gendered noun choice, a chi square test of homogeneity was used with an alpha value of .05. Additionally, an ANOVA was used to see the differences between the three different languages used in each experimental questionnaire. For secondary variables, two chi-square tests of independence were run to understand how the multilingualism (monolingual, multilingual in European languages, or multilingual in European and non-European languages) and gender of the participant could affect the results. All ANOVA tests were also conducted with an alpha value of .05.

Results

Summary

The overall frequency of the noun choice per group was measured and recorded in the graph below.

Figure 1. ***Frequency of Gendered Noun Choice vs Experimental Group***



Pertaining to the quantitative data shown above in Figure 1, the key data displayed was that participants in Group One, with female referents, chose feminine nouns 32.6% of the time, masculine nouns 29.7% of the time, and neutral nouns 37.7% of the time. Group Two, with male referents, chose feminine nouns 38.8% of the time, masculine nouns 31.7% of the time, and neutral nouns 29.6% of the time. Group Three, with neutral referents, chose feminine nouns 23.8% of the time, masculine nouns 38.8% of the time, and neutral nouns 37.5% of the time. By basic association analysis, participants given female referents were shown to most likely choose neutral nouns, participants given male referents were shown to most likely choose feminine nouns, and participants given neutral referents were shown to most likely choose either masculine or neutral nouns. Moreover, a chi square test of homogeneity was performed to further study the relationship between the gendered human referent and gendered noun choice. The results were shown to be significant, $F(4, 720) = 15.10$, $p = .004$, meaning that the gender of the referent did have some impact on the participants' noun choice.

Differences Per Language

There were three different foreign European languages used in the study: Polish, Norwegian, and Romanian. A one-way analysis of variance (ANOVA) was performed for Group 1, Group 2, and Group 3, shown in Tables 1, 2 and 3 [Appendix A].As demonstrated, language had no effect on noun choice in Group One, $F(2, 6) = 0.01$, $p > .05$; Group Two, $F(2, 6) = 0.00$, $p > .05$; nor Group Three, $F(2, 6) = 0.00$, $p > .05$. Thus, the three different European languages chosen for the study did not have much effect on the participants' noun choice.

Secondary Factors

To investigate secondary factors, two chi square tests of independence were used to study the effect of identified gender and multilingualism of the participant. This data is shown below, in Tables 4 – 5 [Appendix A].

There were no significant results in regard to gender of the participant, $F(4, 709) = 2.43$, $p > .05$, which demonstrates that it did not have an impact on noun choice. There were also no significant results in regard to multilingualism, $F(4, 720) = 4.11$, $p > .05$, showing that it did not have an impact either. Thus, these factors were not confounding to the experiment.

Discussion

These results show, by basic frequency, that when participants were given a female human referent in their one-sentence scenarios, they were more likely to choose a foreign neutral noun. When given a male human referent, they were more likely to choose a foreign feminine noun. These results disagreed with the hypothesis, as a study by Fathi and Lowenstamm (2016), discussing the gendering of object nouns, observed the effect of gender assignment. This meant that female referents generally influenced choice of feminine nouns, and male referents generally influenced choice of masculine nouns, which is contrasting to this study. This could be due to the fact that the gendered nouns were in foreign European languages, meaning the nouns had language patterns that might have differed from the knowledge of the participant. For example, in Polish, masculine nouns usually end with a consonant, feminine nouns with -a or -i, and neutral nouns with -o or -e. In Romanian, masculine and neutral nouns usually end with -u and feminine nouns with -a. Norwegian does not always have a clear rule for gendered noun patterns. Therefore, participants may have been confused because of their limited knowledge of foreign gendered suffixes of those specific foreign languages. Languages more similar to English, such as Spanish and French, could have been used in the study instead. For Group Three, when given a neutral referent, participants were more likely to choose either a foreign neutral or masculine noun to fit the scenario. These results agreed with Gygax et al. (2021), who explored male-biased gender representation in languages, finding that ambiguous entities are often labeled as masculine. Thus, most likely, some participants chose masculine nouns because they assumed that the scenario was referring to a male entity, and neutral nouns because it followed gender agreement. By one-way ANOVA, the results also explain that the differing European languages used in the questionnaire did not have an effect on the participant's noun choice. In addition, the gender and multilingualism of the participants had a limiting effect on the results.

Significance and Implications of Results

Overall, results support that high school students were able to associate gendered referents to a gender noun in a foreign language, although the gender of the referent and gender of the noun did not match. This is significant because it shows how deeply rooted gender bias is within language structure, as subjects were able to make assumptions of the grammatical gender when they could not use the meaning of the noun to make an association to the gendered referent. This can be used to understand the basis of gender stereotyping today, reinforced by gendered language structure and unconsciously learned assumptions. This effectively filled the research gap of studying the association between gendered referents and gendered nouns when only considering structure. Furthermore, the results could be used for future policies on mitigating the effects of gendered language, as there should be a considerable focus on

grammatical gender forms. This can add to solutions proposed by Gabriel et al. (2018) on feminization and neutralization of different languages. While the results were unexpected, a possible explanation could be that the knowledge of language structure, such as gendered suffixes, could be secondary to social knowledge of the meaning of the nouns. Therefore, future studies could be recommended to focus more on social meaning rather than language structure.

Limitations and Further Research

In regard to the limitations of this study, data collection was done in an uncontrolled environment for the convenience of subjects. Accordingly, this could have affected the results since subjects may have taken differing efforts in answering the questionnaire. Moreover, while subjects were encouraged to not use an online dictionary to answer the questionnaire, they may have done so because their environment during participation was not regulated. In regard to subjects, since only age group and organizational setting was targeted, this led to a disproportionate number of females in sample size, so it was not very representative of the high school population. Finally, within the questionnaire, what is considered a gender-neutral name could be subjective or generational, which could have affected the results for Group Three.

This study, with its limitations and results, leaves various questions unanswered. Further research should be conducted on the effect of using foreign gendered nouns specifically. Future researchers can have a control group of English gendered nouns in order to understand how changing the foreign language can impact gender agreement. Researchers could also use a larger sample size than the 48 participants used in the study and differ the organizational setting to colleges, company settings, etc.

Conclusion

This study's objective was to focus solely on language structure rather than social meaning of gendered nouns, choosing foreign languages that participants were not fluent in. The method tested the extent in which high school students associated foreign nouns to gendered referents in one-sentence scenarios. After analyzing the results, it was found that the gendered noun choice of the subjects did have an effect on the noun choice. Generally, when given female referents, neutral nouns were associated, when given male referents, feminine nouns were associated, and when given neutral referents, either neutral or masculine nouns were associated. As these results are statistically significant, this shows that even though the subjects were not fluent in the three European languages, they were still able to make an association. In the field of study, this introduces a new perspective on gender agreement, as well as demonstrating how deeply rooted gender bias is in language. By researching the created associations between referents and foreign gendered nouns, specifically focusing on language structure, this can help understand how gendered language can continue to reinforce gender stereotyping today.

References

Bigler, R. S., & Leaper, C. (2015). Gendered language: Psychological principles, evolving practices, and inclusive policies. *Policy Insights from the Behavioral and Brain Sciences*, *2*(1), 187 – 194. https://doi.org/10.1177/2372732215600452

Fathi, R., & Lowenstamm, J. (2016). The gender assignment pattern of French nouns: Selection and allomorphy. *Morphology*, *26*, 477 – 509. https://doi.org/10.1007/s11525-016-9287-2

Gabriel, U., Gygax, P. M., & Kuhn, E. A. (2018). Neutralising linguistic sexism: Promising but cumbersome? *Group Processes & Intergroup Relations*, *21*(5), 844 – 858. https://doi.org/10.1177/1368430218771742

Gygax, P., Sato, S., Öttl, A., & Gabriel, U. (2021). The masculine form in grammatically gendered languages and its multiple interpretations: A challenge for our cognitive system. *Language Sciences*, *83*. https://doi.org/10.1016/j.langsci.2020.101328

Irvine, J. & Gal, S. (2000). Language Ideology and Linguistic Differentiation. In P. V. Kroskrity (Ed.), *Regimes of language:*

Ideologies, polities, and identities (pp. 35 – 83). School for Advanced Research Press.

Jakiela, P., & Ozier, O. (2020). Discussion paper series: Gendered language. https://docs.iza.org/dp13126.pdf

Meyerowitz, J. (2008). A history of "gender." *The American Historical Review*, *113*(5), 1346 – 1356. https://www.jstor.org/stable/30223445

Prewitt-Freilino, J. L., Caswell, T. A., & Laakso, E. K. (2012). The gendering of language: A comparison of gender equality in countries with gendered, natural gender, and genderless languages. *Sex Roles*, *66*, 268 – 281. https://doi.org/10.1007/s11199-011-0083-5

Sabourin, L., Stowe, L. A., & de Haan, G. J. (2006). Transfer effects in learning a second language grammatical gender system. *Second Language Research*, *22*(1), 1 – 29. https://doi.org/10.1191/0267658306sr259oa

Sarrasin, O., Gabriel, U., & Gygax, P. (2012). Sexism and attitudes toward gender-neutral language: The case of English, French, and German. *Swiss Journal of Psychology*, *71*(3), 113 – 124. https://doi.org/10.1024/1421-0185/a000078

Sato, S., Gygax, P. M., & Gabriel, U. (2016). Gauging the impact of gender grammaticization in different languages: Application of a linguistic-visual paradigm. *Frontiers in Psychology*, *7*. https://doi.org/10.3389/fpsyg.2016.00140

Vigliocco, G., Vinson, D. P., Paganelli, F., & Dworzynski, K. (2005). Grammatical gender effects on cognition: Implications for language learning and language use. *Journal of Experimental Psychology: General*, *134*(4), 501 – 520. https://doi.org/10.1037/0096-3445.134.4.501

Wasserman, B. D., & Weseley, A. J. (2009). ¿Qué? Quoi? Do languages with grammatical gender promote sexist attitudes? *Sex Roles*, *61*, 634 – 643. https://doi.org/10.1007/s11199-009-9696-3

Zakrisson, I., Anderzén, M., Lenell, F., & Sandelin, H. (2012). Ambivalent sexism: A tool for understanding and improving gender relations in organizations: Ambivalent sexism. *Scandinavian Journal of Psychology*, *53*(1), 64 – 70. https://doi.org/10.1111/j.1467-9450.2011.00900.x