Female truck drivers and male babysitters? Interactions between gender stereotypes and grammatical gender in Spanish and Italian: a psycholinguistic proposal*

Gabriela Mariel Zunino (Buenos Aires), Gloria Gagliardi (Bologna), Noelia Ayelén Stetie (Buenos Aires) and Emanuele Miola (Bologna)

Abstract

Within studies on the complex relationship between language and gender, there are proposals that indicate an effect of stereotypical mental representations on language processing. Likewise, other proposals indicate that morphological gender marking, typical of languages with grammatical gender, can also bias interpretation. Within the *MultiLingualGender* project, we are developing a broad research on language and gender in Romance languages. In this paper we present two preliminary studies that also function as normative stage for future psycholinguistic tasks. On the one hand, we developed a study of Gender association judgments, with the objective of verifying the association of role names (professions) with gender stereotypes, but without explicitly involving the lexical form (Study 1). On the other hand, we conducted a study of Acceptability judgments of NP, to analyze the degree of acceptability of NPs that explicitly contained the lexical form (Study 2). In both cases, these are tasks that involve conscious and open judgments. Our results show that there are differences by linguistic community, but there are also some common patterns: for example, the acceptability and possibility of representing men in roles typically associated with women is greater than vice versa. Furthermore, data show that in languages with grammatical gender, the interaction between stereotypicality biases and grammatical gender marking plays a crucial role in understanding the relationship between gender and language in its complexity.

1 Introduction

1.1 Gender morphology

The relation between gender and language is complex and has been studied from different perspectives, from grammar to pragmatics and discourse, including sociolinguistics and psycholinguistics approaches. Gender morphology has been one of the axis of analysis: taxonomies describing gender marking in languages vary, but there are certain general categories with broad consensus (cf. Corbett 1991; Gygax et al. 2019; Hellinger/Bußmann 2001). For example, Gygax et al. (2019) distinguish five types of languages: grammatical gender languages, natural

* This work has been funded by the European Union through the *MultiLingualGender* project (MSCA Staff Exchanges, Horizon Europe, Grant Agreement No. 101182959).

gender languages, languages with a combination of grammatical and natural gender, genderless languages with some traces of grammatical gender, and genderless languages. Within the first group, where languages such as Spanish and Italian are found, gender controls grammatical agreement and nouns referring to both animate and inanimate entities have assigned gender. In these languages, gender is usually described as operating in both lexical and grammatical dimensions. It functions as a lexical classifier for nouns: all nouns must have assigned gender (in a binary paradigm for Spanish and Italian). For the grammatical dimension, both Spanish and Italian have sometimes been analyzed as having gender marked through derivational morphology, since it may be indicated with what seems to be a derivational affix, at least from the phonological point of view (*barón* > *baronesa*; *dottore* > *dottoressa*). Furthermore, while it is widely accepted that gender in Italian is not a nominal inflectional category (cf. Thornton 2001; Iacobini 2011), for Spanish there are debates about whether gender can be considered as inflectional in some cases. The scene seems to be complex, and gender morphology in Spanish shows characteristics of both. Especially for some animate nouns that form heteronym pairs from the same root (the vast majority of heteronymous pairs in Spanish), gender can be considered as inflectional (*abogad-o/a*; *maestr-o/a*). (cf. Fábregas 2024).

1.2 Linguistic forms and mental representations during gender processing

Within the studies of human cognition that investigate language processing, two phenomena stand out. The first addresses the potential generic interpretation bias in languages with obligatory gender markings and binary gender paradigms. One of the phenomena more studied in this vein is the potential gender bias imposed by the generic masculine in role names. In Romance languages such as Spanish, Italian and Portuguese, the masculine gender can also function as a generic, that is, to refer to entities with different genders (cf. Ambadiang 1999; Menegotto 2020; Sabatini 1987; Serianni 1991). The univocal reference as a generic proposed by traditional grammars has been questioned from sociolinguistic and pragmatic approaches. They suggest that the generic masculine imposes an initial interpretation bias, which was found in different languages and in offline and online processing (cf. Cacciari/Padovani 2007; Garnham Oakhill/Reynolds 2002; Gygax et al. 2008; Stetie/Zunino 2022; Zanoli 2022).

The second focuses on a more specific point of the same problem: how reference is constructed through the use of the generic masculine in role names associated with different gender stereotypes. As part of our beliefs and prior world knowledge, gender stereotypes influence language production, language comprehension and even communicative interactions (cf. Bojarska 2013; Carreiras et al. 1996; Casado et al. 2021; Duffy/Keir 2004; Horvath et al. 2016; Lewis/Lupyan 2020; Lindvall-Östling/Deutschmann/Steinvall 2020; Menegatti/Rubini 2017; Sato/Athanasopoulos 2018; Stetie/ Zunino 2022, 2023; Zanoli 2022; Zunino/Stetie 2022).

The discussion usually revolves around the fact that the interpretation and construction of reference in these cases is not as arbitrary as some traditional grammatical studies assume (cf. Ambadiang 1999; Menegotto 2020). This problem not only extends to nouns referring to people, but also projects representations associated with sex-gender identities to other words referring to non-human entities (cf. Boroditsky/Schmidt/Phillips 2003; Flaherty 2001; Konishi 1993; Saalbach/Imai/Schalk 2012; Sera et al. 2002; Vigliocco et al. 2005).

1.3 Differences by (linguistic) community

Much has been said about the potential differences that each language projects on their relation with social gender and stereotypes (cf. Hellinger/Bußmann 2001; Motschenbacher 2014). However, not so much has been studied about the potential differences between varieties of the same language (cf. Stetie/Martínez Rebolledo/Zunino 2023; Zunino et al. 2025) or between different grammatical languages, as Romance languages.

Cognitive theories of gender have been proven in different cultures: there are gender stereotypes susceptible to be defined as pan-cultural (cf. Gibbons 2000). Although stereotypes seem to be defined by stable and systematic factors, they also show variability between different communities and even between individuals from the same community (cf. Cuddy et al. 2015; Gelman 2004; Gibbons 2000; Lindvall-Östling/Deutschmann/Steinvall 2020; Menegatti/Rubini 2017; Molinaro/Su/Carreiras 2016; Zemore/Fiske/Kim 2000).

Regarding the link between cultural and linguistic differences associated with gender (and the relationship between grammatical and social gender), there are classic studies about the relations between language and the construction, perception and attitudes around gender stereotypes at a cognitive level (cf. Flaherty 2001; Lewis/Lupyan 2020; Prewitt-Freilino/Caswell/Laakso 2012).

In the case of Spanish and Italian, even when they are two Romance languages, we know that there are documented linguistic differences regarding grammatical gender (see 1.1.). However, since the formation of gender stereotypes and their relationship with languages also involves social and cultural aspects, it is expected that extralinguistic elements will affect perceptions, attitudes and processing of pieces of language that involve gender information.

Although we acknowledge that gender indices may not be representative or rigorous enough to verify subtle cultural differences, given that we do not have previous studies that analyze specific cultural differences around gender between the communities studied here, we can use two global indices to verify that, indeed, Italy and Argentina show different patterns in relation to gender as a social dimension. First, we considered the Gender Inequality Index (GII)[1] belonging to the United Nations Development Programme (2024) as a descriptive basis of potential differences between the communities of Argentina and Italy. Last data available is for 2022: Argentina shows an GII of 0,292 (-0,04 respect to 2021); Italy exhibits an GII of 0,057 (+0,001 respect to 2021). However, the World Economic Forum's (2024) *Global Gender Gap Index*[2] offers more up-to-date data. For 2024, Argentina ranked 32nd (improving its place in the ranking compared to 2023), while Italy showed a worse gender gap and ranked 87th (which shows an increase in the gap compared to 2023). Beyond each specific index, both show dynamic patterns in which Argentina improves its gender gap while Italy shows the opposite direction.

Within this general scene, we justify this comparative study in two main ways. On the one hand, we are interested in analyzing the effects of linguistic elements analyzed from an interlinguistic

[1] GII is a composite metric of gender inequality considering three dimensions: reproductive health, empowerment, and the labour market. A low GII value indicates low inequality between women and men, while a higher value indicates higher inequality.

[2] It was first introduced in 2006 to measure the magnitude of the gap between women and men in terms of health, education, economic and political indicators.

perspective. On the other hand, we investigate the potential effects linked to socio-cultural differences. If, indeed, gender marking interacts with other non-linguistic factors, differences that are not strictly due to linguistic variation may arise between communities.

2 The present study

Within the *MultiLingualGender Project*, we are developing a broad research on language and gender in Romance languages. One of the main objectives of this study was to run a normative study in both languages to select the adequate items for each one in order to design future psycholinguistics studies to analyze online sentence processing. Furthermore, these studies might be considered to comparatively analyze some axes to better understand the complex relation between gender and language.

In this specific study, we started from the following general hypothesis: incongruence between semantic bias and gender morphology has an impact during processing in both Spanish and Italian. In particular, we claim that both masculine and feminine stereotypical bias will generate an obstacle during processing in the condition with incongruent grammatical gender (e. g., *camionera*, 'truck driver'-F; *niñero*, 'babysitter'-M).

To reach an adequate comparative scene between the two languages, we first developed two exploratory studies with two main objectives: a. comparative study of perceptions and attitudes in the two communities; b. normative study for selecting items to be used in a grammatical maze experiment, in order to analyze on line sentence processing in the two languages.

On the one hand, we developed a study of Gender association judgments, with the objective of verifying the association of role names (professions) with gender stereotypes, but without explicitly involving the lexical form (see Study 1). On the other hand, we conducted a study of Acceptability judgments of NP, to analyze the degree of acceptability of NPs that explicitly contained the lexical form that could then be used in other online processing tasks (see Study 2). In both cases, these are tasks that involve conscious and open judgments and are not considered good indicators of online processing or measures of subliminal processing.

Finally, it is worth highlighting that, as far as we know, systematic multilingual comparative work about potential cultural differences between different Romance languages communities is scarce, and usually focus on bilinguals or traductology studies (cf. Alfano/Voghera 2023; Paolieri et al. 2010; Paolieri et al. 2018). Developing crosslinguistic studies among different grammatical gender languages is particularly interesting to analyze with more rigorous detail the complex relations between cultural and linguistics factors conditioning gender bias during language production and comprehension. This perspective also focuses on linguistic variation that tends to remain poorly observed (cf. Fábregas 2024; Loporcaro 2018; Stetie/Martínez Rebolledo/Zunino 2023; Zunino et al. 2025).

3 Study 1

3.1 Method

3.1.1 Participants

The final Argentinian sample consisted of 136 participants (age: M = 35.8, SD = 12.5, range = 18–73; 90 women, 40 men, 4 non-binary, 2 that didn't answer about gender identification). The Argentinian sample was collected in the metropolitan area of Buenos Aires and the province of Buenos Aires. The final Italian sample consisted of 142 participants (age: M = 34.5, SD = 18.5, range = 18–82; 93 women, 47 men, 2 non-binary). The Italian sample was collected mostly in the following regions: Tuscany, Lombardy and Emilia-Romania.

Participation was voluntary and unpaid.

It is possible to observe that the two samples are comparable in terms of age and gender identity distribution, so they can function in an equivalent way for data analysis. Furthermore, it is possible to note that these are robust samples for studies in the area of experimental linguistics, both in terms of sample size and qualitative characteristics (cf. Berghoff/Bylund 2025; Buchstaller/Khattab 2013; Vasishth 2023). We especially sought to avoid WEIRD samples (cf. Henrich et al. 2010) whose biases make it difficult to generalize the results.

3.1.2 Materials and design

After a thorough comparison between the two languages, we selected 35 role nouns. All were classified considering three *a priori* stereotype bias: female, male, neutral. The *a priori* categorization does not always coincide in the two communities. Regarding gender morphology, even if in this task we did not manipulate it, each item had to be able to form a heteronym pair through explicit gender marking. In (1), (2) and (3) we present examples for each language:

(1) male bias: *carnicero*/*a* in Spanish, *macellaio*/*a* in Italian ('butcher')
(2) female bias: *enfermero/a* in Spanish, *infermiere/a* in Italian ('nurse')
(3) neutral bias: *verdulero/a* in Spanish, *fruttivendolo/a* in Italian ('greengrocer')

For each of the items one eliciting phrase was designed to test participants' gender association of each role/profession. Table 1 shows examples for each type of target in the two languages.

Target item	A priori stereotype	Eliciting item Spanish	Eliciting item Italian
Carnicero/ Macellaio	male	*Entre las personas que atienden carnicerías, dirías que hay…*	*Tra le persone che lavorano nelle macellerie, diresti che ci sono...*
Enfermer/ Infermiere	female	*Entre las personas que ejercen la enfermería, dirías que hay…*	*Tra le persone che assistono i pazienti in ospedale e sono laureate in infermieristica, diresti che ci sono...*
Verdulero/ Fruttivendolo	neutral	*Entre las personas que venden frutas y verduras, dirías que hay...*	*Tra le persone che vendono frutta e verdura, diresti che ci sono...*

Table 1: Examples of eliciting items in Spanish and Italian

3.1.3 Procedure

Participants judged the distribution of women and men within specific roles or professions by choosing one of 5 points displayed as a Likert scale: all men, more men than women, same quantity of men and women, more women than men, all women. In half of the items, the scale was presented in reverse order. The task was administered online with a between participant design, so no participant saw the same item twice. First, participants had to provide informed consent to access the task and supply their sociodemographic characteristics. They were asked to indicate their age, gender identity, highest level of studies achieved, first language, other languages, nationality, state/province and city of residence. After general instructions, 4 practice items were presented.

The instructions for the task were as followed:

"We are interested in you telling us if it seems to you that among the people who practice a certain profession or occupation there are more women, more men or if there is a similar number of men and women."

This study specifically does not present the lexical form linked to each role and occupation, to avoid biases linked to the morphological marking in which that role name appeared and to eliminate potential effects of lexical frequency.

The task was conducted using PCIbex (cf. Zehr/Schwarz 2018). The order of the options changed randomly to prevent automatic responses due to systematic display. The task could be performed on any electronic device with Internet connection. Participants were recruited through social media, and through seminars and lectures, to ensure a representative sample. We specifically aimed for an equilibrated distribution of gender identities. Completing the task took between 5 and 10 minutes depending on the participant.

3.2 Results

For data analysis, we considered one dependent variable: selected response. We analyzed data with R and R Studio version 4.3.1. (R Core Team 2023). We used the tidyverse package (cf. Wickham et al. 2019).

First of all, for each item we selected and regrouped responses as follows: "all men" and "more men than women" were considered as male responses; "all women" and "more women than men" were considered as female responses; "same quantity of men than women" were considered neutral responses. This was a methodological decision based on two elements: (a) no central tendency effects were exhibited, that is, most of the responses took the extreme options; (b) since this study also functioned as a normative one, we needed to categorize each role name into one of two classes: associated with women and associated with men.

If male responses reached 51% or more for one item, this item was classified as male biased item; if female responses reached 51% or more for one item, this was classified as female biased item: everything else was classified as neutral. We had problems with Italian, because we just obtained 4 female items with this criterion, and we needed 10 to form a complete experimental condition. The decision was to organize one group of male items (with the criterion previously described) and one group of items without male bias, were we considered all strictly female

biased items plus items that showed more than 25% of female responses and reached 80% of the total responses with neutral responses (this means that for those items there were less than 20% male responses). Figure 1 shows the general responses for each language.

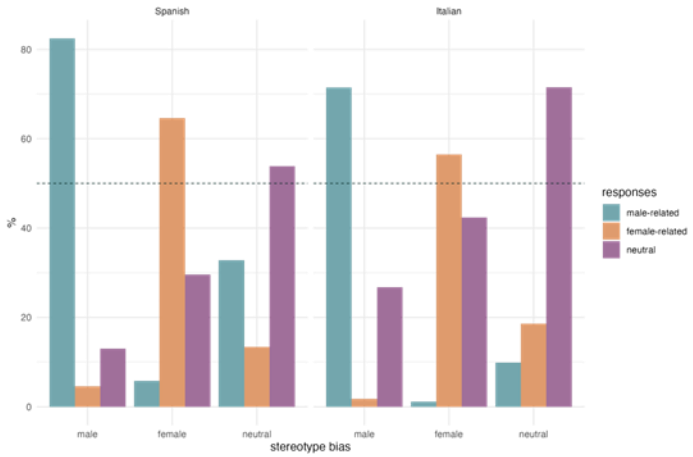

Figure 1: General responses by stereotypical a priori bias for Spanish and Italian

For statistical analysis, we performed a Chi square test in order to compare judgments between the two communities for each response. For male responses ($X^2(1, N = 1291) = 23{,}183$, $p < 0.001$), we found that Italy has less clearly male judgements than Argentina, due to the fact that for items *a priori* classified as male-biased the judgement preferred was, in fact, neutral. For female responses ($X^2(1, N = 704) = 35{,}46$, $p < 0.001$), Italy also showed less clearly female responses than Argentina, also due to the greater amount of neutral judgements for items *a priori* classified as female-biased. These results also generate a statistically significant difference on neutral responses between the two communities ($X^2(1, N = 1014) = 23{,}882$, $p < 0.001$): we can say that Italy showed a tendency to neutralization, that, in fact, was much more acute for female-biased items than for male-biased items. For all Chi square tests, all comparisons showed a low effect size (less than 0.30), with female responses with the biggest one (Cohen $w = 0.224$)[3].

4 Study 2

4.1 Method

4.1.1 Participants

Participants were the same that performed Study 1.

4.1.2 Material and design

The selection of items was the same as the one described for Study 1, but in this case the task implied acceptability judgement over NPs containing the selected role names. We presented

[3] Since this task functions as a normative study to verify the use of certain items in each language, the size of the effect is not decisive. The differences found are interesting to continue investigating potential interlinguistic differences in future studies, but the results of these studies allow us to adequately define which items can be used in each language for future psycholinguistic studies.

each role in a simple plural NP (Det+N) presented in two conditions regarding gender morphology: masculine and feminine.[4] So, in this case we added an independent variable, resulting in a 3x2 factorial design: stereotype bias (male, female, neutral) and gender morphology (feminine, masculine). In (4), (5) and (6) we present examples for each language:

(4) male bias: *los carniceros/las carniceras* in Spanish, *i macellai/le macellaie* in Italian ('the butchers')
(5) female bias: *los enfermeros/las enfermeras* in Spanish, *gli infermieri/le infermiere* in Italian ('the nurses')
(6) neutral bias: *los verduleros/las verduleras* in Spanish, *i fruttivendoli/le fruttivendole* in Italian ('the greengrocers')

All items were presented in three counterbalanced lists, in a way in which no participant saw each item more than once and every participant was exposed to all conditions.

4.1.3 Procedure

Participants judged the acceptability of NPs by selecting one point in a 5 point Likert scale: totally acceptable, pretty acceptable, acceptable, slightly acceptable, not acceptable. As in Study 1, in half of the items, the scale was presented in reverse order. The task was administered online with a between participant design. The same informed consent and sociodemographic questions described in Study 1 were presented in this case. After general instructions, 4 practice items were presented.

The instructions for the task were as followed:

"Now we are going to ask you to answer very simple questions. It's about telling us if a phrase sounds familiar and acceptable to you or very strange. They are phrases that can be used to refer to groups of people who practice a certain profession or occupation."

The task was conducted using PCIbex (cf. Zehr/Schwarz 2018). The order of the options changed randomly to avoid automatic responses due to systematic display. The task could be performed on any electronic device with Internet connection. Participants were recruited through social media, seminars and lectures. The same restrictions as in Study 1 were considered to have a representative sample.

4.2 Results

For data analysis, we considered one dependent variable (selected response) and analyzed it specially conditioned by gender morphology in the NP (masculine or feminine) as an independent variable. We analyzed data with R and R Studio version 4.3.1. (cf. R Core Team 2023). We used the tidyverse package (cf. Wickham et al. 2019). Figure 2 presents general responses for acceptability judgments.

[4] As a prior normative study, one of the objectives was to evaluate the acceptability of the lexical form and its combination with a determiner within a noun phrase. Given that there is no prior normative data for these languages and that we cannot rely on lexical frequency data, it was necessary to carry out this acceptability test for isolated NP to later be able to use these phrases in psycholinguistic sentence comprehension tasks.

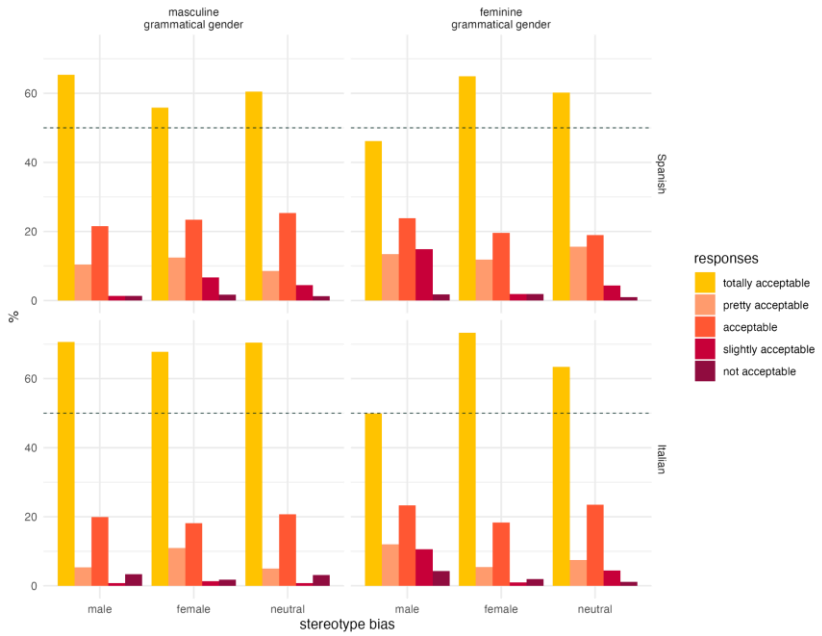

Figure 2: Acceptability judgements by stereotype a priori bias for Spanish and Italian

Globally, in Figure 2 can be observed that for both Italian and Spanish, most NPs were judged as "totally acceptable". To analyze in detail potential differences between communities or between stereotypicality conditions specifically for those responses ("totally acceptable"), we performed Chi square tests that showed no statistically significant difference for male and female-biased items but a different pattern for neutral items. For neutral items, we found: (a) a statistically significant difference between Argentina and Italy for neutral items with masculine grammatical gender (*los verduleros* vs. *i fruttivendoli*) ($X^2(1, N = 460) = 13{,}226$, $p < 0.001$), where masculine in Italian was were judged more acceptable than the same condition in Spanish; and (b) a statistically significant difference between masculine and feminine grammatical gender for neutral items (*i fruttivendoli vs. le fruttivendole*) in Italy ($X^2(1, N = 439) = 22{,}326$, $p < 0.001$), where neutral masculine seemed more acceptable than neutral feminine. For all Chi square tests, all comparisons showed a low effect size (less than 0.30), with neutrals in Italy with the biggest one (Cohen $w = 0.225$).

To conduct a more detailed statistical analysis, we narrowed down the sample by removing the items with neutral bias (that were not our focus) and collapsing the responses into two broad categories: acceptable and not acceptable (see Figure 3). This allowed us to treat the responses as a dichotomous variable and apply Generalized Linear Mixed Models (cf. Winter 2019). We coded the levels of fixed factors as scaled sum contrasts (cf. Schad et al. 2020). For both samples, the models used for the analysis included stereotype bias and grammatical gender as nested fixed effects and participants and items as random effects: glmer(responses ~ stereotype bias/ grammatical gender + (1 | participants) + (1 | items). For the Spanish sample, we found a main effect of stereotype bias ($\beta = 1.6565$, $SE = 0.5023$, $z = 3.298$, $p = 0.001$) and a grammatical gender effect both nested to male stereotype ($\beta = 2.7354$, $SE = 0.4644$, $z = 5.890$, $p < 0.0001$) and female stereotype ($\beta = -1.2945$, $SE = 0.5246$, $z = -2.468$, $p = 0.0135$). For the Italian sample, however, there was no main effect of stereotype bias ($\beta = -0.4810$, $SE = 0.5808$, $z = -0.828$, $p = 0.4076$); we did find a grammatical gender effect nested to male stereotype ($\beta = 1.6566$, SE

= 0.4287, z = 3.864, p = 0.0001), but no effect of grammatical gender nested to female stereotype (β = -0.1475, SE = 0.6824, z = -0.216, p = 0.8288).

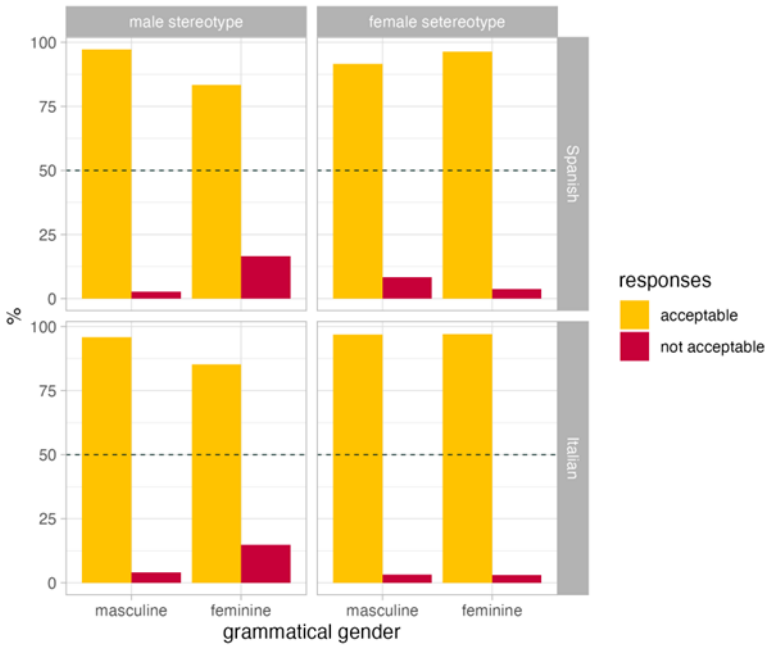

Figure 3: Acceptability judgements by stereotype a priori bias for Spanish and Italian, without neutral bias

5 General discussion

The first point to highlight is that, taken together, both studies allow for the selection of appropriate items for each language in order to develop future psycholinguistic experiments. We were able to select a minimum number of items with each stereotypicality bias for each language and we corroborated that all lexical forms, with both feminine and masculine morphological marking, are acceptable and can be used to analyze sentence processing without this aspect posing a significant obstacle. In this sense, the main objective of these two studies was successfully met. Additionally, we confirmed that these two studies can be used in combination for similar tasks that require the implementation of normative studies, as they offer the dual advantage of testing both the gender representation associated with a particular profession or occupation and the acceptability of the specific lexical form, allowing these two variables to be assessed independently.

For Study 1, we would like to focus on the differences between the two linguistic communities.

Although no more than four items were judged as clearly female in Italy, a greater tendency to "neutralization" is observed compared to Argentina: more items are judged as equally associated with both men and women. However, this "neutralization" is not uniform: roles typically associated with women were judged as more neutral than those traditionally associated with men. The latter continue to receive predominantly masculine judgments, reinforcing the male

stereotype.[5] By "neutralization" then we understand a bias that could also be described as "non-feminine". While items associated with men continue to elicit very strong judgments towards the masculine bias, those associated with women are more often judged as mixed rather than distinctly feminine. This is why we consider that masculine gender stereotypes exhibit greater strength and consistency than stereotypically feminine roles. The fact that only 4 roles in the Italian sample were consistently associated with women further supports this interpretation. We could consider that this pattern is in line with the World Economic Forum's (2024) *Global Gender Gap Index*: it would be an especially interesting point for future research from a social psychology perspective.

This result is also in line with previous studies (cf. Richy/Burnett 2019; Siyanova-Chanturia et al. 2015) that indicate greater ease in accepting or representing men in typically female roles compared to women in typically masculine roles.

Argentina, for its part, showed a pattern of judgments more in line with the stereotypicality classification made *a priori*, although it also shows greater power and consistency of the items with male bias: they are associated with men with higher scores and more systematically (with less ambivalence). Items associated with women or considered neutral show patterns of responses that we could consider more fragile or less robust.

For Study 2, it is worth highlighting that all NPs were judged as acceptable. The incongruence between stereotypicality bias and grammatical gender marking (i. e. *los enfermeros* – 'the nurses' – or *las camioneras* – 'the truck drivers') is not disruptive enough to break the acceptability in either language.

It is true, however, that we also found differences depending on the language/community in the levels of acceptability, which can also be linked to what was discussed for Study 1.

Incongruent items with female stereotype + masculine grammatical gender (i. e. *enfermeros*) are more acceptable for Italian than for Argentine participants. The same occurs with inverse incongruence: male stereotype + feminine grammatical gender (i. e. *camioneras*). However, the most relevant thing in this case is that in neither of the two communities the "totally acceptable" judgments exceed 50%: it is the only condition that shows this characteristic.

These data are also linked to the results of previous studies (cf. Siyanova-Chanturia et al. 2015) that show, even in online processes not mediated by conscious decisions or judgments, that the incongruency male stereotype + feminine grammatical gender (that is, women with typically male roles, as in the case of *las camioneras*) is more disruptive than the inverse.

These data can also be interpreted in line with what was discussed and proposed by Stetie/ Zunino (2024) and Zunino et al. (2025) for different Spanish-speaking communities. In parallel with the traditional notion of "marked gender" in grammatical gendered languages, the authors proposed the concept of "marked stereotype". The general pattern consistently exhibits an asymmetrical effect of the incongruence between gender stereotype and grammatical gender marking: the processing cost is always higher when a masculine stereotype is paired with

[5] This effect cannot be analyzed as a design effect, since: a) it is only observed in the Italian sample; b) it appears only for items initially considered to have a female bias, that is, it is not a transversal trend but one specifically linked to the roles most commonly associated with women.

feminine grammatical marking than vice versa. The authors have discussed this point in different studies, both when nouns refer to inanimate objects and to role names. The masculine form, even as a social stereotype, seems to be functioning as the default, generating more consistent and systematic associations. In contrast, the feminine form shows a more variable pattern, reflecting the greater difficulty in representing women in roles traditionally associated with men.

Globally, we can conclude that:

1) tasks involving conscious processes (beliefs, cultural factors, and even linguistic ideologies) reveal differences between the two languages/communities.
2) both communities exhibit common patterns consistent with previous studies: the acceptability and possibility of representing men in roles typically associated with women is greater than vice versa.
3) in languages with grammatical gender, the interaction between stereotypicality biases and grammatical gender marking plays a crucial role in understanding the relationship between gender and language in its complexity.

References

Alfano, Iolanda/Voghera, Maria (2023): "Le scelte delle donne nei nomi di professione in italiano e spagnolo" In: Crivellari, Daniele/Nuzzo, Giulia/Ripa, Valentina (eds.): *El trabajo me pone alas. Scritti in omaggio a Rosa Maria Grillo*. Salerno, Officine Pindariche: 241–260.

Ambadiang, Teophile. (1999): "La flexión nominal: género y número." In: Ignacio Bosque/Violeta Demonte (eds.): *Gramática Descriptiva de la Lengua Española*. Madrid, Espasa Calpe: 4843–4914

Berghoff, Robin/Bylund, Emanuel (2025): "Diversity in research on the psychology of language: A large-scale examination of sampling bias." *Cognition* 256: 106043.

Bojarska, Katarzyna (2013): "Responding to lexical stimuli with gender associations: a cognitive-cultural model." *Journal of Language and Social Psychology* 32/1: 46–61.

Boroditsky, Lera/Schmidt, Lauren/Phillips, Webb (2003): "Sex, Syntax and Semantics." In: Gentner, Dedre/Goldin-Meadow, Susan (eds.): *Language in mind: Advances in the studies of language and cognition*. Cambridge, The MIT Press: 61–79

Buchstaller, Isabelle/Khattab, Ghada (2013): "Population samples." In: Podesva, Robert J./ Sharma, Devjani (eds.): *Research Methods in Linguistics*. Cambridge, Cambridge University Press: 74–95.

Cacciari, Cristina/Padovani, Roberto (2007): "Further evidence of gender stereotype priming in language: Semantic facilitation and inhibition in Italian role nouns." *Applied Psycholinguistics* 28/2: 277–293.

Carreiras, Manuel et al. (1996): "The use of stereotypical gender information in constructing a mental model: Evidence from English and Spanish." *The Quarterly Journal of Experimental Psychology Section A* 49/3: 639–663.

Casado, Alba/Palma, Alfonso/Paolieri, Daniela (2021): "The scope of grammatical gender in Spanish: Transference to the conceptual level." *Acta Psychologica* 218: 103361. doi.org/10.1016/j.actpsy.2021.103361.

Corbett, Greville (1991): *Gender*. Cambridge: Cambridge University Press.

Duffy, Susan/Keir, Jessica (2004): "Violating stereotypes: Eye movements and comprehension processes when text conflicts with world knowledge." *Memory & Cognition* 32/4: 551–559. doi.org/10.3758/BF03195846.

Fábregas, Antonio (2024): *The Fined-grained Structure of the Lexical Area. Gender, appreciatives, and nominal suffixes in Spanish*. Amsterdam: Benjamins.

Flaherty, Mary (2001): "How a language gender system creeps into perception." *Cross-cultural Psychology* 32/1: 18–31.

Garnham, Alan/Oakhill, Jane/Reynolds, David (2002): "Are inferences from stereotyped role names to characters' gender made elaboratively?" *Memory & Cognition* 303): 439–446. doi.org/10.3758/BF03194944

Gibbons, Judith (2000): "Gender Development in Cross-Cultural Perspective." In: Eckes, Thomas/Trautner, Hans M. (eds.): *The Developmental Social Psychology of Gender*. New York, Psychology Press: 403-–30.

Gygax, Pascal et al. (2008): "Generically intended, but specifically interpreted: When beauticians, musicians, and mechanics are all men." *Language and Cognitive Processes* 23/3: 464–485.

Gygax, Pasca et al. (2019): "A language index of grammatical gender dimensions to study the impact of grammatical gender on the way we perceive women and men." *Frontiers in Psychology* 10: 1604. doi.org/10.3389/fpsyg.2019.01604.

Hellinger, Marlis/Bußmann, Hadumod (2001): *Gender Across Languages: The Linguistic Representation of Women and Men.* Vol 1. Philadelphia: Benjamins.

Henrich, Joseph/Heine, Steven/Norenzayan, Ara. (2010): "The weirdest people in the world?" *Behavioural and Brain Sciences* 33/2–3: 61–83. doi.org/10.1017/S0140525X0999152X.

Horvath, Lisa et al. (2016): "Does gender-fair language pay off? The social perception of professions from a cross-linguistic perspective." *Frontiers in Psychology* 6. doi.org/10.3389/fpsyg.2015.02018.

Iacobini, Claudio (2011): "Morfologia." In: Simone, Raffaele (ed.): *Enciclopedia dell'italiano*. Roma, Istituto dell'Enciclopedia Italiana: 921–929.

Lewis, Molly/Lupyan, Gary (2020): "Gender stereotypes are reflected in the distributional structure of 25 languages." *Nature Human Behaviour 4/*10: 1021–1028.

Lindvall-Östling, Mattias/Deutschmann, Mats/Steinvall, Anders (2020): "An exploratory study on linguistic gender stereotypes and their effects on perception." *Open Linguistics* 6/1: 567–583. doi.org/10.1515/opli-2020-0033.

Loporcaro, Michele (2018): *Gender from Latin to Romance: History, Geography, Typology*. Oxford: OUP.

Menegatti, Michela/Rubini, Menegatti (2017): "Gender bias and sexism in language." *Oxford Research Encyclopedia of Communication*. https://doi.org/10.1093/acrefore/9780190228613.013.470.

Menegotto, Andrea (2020): "Español 2G y español 3G: propiedades morfosintácticas y semánticas del lenguaje inclusivo." *Cuarenta Naipes. Revista de Cultura y Literatura* 3: 207–232.

Molinaro, Nicola/Su, Jui Ju/Carreiras, Manuel (2016): "Stereotypes override grammar: Social knowledge in sentence comprehension." *Brain and Language* 155: 36–43.

Motschenbacher, Heiko (2014). "Grammatical gender as a challenge for language policy: The (im) possibility of non-heteronormative language use in German versus English." *Language Policy*13: 243–261.

MultiLingualGender: Project, MSCA Staff Exchanges, Horizon Europe, Grant Agreement No. 101182959. site.unibo.it/multilingualgender/en [04.02.2026].

Paolieri, Daniela et al. (2010): "Grammatical gender processing in Italian and Spanish bilinguals." *Quarterly Journal of Experimental Psychology* 63/8: 1631–1645.

Paolieri, Daniela et al. (2018): "Gender congruency effects in Russian-Spanish and Italian-Spanish bilinguals: The role of language proximity and concreteness of words." *Bilingualism: Language and Cognition* 22/1: 112–129.

Prewitt-Freilino, Jennifer L./Caswell, T. Andrew/Laakso, Emmi K. (2012): "The gendering of language: a comparison of gender equality in countries with gendered, natural gender, and genderless languages." *Sex Roles* 66/3–4: 268–281.

R Core Team (2023): *R: A language and environment for statistical computing*. Vienna: R Foundation for Statistical Computing. cran.r-project.org/doc/manuals/r-release/fullrefman.pdf [06.02.2026].

Richy, Célia/Burnett, Heather (2019): "Jean does the dishes while Marie fixes the car: a qualitative and quantitative study of social gender in French syntax articles." *Journal of French Language Studies* 30/1: 47–72.

Saalbach, Henrik/Imai, Mutsumi/Schalk, Lennart (2012): "Grammatical gender and inferences about biological properties in German-speaking children." *Cognitive Science* 36: 1251–1267. doi.org/10.1111/j.1551-6709.2012.01251.

Sabatini, Alma (1987). *Il sessismo nella lingua italiana*. Presidenza del Consiglio dei Ministri, Dipartimento per l'informazione e l'editoriale. Roma: Istituto poligrafico e zecca dello stato.

Sato, Sayaka/Athanasopoulos, Panos (2018): "Grammatical gender affects gender perception: Evidence for the structural-feedback hypothesis." *Cognition* 176: 220–231.

Schad, Daniel et al. (2020): "How to capitalize on a priori contrasts in linear (mixed) models: A tutorial." *Journal of Memory and Language* 110: 104038. doi.org/10.1016/j.jml.2019.104038.

Sera, Maria et al. (2002): "When language affects cognition and when it does not: an analysis of grammatical gender and classification." *Journal of Experimental Psychology: General* 131/3: 377–397.

Serianni, Luca (1991). *Grammatica italiana*. Torino: UTET.

Siyanova-Chanturia, Anna et al. (2015): "Gender stereotypes across the ages: On-line processing in school-age children, young and older adults." *Frontiers in Psychology* 6: 1388. https://doi.org/10.3389/fpsyg.2015.01388.

Stetie, Nolia A./Zunino, Gabriela M. (2022): "Non-binary language in Spanish? Comprehension of non-binary morphological forms: a psycholinguistic study." *Glossa: a journal of general Linguistics* 7/1. doi.org/10.16995/glossa.6144.

Stetie, Noelia A./Zunino, Gabriela M. (2023): "Estereotipos y morfología de género en nombres de rol: un estudio psicolingüístico." *Lexis* 47/2: 678–716. doi.org/10.18800/lexis.202302.006.

Stetie, Noelia A./Zunino, Gabriela M (2024): "Do gender stereotypes bias the processing of morphological innovations? The case of gender-inclusive language in Spanish." *Psychology of Language and Communication* 28/1: 446–469. doi.org/10.58734/plc-2024-0016.

Stetie, Noelia A./Martínez Rebolledo, Camila/Zunino, Gabriela M. (2023): "Diversidad de género y variación lingüística en el español de América: procesamiento de estereotipos y morfología de género en Argentina y Chile" ['Gender diversity and linguistic variation in American Spanish: processing gender stereotypes and morphology in Argentina and Chile.'] *Revista de Estudos da Linguagem* 31/2: 636–687. doi.org/10.17851/2237-2083.31.2.636-687.

Thornton, Anna M. (2001): "Some Reflections on Gender and Inflectional Class Assignment in Italian." In: Schaner-Wolles, Chris/Rennison, John R./Neubarth, Friedrich (eds.): *Naturally! Linguistic studies in honour of Wolfgang Ulrich Dressler presented on the occasion of his 60th birthday*. Torino, Rosenberg & Sellier: 479–487

United Nations Development Programme (2024). *Gender inequality index. The Human Development Report*. New York: United Nations. hdr.undp.org/data-center/thematic-composite-indices/gender-inequality-index#/indicies/GII [04.02.2026].

Vasishth, Shravan (2023): "Some right ways to analyze (psycho)linguistic data." *Annual Review of Linguistics* 9: 273–291. doi.org/10.1146/annurev-linguistics-031220-010345.

Vigliocco, Gabriella et al. (2005): "Grammatical gender effects on cognition: implications for language learning and language use." *Journal of Experimental Psychology: General* 134/4: 501–520. doi.org/10.1037/0096-3445.134.4.501.

Wickham, Hadley et al. (2019): "Welcome to the tidyverse." *Journal of Open Source Software* 4: 1686. doi.org/10.21105/joss.01686.

Winter, Bodo (2019). *Statistics for linguists: An introduction using R*. New York: Routledge.

World Economic Forum (2024): *Global Gender Gap Report*. Geneva: World Economin Forum. https://www.weforum.org/publications/global-gender-gap-report-2024 [04.02.2026].

Zanoli, Emma (2022): "A linguistic perspective on feminisation and gender-inclusive language. How partitive constructions can be used to uncover implicit gender bias in Italian." *Annali di Ca' Foscari. Serie occidentale* 56: 195–220.

Zemore, Sarah/Fiske, Susan/Kim, Hyun (2000): "Gender stereotypes and the dynamics of social interaction." In Eckes, Thomas/Trautner, Hanns M. (eds.): *The Developmental Social Psychology of Gender*. Psychology Press: 221–256.

Zunino, Gabriela M./Stetie, Noelia A. (2022): "Binary or non-binary? Gender morphology in Spanish: Differences dependent on the task." *ALFA: Revista de Lingüística* 66: e14546. doi.org/10.1590/1981-5794-e14546.

Zunino, Gabriela M. et al. (2025): "Dresses and ties: the effect of grammatical gender and stereotypical semantic bias in three Spanish speaking communities." *Language and Cognition* 17: e35. doi.org/10.1017/langcog.2025.4.