Differential roles of grammatical gender and social stereotype on perceived ratios of women and men

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Introduction

French grammar stipulates that masculine plural forms can be used to refer to a group of males, a group of males and females (in the sense that the presence of one male would be sufficient for the use of masculine form). and when the sex of the human referents is unknown or irrelevant. In the sentence (1a), *"Les employés sont en grève"* [The employees_{masc} are on strike], the subject is presented in masculine plural form, thus the sentence can be interpreted in three ways: 1) male employees are on strike; 2) both male and female employees are on strike; 3) emplyees whose gender is unknown or irrelevant are on strike. However, if presented in feminine form (1b): *"Les employées sont en grève"* [The employees_{fem} are on strike], it indicates that there are only females in the group, meaning feminine gender is female-specific.

The unequivalent positions of the two grammatical features have incited social debates about gender equality. On the one hand, the default choice of masculine form to represent both sexes is said to leave women underrepresented in language and hence in thought. The idea is that in seeing or hearing the masculine form, people are less likely to think of women, which in turn affects the way that women's roles in society are mentally represented. Proponents of this view thus argue for the replacement of generic masculine gender with *mixed-gender* generics and/or *"écriture inclusive"* [inclusive writing] (the latter is applicable only in written language) to increase the visibility of females in language, and by doing so, to improve the way in which society in general represents and

thinks about women. On the other hand, opponents in particular of the novel *inclusive* writing*,* represented by *l'Académie Française* [the French Academy], argue that masculine gender is used and interpreted as generic as the grammar prescribes, and thus does not influence how people think about gender roles. (l'Académie française, 2017).

All in all, the arguments revolve around the idea that language affects thought, which is known as the *Whorfian hypothesis* (Whorf, 1956). It gained support amongst cognitive scientists (Boroditsky, 2001; Hunt & Agnoli, 1991; Majid et al., 2004; Winawer et al., 2007; Wolff & Holmes, 2011) while the effects specifically in relationship to gender seem less clear and are not yet fully understood.

Research questions

The current study attempts to add an empirical perspective on these problems of societal importance by asnwering the following questions: 1) Does grammatical gender affect people's judgments about the likely ratios of women and men in social contexts, such as in professional groups? 2) How different is the generic masculine gender from its alternatives, namely *gender-mixed* form that explicitly mark the masculine and feminine sexes in a group (e.g. *les employés et les employées*[the employees$_{masc}$ and the employees$_{fem}$]), and *inclusive* form that is created particularly to improve feminine visibility (e.g. *les employé.e.s*[the employees$_{masc/fem}$) in terms of influencing perceptions of gender? We investigate these questions with two experiments (Experiment 1: involving profession items marked by gender; Experiment 2: profession items without gender markers). Here in this text I only present Experiment 1 as Experiment 2 had the identical experimental design and same pattern of results.

Experiment 1

Experiment 1 tested the effect of linguistic forms of nouns on French speakers' judgment of gender distributions in a certain social group which was either male- or female-stereotyped professions. The participants read a short text describing a fictional annual assembly of a certain profession and then estimated the percentage of men and women in the assembly. The professions were gender-marked and presented in different linguistic forms: *masculine*, *mixed-gender*, *inclusive*, and *feminine*.

Methods

Materials

Twelve profession names (6 female-biased and 6 male-biased) were chosen from the French part of the norming study (Misersky et al., 2014). The nouns referring to the professions were gender-marked, meaning the form of the nouns varies according to gender. For example, female-biased professions *caissier/caissière* [cashier$_{masc/fem}$], *diététicien/diététicienne* [dietician$_{masc/fem}$], and male-biased professions *mathématicien/mathématicienne* [mathematician$_{masc/fem}$], *charpentier/chapentière* [carpenter$_{masc/fem}$] have different forms to indicate male and female referents. The occupation categories chosen also fit the fictional scenario where an annual assembly of the professionals took place.

Participants

The participants were 382 native French speakers (204 women and 178 men), aged between 19 and 69 years (M = 41.58, SD = 11.72), recruited from the crowd-sourcing platform FouleFactory.

Procedure

The experiment was run via Qualtrics online software. The subjects were randomly assigned to one of the conditions and professions. We manipulated the gender stereotypicality of professions by showing randomly either the male- or female-dominated professions to the participants. Linguistic form was manipulated by varying the plurals in which each one of the 12 professions was presented. Then the layout of the rating scale was counterbalanced across participants by altering positions of the female and male puppets on the slider, left (female) - right (male) vs. left (male) – right (female). In this fashion, we ended up with 16 groups of 96 different combinations.

The participants' task was to read one short text which described a fictitious scenario where an annual assembly of some professionals took place carefully (once only) at their own pace. The profession names were randomly presented in one of the four plural forms which appeared twice in the text to ensure sufficient exposure. An exemplar of the text,

Le rassemblement régional des couturiers / couturiers et des couturières / couturier.ère.s / couturières a eu lieu cette semaine à Amiens. La localisation centrale de cette ville a été particulièrement appréciée. Les couturiers / couturiers et les couturières / couturier.ère.s / couturières ont aussi adoré l'apéro offert à l'hôtel de ville le premier jour.

[The regional gathering of dressmakers took place this week in Amiens. The central location of this city was particularly appreciated. The dressmakers also loved the aperitif offered at City Hall on the first day.]

The dependent measure was the estimated ratio of women and men for the fictious group.

Results
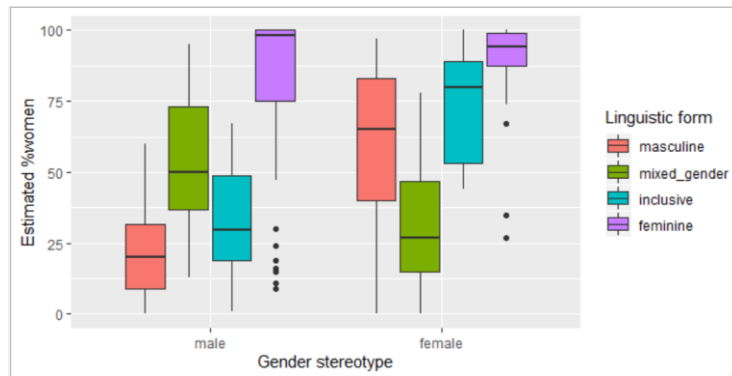
Figure 1. Experiment 1: Effects of linguistic form on estimated %women modulated through gender stereotype of professions

Discussion

The results showed that both gender bias and grammatical gender affect French speakers' perception of gender ratio in a social group. The female-stereotyped professions were estimated to have a higher percentage of women than male-stereotyped ones no matter in which generic form the professions were presented. Regardless of the prior stereotypicality of professions, participants rated a higher proportion of women when the professions were introduced using *inclusive* writing relative to *masculine* and *mixed-gender* generics. However, the influence of language form in terms of increasing women's visibility were modulated through gender stereotype of occupations. In particular, in comparison to *masculine* generic, *mixed-gender* form drew %women down for professions that were stereotypically feminine (e.g. cashier, dietician), whereas it pushed up the estimated %women in male-biased occupations (e.g. carpenter, electrician).

Conclusion

Language forms affect people's perception of gender ratios in interaction with social stereotype. The estimated number of women and men differed according to the variation of language forms in

which a profession was presented. People are less likely to think of women when seeing *masculine* generics which seem to activate a males-as-majority representation. M*ixed-gender* forms showed counter-stereotypical effects. It highlights the stereotypically minority gender group and leads people to make counter-intuitive judgments. As to *inclusive* writing, a novel form of generics promoting the status of the feminine gender, our results suggest that the moral connotations of a language form has bearings on how language users conceptualize the world. This explains why the rated percentage of women for both male- and female-stereotyped professions increased when people saw *inclusive* writing.

The present studies support the view that language affects thought, in particular, linguistic forms influence the perceived percentage of women and men in professional groups. People's perception of gender ratios is modulated by language along with the influence of world knowledge. Linguistic forms affect language users' thought via manipulating the availability of one gender group in their mind: *masculine* forms render males salient, *mixed-gender* generics highlight the minority gender in a stereotyped group, and *inclusive* writing promotes feminine visibility.