

# Grammatical gender in French: its impact on the interpretation of social gender in generic hybrid nouns

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## Description

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There is a growing interest among researchers working on French in the way grammatical gender in this language affects speakers' mental representations about social gender (e.g. Gygax et al. 2013, Gygax et al 2019, Richy & Burnett 2021). Grammatical gender refers to the classification of nouns in two or more classes, based on the agreement patterns involving the noun and its syntactic dependents. For instance, in French, the noun 'pain' "bread" is masculine, as manifested by the fact that it requires the masculine form for dependents such as determiners and adjectives (e.g. un bon pain "a good bread"). Feminine nouns such as baguette "baguette" require the feminine form for their dependents (e.g. une bonne baguette "a good baguette"). Systems of grammatical gender are often sex-based, namely the grammatical gender of human-denoting nouns correlates with the biological sex/social gender of the corresponding referents (Corbett 2013). For instance, in French, the noun referring to men is masculine ("un homme") whereas the noun referring to women is feminine ("une femme"). However, there can be mismatches between the grammatical gender of human-denoting nouns and the social gender of corresponding referents. One famous case of mismatch in French is masculine generics. In their generic use, masculine nouns can refer to both male and female individuals (e.g. "un artiste, ça doit s'entraîner tous les jours"). Hence, the masculine gender is traditionally considered by linguists as a neutral gender in this specific context. However, experimental studies have consistently shown that masculine generics bias speakers toward a masculine interpretation, even after controlling for the effect of gender stereotypes associated to nouns (e.g. Sato et al 2013, Richy & Burnett 2021). This suggests that grammatical gender is not semantically vacuous but consistently contributes to the inferences speakers make about nouns' referents, with potential psychological consequences on speakers' attitudes in the world (e.g. Chatard et al 2005). These findings have been used as an argument for gender-neutral language, namely a set of strategies designed to avoid using masculine forms when the meaning intended does not include only male referents.

This study focuses on another case of mismatch between grammatical gender and social gender that has not received as much attention in the literature on French: hybrid nouns with a generic interpretation. Hybrid nouns are nouns that have a grammatical gender that does not match the social gender of their referents (Corbett 2015). A famous case is German "Mädchen": this noun is grammatically neuter ("das Mädchen") but refers to girls. French has a set of hybrid words that are either masculine (e.g. individu "individual") or feminine grammatically (e.g. personne "person") but are semantically generic, namely can refer to both male and female individuals. To our knowledge,

a single experimental study by Brauer and Landry (2008) has investigated whether grammatical gender biases the interpretation of generic hybrid nouns, focusing on a single pair (individu/personne). In Study 3, Brauer and Landry (2008) found a larger proportion of male interpretations for the masculine noun "individu" than for the feminine noun "personne", in line with the general hypothesis that grammatical gender affects semantic interpretation. The present study aims to replicate this study using a larger set of hybrid nouns.

Gygax et al (2019) argued that hybrid nouns are not relevant to explore the semantic effect of grammatical gender on the basis that these words are exceptions within gender systems. Indeed, hybrid nouns belong to a closed lexical class in French whereas the more extensively studied masculine generic is morphologically productive. We think that generic hybrid nouns are nonetheless relevant because, contrary to masculine generics, they make it possible to test the interpretative effect of both grammatical gender values (masculine and feminine). Generic hybrid nouns are found among both masculine nouns (e.g. "individu") and feminine nouns (e.g. "personne") whereas masculine generics are by definition only masculine and therefore only allow to test a male bias in the interpretation of grammatical gender (and not a potential corresponding female bias induced by feminine forms used generically).

## Study Information

### Hypotheses

If grammatical gender influences the interpretation of generic hybrid nouns, then generic hybrid nouns with masculine grammatical gender (e.g. "un individu", "un personnage") should be more likely to be interpreted as referring to a male referent than generic hybrid nouns with feminine grammatical gender ("une personne", "une personnalité").

## Design Plan

### Study type

Experiment - A researcher randomly assigns treatments to study subjects, this includes field or lab experiments. This is also known as an intervention experiment and includes randomized controlled trials.

### Blinding

- For studies that involve human subjects, they will not know the treatment group to which they have been assigned.
- Personnel who interact directly with the study subjects (either human or non-human subjects) will not be aware of the assigned treatments. (Commonly known as “double blind”)

Is there any additional blinding in this study?

### *No response*

### Study design

The study is a repeated measurement experiment with a Latin square design. There are two conditions corresponding to the two levels of the variable "grammatical gender": feminine and masculine. Each condition is represented by 14 different items that are paired up across the two conditions (feminine and masculine). A pair of items consists of two sentences that feature

semantically similar masculine and feminine hybrid nouns (e.g. "individu"/"personne", "vedette"/"talent") but are otherwise identical (e.g. "Une vedette de la chanson a été invitée pour présider le jury"/"Un talent de la chanson a été invité pour présider le jury"). Two groups of items are created, each one containing 7 feminine hybrid nouns and 7 masculine hybrid nouns. Each group features only one among the two paired-up items (e.g. "Une vedette de la chanson a été invitée pour présider le jury" appears in one group and "Un talent de la chanson a été invité pour présider le jury" appears in another group). Participants are randomly assigned to one of the two groups and therefore see 7 feminine hybrid nouns and 7 masculine hybrid nouns each. Participants will be asked to indicate what, according to them, is the gender of the person that is referred to in the sentence. To answer, they will use a 7-point Likert scale, where 1 corresponds to a highly confident "man" response and 7 a highly confident "woman" response. Following Richy and Burnett (2021), experimental items will be interspersed with filler items consisting of proper names. In order to make the goal of the study harder to guess, participants will also be asked two additional questions, following Richy and Burnett (2021) again: what according to them is the age of the person referred to in the sentence and how advanced their education is. The specific question that will be asked to participants is the following: "À votre avis, de qui parle-t-on dans cette phrase ? Indiquez ses caractéristiques individuelles ci-dessous" (According to you, who is this sentence about? Indicate his/her individual characteristics below). The attached csv file contains all the experimental and filler items that will be used in the study. The columns Group1 and Group2 indicate whether the item in the corresponding row appears ("yes") or not ("no") in the corresponding group of participants.

*No files selected*

Randomization

Participants will be randomly assigned to one of the two groups. The order of presentation of experimental and filler items will be randomized for each participant.

## Sampling Plan

Existing Data

Registration prior to creation of data

Explanation of existing data

*No response*

Data collection procedures

Data will be collected online through the platform Limesurvey. Participants will be recruited among university students mainly.

*No files selected*

Sample size

Our target sample size is 100 participants (50 per group).

Sample size rationale

The sample size was chosen for convenience. In a previous study, we managed to recruit around 100 participants using the same method of recruitment.

Stopping rule

*No response*

## Variables

Manipulated variables

The independent variable we are interested in is the grammatical gender of the generic hybrid noun, with two values (masculine, feminine).

*No files selected*

Measured variables

The dependent variable is a 7-point Likert scale, with 1 corresponding to a highly confident "man" response and 7 to a highly confident "woman" response.

*No files selected*

Indices

*No response*

*No files selected*

## Analysis Plan

Statistical models

The data will be analyzed using a Bayesian hierarchical ordinal regression fit with the package brms in R (Bürkner 2017, Bürkner & Vuorre 2019). brms' default priors will be used. The dependent variable will be the social gender of the referent (SocGender), as estimated by participants using the 7-point Likert scale. The fixed effect will be the grammatical gender of the noun (GramGender). The model will include the maximal random effects structure justified by the study's design: a by-participant random slope for GramGender, a by-participant random intercept, a by-group random slope for GramGender (there are two groups of participants in the Latin square design), a by-group random intercept, a by-item random intercept (corresponding to the effect of a specific sentence and pair of masculine/feminine hybrid nouns on the response variable, e.g. "C'est un as/une star de la course à pied), and a by-word random intercept (corresponding to the effect of specific nouns, e.g. "vedette", "talent", etc., on the response variable, independent of their grammatical gender, whose effect is captured by the variable GramGender). The formula for the model is:  $\text{SocGender} \sim \text{GramGender} + (\text{GramGender} | \text{Participant}) + (\text{GramGender} | \text{Group}) + (1 | \text{Item}) + (1 | \text{Word})$

*No files selected*

Transformations

*No response*

Inference criteria

For inference criteria, we will follow the recommendations in Franke & Roettger (2019).

Data exclusion

*No response*

Missing data

No response

Exploratory analysis

No response

## Other

Other

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