Jean does the dishes while Marie fixes the car: A qualitative and quantitative study of social gender in French syntax articles

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Abstract

This paper addresses the question of gender bias and discrimination in the methodology of theoretical syntax. Drawing our inspiration from Macaulay and Brice (1997) and Pabst et al (2018)’s studies of English, we investigate the way two social genders – women and men – are depicted in constructed examples in syntax articles in French. We looked at constructed examples in articles, all taken from the same French linguistics journal. We looked at grammatical functions, thematic roles and lexical choices. We found a strong male bias: men are more frequent than women across the board, they are more likely to be in a subject position as well as being referred to via pronouns, and more likely to be agents and experiencers, but there is no effect of author gender nor publication date. Furthermore, women and men are not related to the same lexical choices (e.g. women are never related to friendship or car topics, nor are they successful, but they are often getting married, and are related to family roles). Furthermore, since French is a grammatical gender language where masculine gender can also be intended as ‘generic’ (i.e. referring to both females and males), we designed a second study to investigate generic masculines. When we compared MG noun phrases to female and male arguments in term of grammatical functions and thematic roles, we found that, in production, they were different than true masculines: more likely to be non-subject and unlikely to be experiencers. We discuss the implications of our results for the meaning of ‘generic masculines’ and for practices aimed at reducing discrimination in French linguistics.

1. Introduction

This paper presents both a qualitative and quantitative study investigating the way women and men are depicted in constructed examples from French syntax articles from the 1960s to the present. As our starting point, we take Macauley & Brice 1997’s ground breaking study of gender in syntax examples in English, and investigate whether their synchronic and diachronic results can be replicated in a corpus of French linguistics articles. Macauley & Brice 1997 has been enormously influential, being replicated in many subsequent studies of textbooks and articles in varieties of English (Lee & Collins 2010, Lewandowski 2014, Lee 2014, Tarrayo 2014, Pabst et al. 2018), and featuring in many discussions of the representation of gender in English (Bergvall 1996, Bucholtz 2004, Eckert & McConnell-Ginet 2013, McConnell-Ginet 2014, Barrett 2014, among others); however, although there is research on the representation of gender in French textbooks/language manuals (Rignault & Richert 1997, Wagner & Tisserant 2008, Sinigaglia-Amadio 2010, Baider & Papaioannu 2014, among others) and grammars (Abbou 2018), whether/how gender asymmetries appear in research in French linguistics has not yet been investigated. Furthermore, we argue that replicating Macauley & Brice on a French corpus of examples is far from trivial given differences in the morphological properties of English and French. In particular, since French is a grammatical gender language (Hockett 1958, Corbett 1991), and French grammatical gender does not track social gender as

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closely as English’s notional gender (McConnell-Ginet 2013), the design of our study has to be slightly different. Consequently, however, our approach will yield new results on the use of so-called generic masculines by linguists and make a new contribution to the debate concerning their use and interpretation in French.

The paper is laid out as follows: in section 2, we review the previous work on social gender in constructed examples in English, detailing the classic quantitative and qualitative results of Macauley & Brice 1997 and more recently Pabst et al. 2018. In section 3, we detail our quantitative studies and show that many of the patterns found by Macauley & Brice and Pabst et al. for English are also found in our French corpus. Nevertheless, there exist some significant differences between the two languages, primarily with respect to the social properties of the authors favoring masculine vs feminine. We also present quantitative results concerning the use of generic masculines and argue that the observed patterns complicate the picture painted by recent results from the psycholinguistic literature on these puzzling linguistic expressions. In section 4, we present a study of the lexical choices in our corpus and compare our results to the lexical components of Macauley & Brice and Pabst et al. Finally, section 5 concludes with the implications of our research for gender fair guidelines in French linguistics and areas for future work.

2. Social gender in English syntax examples

In 1997, Monica Macaulay and Colleen Brice published two studies focused on the distribution of social gender in English syntactic articles and textbooks. For their first study, they looked at the distribution of female and male gendered noun phrases depending on their grammatical functions and thematic roles associated with these noun phrases in 1,032 constructed examples in a 1991 syntax textbook. They also looked at the repartition of gender-specific pronouns – he and she – and the “most commonly used female and male proper names occurred”. They found that references to men were far more frequent than references to women in this corpus (967 male referents (74%) compared to 336 female referents (26%)), and that there exist important asymmetries in social gender according to grammatical function and thematic roles. For example, they observed that women are much less often subjects than men (8% compared to 49%), i.e. examples like (1a) are much more frequent than examples like (1b) in their corpus. Likewise, they found that examples with male agents (2a) are much more frequent (56%) than examples with female agents (2b) (10%). Women were also more likely to be indirect objects, particularly recipients than men (3) (48% vs 32%). In their second study, they examined ten commonly used syntax textbooks from 1969 to 1994. Two hundred examples have been randomly chosen and analyzed according to grammatical functions and thematic roles, although in this study they only looked at subjects and agents, which were the two most significant roles in terms of asymmetry. In eight of the ten books, the same tendency was observed: men are far more often subjects and/or agents than women.

   b. She proved to be a disaster. (Macaulay & Brice, 1997: 812)

(2) a. The man killed, cut up, and ate his children. (Macaulay & Brice, 1997: 804)

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2Subjects, direct objects, indirect objects and others.
3Agents, patients, experiencers, percepts, recipients, themes and others.
4They did not reveal textbooks names.
b. The boy is kicked by the girl. (*Macaulay & Brice, 1997: 812*)

(3) **He complained to her about her attitude. (*Macaulay & Brice, 1997: 804*)**

Macauley & Brice observed a further asymmetry regarding the thematic role of experiencer: although both men and women are experiencers in their corpus, they do not experience the same things. Women tend to be related to feelings such as ‘annoy’ or ‘please’, which are usually passive constructions, eg. (4a), whereas men have cognitive experiences such as ‘consider’, ‘think’, or ‘see’, which are agentive-like constructions, eg. (4b). Furthermore, men are both more often referred to via proper nouns and pronouns, while noun phrases related to women often referred to their ‘wife’ or ‘motherhood’ status (5ab).

(4) a. Whatever he does annoys her. (*Macaulay & Brice, 1997: 803*)

b. Bill found a principle which solves the problem. (*Macaulay & Brice, 1997: 809*)

(5) a. He may have turned against his wife. (*Macaulay & Brice, 1997: 809*)

b. John being in hospital, his wife signed the cheques. (*Macaulay & Brice, 1997: 809*)

In addition to quantitative observations about grammatical functions and theta roles, Macaulay and Brice give a qualitative analysis of the lexical choices made by the authors in these examples, particularly how types of verbs, kinship and employment terms relate to gendered discourses (see Cameron 1997, Sunderland 2004, Eckert & McConnell-Ginet 2013, among others). On one hand they found that men are more likely to be associated with cleverness and intellectual activities – such as book-reading, ‘being a genius’ – or more prestigious positions than women – doctors, chairmen or detectives. On the other hand, women are very often described in terms of their appearance, for instance how they dress or how they please men. These patterns reproduce discourses supporting gendered stereotypes, for example, stereotypes related to hegemonic masculinity (Connell 1998, Kiesling 2009), where men are heterosexual, powerful, smart, sometimes violent, strong, drive or fix cars, and stereotypes where women are passive mothers or housewives.

Macauley & Brice also found that the social properties of the authors in their corpus significantly conditioned their references to men and women: female authors made generally more references to women in their example sentences than male authors, and the content of their examples fed less into gender stereotypes than their male colleagues’ examples:

“Gender of author plays a variable role in the distribution of gendered NPs. While all of the male-authored texts show a bias toward male-gendered subjects and agents, the female-authored texts are less consistent. Only one of these is comparable to those written by men and this is the most recently published one, #10. The other two texts written by women show very different results: one (#9) has an almost even distribution (with some preference toward female-gendered subjects and agents), while the other (#8) shows a strong bias toward female-gendered arguments.” (*Macaulay & Brice, 1997: 805*).

Twenty one years later, Pabst et al. 2018 replicated Macaulay and Brice’s studies, looking at 200 examples randomly chosen from 6 syntactic textbooks published in between 2005 and 2017. They showed that the patterns discussed above are still active: men are still more likely to be in a subject position and have agentive roles than women, they are still more often
associated with intellectual activities, prestigious positions and violence than women, and still more referred to via names and pronouns than women. Pabst et al. also found that author gender has an effect on their lexical choices: female authors used “more ambiguous and inanimate arguments” than male authors (Pabst et al. 2018: 26).

Nevertheless, Pabst et al. found some differences. In contrast to the 1997 study, they observed that men are now more likely to be in an object position than women, and that men and women are equally likely to experience positive emotions. This being said, women still experience negative emotions more often than men. Finally, Pabst et al. noted a slight change regarding the presence of gender stereotypes: even though men are still violent or related to cars and women still described according to their appearance in 2018, these tendencies seemed to decrease compared to the previous findings.

In the rest of the paper, we explore to what extent the same patterns hold of constructed examples in French linguistics articles.

3. Quantitative study

Inspired by Macauley & Brice, we undertook a quantitative study of the distribution of references to men and women in the articles from a major French linguistics journal, Langue Française. In order to investigate whether there has been any evolution in this area, we compared articles from two time periods: the earliest articles available (issues from 1969-1971) and the most recent articles (2008-2017)\(^5\).

<table>
<thead>
<tr>
<th>Time period</th>
<th># issues</th>
<th># articles</th>
<th># male authors</th>
<th># female authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Older</td>
<td>5</td>
<td>27</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>Recent</td>
<td>3</td>
<td>18</td>
<td>6</td>
<td>11</td>
</tr>
</tbody>
</table>

Table 1: Breakdown of corpus by time period and author gender

We extracted all the constructed examples from these articles and coded each noun phrase for social gender (if relevant) and a variety of linguistic and social factors. The whole dataset consisted of 5564 noun phrases across 2598 example sentences.

3.1 Coding for social gender in French

\(^5\)Interestingly, the number of constructed examples in articles in Langue Française has declined sharply from the 1970s till the present day. Only three issues from 2008-2017 actually had constructed examples, in contrast to all of the issues from 1969-1971. This appears to reflect an independent change in the sociology of the field, where data used in French linguistics has become more based on corpora. Of course it would also be interesting to study whether the corpus examples selected in more recent papers show the same patterns as we find with constructed examples, but we leave this investigation to future work.
Unlike English, French is a grammatical gender language, meaning that both animate and inanimate nouns are sorted according to two grammatical genders: masculine or feminine. Grammatical gender is observable on dependents of the noun, for example, an adjective that qualifies it or a determiner that precedes it. For example in (6ab) the grammatical gender of nageurs/nageuses can be observed from the adjective forts/fortes, and in (6cd) the grammatical gender of different occurrences of journaliste can be observed from the determiner la/le.

(6) a. Les nageuses sont fortes.
   The female swimmers are strong.
   DEF.PL swimmer-F.PL are strong.F.PL

b. Les nageurs sont forts.
   The (male) swimmers are strong.
   DEF.PL swimmer-M.PL are strong.PL

c. La journaliste fait un reportage.
   The female journalist is doing a report.
   DEF.F.SG journalist.SG does INDEF.M.SG report.M.SG

d. Le journaliste fait un reportage.
   The (male) journalist is doing a report.
   DEF.M.SG journalist.SG does INDEF.M.SG report.M.SG

The exact meaning of the nouns in (6b) and (6d) is the subject of controversy in the literature on French grammatical gender. Many prescriptivist grammars claim that masculine grammatical gender may have a gender neutral or ‘generic value’ (Grevisse & Goose 2008, Académie Française 1984, 2014), meaning that le journaliste or les nageurs may actually refer both to men or/women.

“Le masculin, étant le genre indifférencié, s'emploie aussi sans s'opposer au féminin pour désigner des personnes, ou une personne, en faisant abstraction de leur sexe ou de son sexe ; cela arrive aussi, mais plus rarement pour le féminin.” (Grevisse & Goose 2008: 619)

“Si, en effet, le français connaît deux genres, appelés masculin et féminin, il serait plus juste de les nommer genre marqué et genre non marqué. Seul le genre masculin, non marqué, peut représenter aussi bien les éléments masculins que féminins. En effet, le genre féminin ou marqué est privatif : un « groupe d’étudiantes » ne pourra contenir d’élèves de sexe masculin, tandis qu’un « groupe d’étudiants » pourra contenir des élèves des deux sexes, indifféremment. On se gardera également de dire les électeurs et les électrices, les informaticiennes et les informaticiens, expressions qui sont non seulement lourdes mais aussi redondantes, les informaticiennes étant comprises dans les informaticiens.”7

On the other hand, research in psycholinguistics (such as Chatard et al. 2005, Brauer & Landry 2008, Gygax et al. 2008, 2012, Misersky et al. 2014, among others) has shown that these particular uses of masculine create a socially masculine bias in interpretation; that is, le

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6Note that gender neutral interpretation is not generally proposed to be available for feminine nouns like la journaliste and les nageuses. Exceptions to this are expressions like la star ‘the star’ and la victime ‘the victim’.

7 http://www.academie-francaise.fr/questions-de-langue#38_strong-em-fminisation-des-noms-de-mtier-de-titres-etc-em-strong
journaliste and les nageurs are most likely to be interpreted as referring to men. We therefore distinguished masculine generics in the coding.

We coded every noun phrase of each example according to the social gender of its referent. As such, non-human arguments as well as the majority of personal pronouns received a ‘neutral’ code O ‘other’. Noun phrases with clearly female referents (like the subjects in (6ac)) were coded F, and noun phrases with clearly male referents (7) were coded M. ‘Generic’ masculines were kept separate and coded MG.

(7) a. Paul rencontre son frère.
*Paul meets his brother.*
(Borillo, A. Langue française, n°11, 1971. pp. 17-31)

b. Il avait rencontré cette femme sur son chemin.
*He had met this woman on his way.*

*Table 2* gives the distribution of the social gender of noun phrases in our corpus (percentages have been rounded up). As a first trend, we already see that male noun phrases stand out from female and undifferentiated gender noun phrases, since they embody 30% of the total of NPs used throughout our corpus.

<table>
<thead>
<tr>
<th>Social gender</th>
<th>Number of occurrences</th>
<th>% of total data</th>
</tr>
</thead>
<tbody>
<tr>
<td>O (other)</td>
<td>3107</td>
<td>56%</td>
</tr>
<tr>
<td>M (male)</td>
<td>1705</td>
<td>30%</td>
</tr>
<tr>
<td>F (female)</td>
<td>379</td>
<td>7%</td>
</tr>
<tr>
<td>MG (‘generic’ masculine)</td>
<td>373</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5564</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

8In French, personal pronouns correlate with social gender only for the third person, both in the singular and the plural, excluding on ‘we.3SG’. We sometimes coded other personal pronouns as F or M when an adjective – agreeing in gender and number – was qualifying these pronouns. For instance, in “*J’étais belle a un certain degré dans ma jeunesse*” (Michel Pierrard, « Que dans les comparatives equatives : une proforme indefinie ? », Langue francaise 200822 (n 158), p. 99-85.)’I was pretty to some extend when I was young’, the adjective belle ‘pretty’ is a feminine – the masculine being beau –, so we know that this 1SG is a woman.
3.2 Linguistic and social factors coded

We coded each noun phrase for its syntactic position, its thematic role and whether or not it is a full noun phrase (like a description or a name) or a pronoun. For syntactic position, we coded for three positions: subject, object and other, which grouped together indirect objects, and noun phrases in adverbial phrases and attributive and vocative uses. For thematic role, we distinguished three categories: agent, experiencer and other, which grouped together roles with few occurrences such as patient, theme, recipient, benefactive, source etc.

For social factors, we also coded for time period (older (1969-1971) vs newer (2008-2017)) and the social gender of the article’s authors (male, female).

3.4 Analysis 1: Male/female referents

In our first analysis, we consider the patterns of social gender variation looking only at clear cases of socially male (8a) and socially female referents (8b).

(8) a. L’homme que tu as rencontré hier était un de mes amis.
   *The man you met yesterday was one of my friends.*  
   (Dubois, J. Langue française, n°1, 1969. pp. 41-48).

b. La ménagère achète des légumes.  
   *The housewife buys vegetables.*   
   (Dubois, J. Langue française, n°1, 1969. pp. 41-48).

In (8a), *l’homme* cannot be intended as generic since it refers directly the social gendered noun phrase ‘the man’. On the other hand *un de mes amis* may refer to both male and female friends, and hence was not counted in our first study. We incorporate generic masculines into our results in a second analysis.

We start by looking at the distribution of clear references to men vs references to women. Since references to men outnumber references to women across the board, we expect that they will outnumber women in every syntactic and semantic subcategory. However, we find interesting variation according to subcategory. First, we see that, as in the American studies, pronouns were more used to refer to men than to women: as shown in Table 3, only 14% of pronominal referents were female; whereas, 20% of full noun phrases referred to women.

<table>
<thead>
<tr>
<th></th>
<th>Full noun phrases</th>
<th>Pronouns</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>285</td>
<td>20%</td>
<td>83</td>
</tr>
<tr>
<td>M</td>
<td>1122</td>
<td>80%</td>
<td>532</td>
</tr>
</tbody>
</table>

*There were two articles that were collaborations between men and women. Given the low number in this category, we set aside this data in the statistical analysis.*
Table 3: Distribution of full noun phrases vs pronouns according to social gender

We also find significant differences in the proportion of references to men and women according to syntactic position and thematic role. As shown in Table 4, references to men are much more likely in subject position; whereas, references to woman are more frequent in object and oblique positions.

![Figure 1: Distribution of full noun phrases vs pronouns according to social gender](image)

Table 4: Distribution of syntactic positions according to social gender

We find similar results for thematic role: as shown in Table 5, male reference is much more likely for agents and experiencers (both 88%); whereas, 26% of noun phrases in other thematic roles refer to women.
Table 5: Distribution of thematic roles according to social gender

Of course, syntactic position and thematic role are not completely independent in French, with agents being highly likely to appear in subject position. Indeed, if we cross syntactic position and thematic role in our data, we do not find a single agentive object.

<table>
<thead>
<tr>
<th></th>
<th>Agent</th>
<th>Experiencer</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object</td>
<td>0</td>
<td>29</td>
<td>153</td>
<td>182</td>
</tr>
<tr>
<td>Oblique</td>
<td>38</td>
<td>38</td>
<td>290</td>
<td>366</td>
</tr>
<tr>
<td>Subject</td>
<td>737</td>
<td>321</td>
<td>416</td>
<td>1474</td>
</tr>
<tr>
<td>Total</td>
<td>775</td>
<td>388</td>
<td>859</td>
<td>2022</td>
</tr>
</tbody>
</table>

Table 6: Total occurrences across grammatical functions and thematic roles.

Because of the close relationship between these two factors, in the statistical analysis we combined the two into a single factor, which distinguishes between agentive subjects, experiencer subjects, non-agentive subjects, objects and obliques. The distribution of social gender across these new syntactico-semantic categories is shown in Table 7.

<table>
<thead>
<tr>
<th>Subject agent</th>
<th>Subject experiencer</th>
<th>Subject other</th>
<th>Object</th>
<th>Other</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>90</td>
<td>25</td>
<td>59</td>
<td>54</td>
<td>140</td>
</tr>
<tr>
<td>M</td>
<td>647</td>
<td>296</td>
<td>357</td>
<td>128</td>
<td>226</td>
</tr>
<tr>
<td>TOT.</td>
<td>737</td>
<td>321</td>
<td>416</td>
<td>182</td>
<td>366</td>
</tr>
</tbody>
</table>

Table 7: Distribution of social gender across syntactic and semantic roles.
Finally, for the social factors: Table 8 shows the distribution of references to men vs women according to the gender and time period of the authors. Unlike in the American studies, we do not find a very big difference according to either author social gender or to publication date. Since there are very few occurrences in mixed author papers, we do not include this factor in the statistical analysis.

<table>
<thead>
<tr>
<th></th>
<th>Years 1969-1971</th>
<th></th>
<th>Years 2008-2017</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>Female author</td>
<td>64</td>
<td>426</td>
<td>123</td>
<td>428</td>
</tr>
<tr>
<td>Male author</td>
<td>146</td>
<td>576</td>
<td>35</td>
<td>224</td>
</tr>
</tbody>
</table>

Table 8: Distribution of gendered noun phrases according to social factors

In order to properly assess the importance of the different linguistic and social factors, we turn to statistical analysis.

3.4.1 Statistical analysis

We build generalized linear mixed effects models in R using the lme4 package (Bates et al. 2014) with author (N=39) as a random effect and author social gender (M vs F), publication date (old vs new) and syntactico-thematic role (agentive subject, experiencer subject, non-agentive subject, object and oblique), and noun phrase (full noun phrase vs pronoun) as fixed effects. The results of the statistical analysis are shown in Table 9, where the intercept corresponds to an oblique full noun phrase written by an older female author.
As shown in Table 9, the social factors are not significant: contrary to the American studies, we find no effect of time period or gender. The linguistic factors, on the other hand, were significant, with all subjects and pronouns significantly favoring male reference. Likewise, all subject positions favored male reference more than objects and obliques, and, although there were no differences between non-subject positions. Furthermore, posthoc analysis shows a distinction between subject positions based on thematic role: experiencer subjects are significantly more likely to be male referents than both agentive and other subjects (p = 0.000741); whereas, there is no significant difference between agentive and other subjects (p = 0.320076).

### 3.4.2 Discussion

Our results show that women are more likely to be referred to via full noun phrases than pronouns and are less likely to appear in subject position than as non-subjects. We propose that these two results can be understood under the hypothesis that, in our corpus, the discourse topics are predominantly socially masculine, as predicted by Centering theory. Centering theory, developed by Grosz, Joshi, and Weinstein (1983) aims to study discourse coherence and continuity through the relations between the “aboutness” and forms used to refer to the center of utterances. Although our corpus is not a genuine ‘fragment of discourse’, we suggest that each article used here displays a particular discourse pattern on its own, as they all refer to one specific syntactic topic. Hence example sentences gathered in each paper may show a ‘global coherence’ (Grosz, Joshi, and Weinstein, 1995). Proponents of Centering theory (Brennan 1995, Marslen-Wilson, Levy, & Tyler 1982, Gordon, Grosz & Gilliom 1993, among others) have shown that distinctions between categories (pronouns vs noun phrases) and syntactic positions (subject vs non-subject) are significant. The use of different kinds of expressions or syntactic positions to refer to an individual or object can make a difference involving different

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**Table 9**: Fixed effects of the generalised linear mixed model. Intercept: older female author, object positions, full noun phrases

|                           | Estimate | Std. Error | z value | Pr(>|z|) |
|---------------------------|----------|------------|---------|----------|
| (Intercept)               | 1.9167   | 0.8311     | 2.306   | 0.0211   * |
| **Linguistic factors**    |          |            |         |          |
| Obliques                  | -0.3436  | 0.2142     | -1.604  | 0.1087   |
| Agentive subjects         | 1.1322   | 0.2150     | 5.265   | 1.40e-07 *** |
| Experiencer subjects      | 1.9779   | 0.2846     | 6.949   | 3.69e-12 *** |
| Other subjects            | 0.9390   | 0.2307     | 4.070   | 4.69e-05 *** |
| Pronouns                  | 0.4439   | 0.1747     | 2.541   | 0.0110   * |
| **Social factors**        |          |            |         |          |
| Male author               | -0.1760  | 0.4603     | -0.382  | 0.7022   |
| Year (2008-2017)          | -0.6951  | 0.4758     | -1.461  | 0.1440   |

10Where there are two level of coherence: local (coherence within a discourse segment) and global (relations between different segments of an entire discourse).
centers. Subject positions and pronominal expressions are more salient elements within a sentence, and so may be preferred by a speaker to center an expression. Thus, the assumption that only men are usually discourse topics in syntactic examples – both in French and in American English – explains why subject positions and pronoun uses display a significant male bias.

In summary, our corpus study has shown similarities as well as differences with Macaulay and Brice (1997) and Pabst. et al (2018)’s findings. Overall, references to women are far less frequent that men across the board, and embody more peripheral grammatical functions that men: more often obliques, less often subjects and less likely to be in an object position. They are also less likely to display an agentive role and to be discourse topics – more often referred to via full noun phrases and being optional arguments. However, we found that in French examples only men were significantly likely to be experiencers. Furthermore, French syntacticians displayed the same socially masculine gender bias regardless of gender, this does not appear to change over the years. It is possible that this difference in terms of patterns of use could be attributable to differences between French and American gender ideologies (see Varikas 2004, Fassim 2006, Abbou 2011, among others). However, we leave this question open to future work.

3.5 Analysis 2: ‘Generic” masculines

The first part of our paper gave a direct comparison between gender in English linguistics articles and gender in French linguistics articles. However, since French is a grammatical gender language, it does not encode social gender in the same way. For example, it is easy to use expressions in English that do not make any reference to social gender, such as chairperson (rather than chairman/woman) or police officer (rather than policeman/woman). As discussed above, many French authors use masculine grammatical gender (eg. les policiers) when they intend gender-neutral reference; however, psycholinguistic research has revealed that this particular masculine grammatical gender is not as unmarked as prescriptivists claim it is. For example, Brauer and Landry (2008) showed in five different experimental studies with both adults and children that the use of ‘generic masculine’ (9) instead of a gender inclusive expression (10) was more likely to create a socially masculine interpretation.

(9) Les avocats ont gagné le procès.
    The lawyers (m) have won the trial.

(10) Les avocats et avocates ont gagné le procès.
    The male and female lawyers have won the trial.

Gygax et al. (2008) compared the influence of stereotypes and inflection on the representation of social gender in English, German and French, using role names and explicit gender references. They showed that social stereotypes led English speakers to interpret a role name as feminine or masculine – for instance, ‘engineers’ was highly biased towards a masculine interpretation, whereas ‘beauticians’ was highly biased towards a feminine interpretation –, but grammatical gender affected German and French speakers’ interpretation, overriding the stereotypicality of the noun in favor of a social gender interpretation in line with the noun’s
grammatical gender. In addition, many feminist works (Houdebine-Gravaud 1995, Khaznadar 2007, Baidar, Khaznadar & Moreau 2007, among others) argue that the use of ‘generic masculines’ highly contributes to the under-representation of women within our society, because of the bias of this grammatical gender for a socially masculine interpretation.

Given the well-documented socially masculine bias of grammatically masculine expressions, how should we interpret the social gender of noun phrases in syntactic examples in our corpus such as (11)?

(11) a. Ce journaliste est prêt à tout pour faire un scoop.
   This (m) journalist would do everything to get a scoop.
   (Marque-Pucheu, M. Langue française 2008/1 (n° 157), pp. 74-105.)

b. Le chef de cette bande a menacé les révoltés d’être impitoyable.
   The gang chief (m) threatened the rebels (m) to be merciless.
   (Ruwet, N. Langue française, n°6, 1970. pp. 70-83)

Since these examples do not have a specific context, we cannot rely on external hints to try and identify the social gender intended as one may do in natural discourse contexts. However, the psycholinguistic literature on this topic does give us a number of ways to investigate how these ‘generic masculines’ should be interpreted. Firstly, as discussed above, noun phrases describing certain role names are associated with male or female stereotypes which influence their social gender interpretation. If the writers using a ‘generic masculine’ generally wanted to refer to men in our corpus, they would probably pick nouns with stereotypically male meaning. In order to test this hypothesis, we used Misersky et al. (2014)’s stereotypicity scores to measure to what extent our MG noun phrases are likely to be interpreted as socially masculine. Overall, we found a score of 0.32\textsuperscript{11} (MIN = 0.1, MAX = 0.58\textsuperscript{12}) – 0.0 being 100% male interpretation and 1.0 being 100% female. Thus, the ‘generic masculines’ in our corpus contain nouns that are only slightly associated with male stereotypes. Secondly, if, as psycholinguistic work would suggest, these particular noun phrases truly refer to men, they should follow the same syntactic distributional pattern as male referring noun phrases observed above. In other words, they should be more likely than female referring noun phrases to be in a subject position. Since we only kept ‘generic masculines’ noun phrases referring to human beings, we limit our study to masculine, feminine and ‘generic masculine’ full noun phrases.

Tables 13 and 14 show the distribution of male, female and MG references in term of syntactic position.

\textsuperscript{11}We only used Misersky et al. scores when our noun phrases matched perfectly with their own tokens, which means that we only covered 49% of the total of MG (N = 142, total = 290).

\textsuperscript{12}There was also one occurrence at 0.72, le maître ‘the primary school teacher’. But it has not been counted in the overall score since it was removed from the final corpus – authors being two male and a female linguists.
<table>
<thead>
<tr>
<th>Subject</th>
<th>Object</th>
<th>Other</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F</strong></td>
<td>117</td>
<td>38</td>
<td>130</td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>824</td>
<td>91</td>
<td>207</td>
</tr>
<tr>
<td><strong>MG</strong></td>
<td>156</td>
<td>79</td>
<td>55</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>1097</td>
<td>208</td>
<td>392</td>
</tr>
</tbody>
</table>

**Table 13**: Distribution of grammatical functions according to social and ‘generic’ gender

<table>
<thead>
<tr>
<th>Agent</th>
<th>Experiencer</th>
<th>Non-agent</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F</strong></td>
<td>73</td>
<td>37</td>
<td>175</td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>421</td>
<td>225</td>
<td>476</td>
</tr>
<tr>
<td><strong>MG</strong></td>
<td>85</td>
<td>36</td>
<td>169</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>579</td>
<td>298</td>
<td>820</td>
</tr>
</tbody>
</table>

**Table 14**: Distribution of thematic roles according to social and ‘generic’ gender

**Figure 6**: grammatical functions within gender

To further probe the grammatical relationship between ‘generic’ masculines and ‘true’ masculines, we built generalized linear mixed effects models in R (lme4) with author (N=41) as random effect, grammatical function (subject vs non-subject) as dependent variable and gender (F, M, MG) as a fixed effect. If MGs show the same reference patterns as Ms, they should be significantly different from Fs in terms of grammatical function, but not necessarily different from Ms. The results of the statistical analysis are shown in Table 15.
|                | Estimate | Std, Error | z value | Pr(>|z|) |
|----------------|----------|------------|---------|----------|
| (Intercept)    | 0.3750   | 0.2126     | 1.764   | 0.07772  |
| Females        | -0.5676  | 0.1983     | -2.862  | 0.00421 **|
| Males          | 0.9869   | 0.1631     | 6.051   | 1.44e-09 ***|

Table 15: Fixed effects of the generalized linear mixed model. Intercept : MG, non-subjects

These results show that, in term of grammatical functions production, MG are significantly different that male referring noun phrases, while they are significantly less likely to be non-subjects than female referring noun phrases. Figures 6 and 7 also show that MGs are actually not similar to true male referring noun phrases in terms of their syntactic and thematic distribution; therefore, in our corpus, they most likely do not have a male bias.

3.5.1 Discussion

It is striking that, in our corpus, male referring noun phrases actually stand out. Both MG and females arguments are used almost in the same way: even though MGs are more frequently used as subjects than non-subjects, these categories overlap. We see the same pattern regarding thematic roles: only male arguments embody more frequently agentive and experiencer roles than non-agentive ones; that is to say, MGs are not more likely to be experiencers or agents than non-agents. In light of previous research on the interpretation of MGs, these patterns are surprising: in production, MGs and socially masculine noun phrases are not alike.

We would like to suggest two (non-exclusive) hypotheses relying on three different approaches to explain this puzzling production/interpretation asymmetry. The first possibility is that this dichotomy between the production and the interpretation of MGs in French is similar to asymmetry that Kehler & Rhode (2015) found for pronoun interpretation/production depending on implicit causality verbs. Implicit causality (IC) verbs are transitive predicates that create a bias for attributing causality to one of its arguments. Following Stevenson et al. 1994, Kehler & Rhode observed that when participants were asked to complete continuations containing a pronoun after a verb like detested (12a), they predominantly interpreted the pronoun as referring to the object, thus, showing that detested is an object-biased IC verb in interpretation.

(12) a. Alex detested Camille. She__________.
    b. Alex detested Camille. ____________.

However, when participants were asked to provide their own continuation (12b), they predominantly used pronouns that referred to the subject. In other words, in the same way that les nageurs has a masculine bias in interpretation that disappears in production, a sentence like Alex detested Camille shows an object causality bias in interpretation, that is not found in production. However, future experimental studies are necessarily to see how close the parallel between IC verbs and grammatical gender should be drawn.

A second hypothesis to explain the observed production/interpretation asymmetry could be related to the specific register that syntactic articles are written in. Gygax et al. (2012) studied
to what extent French speakers allowed a clearly female denoting noun phrase, like *une soeur* ‘a sister’, could be a member of a group denoted by a generic masculine, such as *les musiciens* ‘the musicians’. In the first part of the experiment, no special guidelines were given and participants were much less likely to agree that the referent of a female denoting noun phrase could be a part of the denotation of a generic masculine than the referent of a male denoting noun phrase and, when they did agree, their took much longer to do so with female referents. In the second part of the experiment, Gygax et al. ‘reminded’ participants of the prescriptive grammatical rule that masculines can have a gender neutral ‘generic’ interpretation. After these normative instructions, participants had less trouble including women in groups denoted by generic masculines and response times were shorter. Since our corpus is not made up of spontaneous speech, and in fact is constituted of highly formal academic writing, we hypothesize that authors are relying on this prescriptive rule (masculine noun phrases have gender neutral reference) when they construct example sentences like (11).

4. **A study on lexical choices.**

Now that we have observed the male bias in term of grammatical position and form, we briefly investigate the content of these examples with gendered noun phrases. Just like in the American articles, female and male referring noun phrases are not related to the same actions or interests and do not have the same jobs. The breakdown of lexical choices in our corpus is shown in Table 16. In what follows, we will comment on a few themes that stand out in this table; however see Richy (2018) for a more complete discussion.

<table>
<thead>
<tr>
<th></th>
<th>Women</th>
<th></th>
<th>Men</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td>118</td>
<td>32.0%</td>
<td>Other</td>
<td>933</td>
</tr>
<tr>
<td>Family</td>
<td>63</td>
<td>17.1%</td>
<td>Family</td>
<td>120</td>
</tr>
<tr>
<td>Success</td>
<td>1</td>
<td>0.3%</td>
<td>Success</td>
<td>71</td>
</tr>
<tr>
<td>Friendship and sympathy</td>
<td>0</td>
<td>0.0%</td>
<td>Friendship and sympathy</td>
<td>57</td>
</tr>
<tr>
<td>Cleverness and culture</td>
<td>21</td>
<td>5.7%</td>
<td>Cleverness and culture</td>
<td>106</td>
</tr>
<tr>
<td>Stupidity</td>
<td>1</td>
<td>0.3%</td>
<td>Stupidity</td>
<td>38</td>
</tr>
<tr>
<td>Employment</td>
<td>17</td>
<td>4.6%</td>
<td>Employment</td>
<td>75</td>
</tr>
<tr>
<td>Appearance</td>
<td>44</td>
<td>12.0%</td>
<td>Appearance</td>
<td>40</td>
</tr>
<tr>
<td>Romance</td>
<td>60</td>
<td>16.3%</td>
<td>Romance</td>
<td>69</td>
</tr>
<tr>
<td>Violence</td>
<td>38</td>
<td>10.3%</td>
<td>Violence</td>
<td>124</td>
</tr>
<tr>
<td>Household work</td>
<td>4</td>
<td>1.0%</td>
<td>Household work</td>
<td>16</td>
</tr>
<tr>
<td>Alcohol</td>
<td>1</td>
<td>0.3%</td>
<td>Alcohol</td>
<td>19</td>
</tr>
<tr>
<td>Cars</td>
<td>0</td>
<td>0%</td>
<td>Cars</td>
<td>8</td>
</tr>
</tbody>
</table>
Strength and sport | 1 | 0.3% | Strength and sport | 10 | 0.6%
|---|---|---|---|---|---|
Total | 369 | 100%\(^{13}\) | Total | 1686 | 100%\

Table 16: Category of predicate

Family. Table 17 shows the role repartition for each social gender, when family roles were explicit. Despite there being far fewer references to women in our corpus, they appear much more frequently in family oriented examples.

<table>
<thead>
<tr>
<th></th>
<th>Women</th>
<th></th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wife</td>
<td>10</td>
<td>Husband</td>
<td>0</td>
</tr>
<tr>
<td>Sister</td>
<td>39</td>
<td>Brother(s)</td>
<td>14</td>
</tr>
<tr>
<td>Mother</td>
<td>9</td>
<td>Father</td>
<td>29</td>
</tr>
<tr>
<td>Daughter</td>
<td>1</td>
<td>Son</td>
<td>3</td>
</tr>
<tr>
<td>Grand-mother</td>
<td>1</td>
<td>Grand-father</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>Total</td>
<td>46</td>
</tr>
</tbody>
</table>

Table 17: Explicit noun phrases referring to family roles

Success and Occupations. When men are related to family topics, examples also carry another meaning, not fully directed to the family. Instead, fathers, sons and brothers are often related to success, culture or sympathy.

(20) Mon père, c’est un grand homme.

*My father is a great man.*

(Chevalier, J-C. Langue française, n°1, 1969. pp. 82-92)

This type of lexical choice is probably the most significant in term of asymmetry between men and women. We gathered under this label every example referring to wealth, talent, or when réussir/réussite ‘to succeed/success’ were overtly used. Overall, 71 examples refer to men, whereas only one example refers to a woman (21).

(21) *Jean est insatisfait que Marie ait réussi.*

*Jean is dissatisfied that Marie succeeded.*

(Picabia, L. Langue française, n°11, 1971. pp. 91-101)

On top of ungrammaticality, this sentence does not even make Marie the topic. Jean occurs in first position, while Marie is embedded in a sub-clause that gives the reason of Jean’s dissatisfaction.

\(^{13}\) In rounding up the percentages, the exact total is 100.2, but we chose to keep these rounded up results for a more convenient reading.
Table 18 gives the details of the occupations described in our corpus, as well as their occurrences. Just like in the American studies, job names are fairly divided according to stereotypical gendered positions. Women do not have powerful positions such as president, doctor or king, and if men are related to manual labour, then it is highly led by ‘manly’ stereotypes of manual labour: woodcutting, hunting, collier.

<table>
<thead>
<tr>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actress</td>
<td>Archbishop</td>
</tr>
<tr>
<td>Maid</td>
<td>Woodcutter</td>
</tr>
<tr>
<td>Housekeeper</td>
<td>Businessman</td>
</tr>
<tr>
<td>Dressmaker</td>
<td>Singer</td>
</tr>
<tr>
<td>Nurse</td>
<td>Collier</td>
</tr>
<tr>
<td>Prostitue</td>
<td>Hunter</td>
</tr>
<tr>
<td>Fashion designer</td>
<td>President</td>
</tr>
<tr>
<td>Childminder</td>
<td>Bookseller</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

Table 18: Occupations and their number of occurrences

<table>
<thead>
<tr>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor</td>
<td>2</td>
</tr>
<tr>
<td>Primary school teacher</td>
<td>2</td>
</tr>
<tr>
<td>Teacher</td>
<td>1</td>
</tr>
<tr>
<td>King</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

**Romance.** There are 50 examples involving women and 63 involving men in terms of ‘romance’. Most of our examples involve female and male arguments, displaying heterosexual relationships. 11 examples also suggest male homosexual relationships, like (26c); however, lesbian relationships are nonexistent in these articles. In other words, women do not exist – in term of relationships – without men, whereas men do exist on their own.


   *Pierre loves Jeanne.*
   
   (Dubois J. Langue française, n°1, 1969. pp. 49-57)

   b. Elle court après Paul.

   *She chases Paul.*
   
   (Leeman, D. Langue française 2008/1 (n° 157), pp. 5-19)

---

14Singer and collier co-occurred in the same example, ranged in three ways (Picabia 1971):
Jean est (chanteur + charbonnier) ‘Jean is (singer + collier)’.
Jean est un (chanteur + charbonnier) ‘Jean is a (singer + collier)’.
*Jean est très (chanteur + charbonnier) ‘Jean is very (singer + collier)’

In total, there are 27 examples using job names for men, not 30.

c. Jean aime Pierre.
   *Jean loves Pierre.*
   (Dubois J. Langue française, n°1, 1969. pp. 49-57)

d. Marie est aimée de (par) Pierre.
   *Marie is loved by Pierre.*
   (Stéfanini, J. Langue française, n°11, 1971. pp. 110-125)

Regarding marriage, Marie is either 'old enough to get married' (6 times) and Léa is getting married with Max twice. There is also an example in which Pierre is against a woman’s marriage.

(29)  

a. Marie est en âge de se marier.
   *Marie is old enough to get married.*
   (Leclère, C. Langue française, n°11, 1971. pp. 61-76)

b. Ma mère me dit : « Écoute, Michèle, tu vas pas garder ça jusqu'à ton mariage.
   *My mother tells me: « Well, Michèle, you will not keep this until your wedding.»*
   (Sumpf J. Braun H. Langue française, n°5, 1970. pp. 70-85)

c. Le maire a marié Max (et + avec + à) Léa.
   *The mayor married Max (and + with + to) Léa.*
   (Marque-Pucheu, C. Langue française 2008/1 (n° 157), pp. 74-105)

d. Pierre s’oppose à ce qu’elle se marie.
   *Pierre is opposed to her getting married.*
   (Bat-Zeev Shyldkrot, H. Langue française 2008/1 (n° 157), pp. 106-122)

On the other hand, men give their consent or disagree with a marriage more often than they actually get married (5 occurrences vs 1).

(30)  

a. Il consent à ce que l’on se marie.
   *He agrees with us getting married.*
   (Leeman, D. Langue française 2008/1 (n° 157), pp. 5-19)

b. *Il consent à que l’on se marie.
   *He agrees us getting married.*
   (Leeman, D. Langue française 2008/1 (n° 157), pp. 5-19)

c. Pierre s’oppose à son mariage.
   *Pierre is opposed to his/their wedding.*
   (Bat-Zeev Shyldkrot, H. Langue française 2008/1 (n° 157), pp. 106-122)

d. Luc s’oppose à ce que l’on déclare les fiançailles.
   *Luc is opposed to the fact that we announce the engagement.*
   (Bat-Zeev Shyldkrot, H. Langue française 2008/1 (n° 157), pp. 106-122)

5. Conclusion

In this paper, we have presented a quantitative and a qualitative study on the distribution of two social genders in constructed examples in syntax articles in French. Drawing our inspiration from Macaulay and Brice (1997) and Pabst et al (2018), we have shown that French
linguistics, just like its American counterpart, displays gender biases. Male reference is far more frequent than female reference across the board – 1654 occurrences vs 368 –, there is a subject/non-subject asymmetry – men are more likely to be in a subject position – and a significant effect of thematic roles – men are more likely to be agents and experiencers than women –, but there is no effect of author gender nor publication date. To explain the grammatical patterns, we argued that, in our corpus, human discourse topics are predominantly male. Men cover 30% of the whole corpus – while women appear only 7% of the time –, and 82% of the female-male corpus. Inasmuch as we also found a significant effect on whether arguments were referred to as a pronoun or a noun phrase – male referents being significantly more likely to be pronouns than females –, we suggested that the pattern was expected since subjects are more likely to be referred to via a pronoun and pronouns are more likely to be discourse topics than full noun phrases.

Additionally, since French is a grammatical gender language where masculine gender can also be intended as ‘generic’, we looked at the behaviour of these particular noun phrases. We compared them to female and male arguments in term of grammatical functions and thematic roles, we found that in production, they were different than true masculines: more likely to be non-subject and less likely to be experiencers. Consequently, in our corpus, men stand out according to any measure: number of occurrences, grammatical functions, thematic roles, discourse topics and even from their own grammatical gender since generic masculines (still referring to human beings) did not display the same patterns as them. Since psycholinguist research showed that in term of interpretation, these generic masculines trigger a socially masculine interpretation, we also hypothesised that there is an asymmetry between what is intended as ‘generic’ in production and in interpretation. Further investigations on that specific asymmetry seem necessary to understand processes involved in the uses of these particular masculines.

Finally, we analysed the content of our corpus according to different categories and stereotypes – especially family, success, employment and romance. We showed that women and men are not related to the same topics, and even when they are – family or romance for instance – authors did not rely on the same lexical choices to refer to men and women, hence reinforcing the male/female dichotomy built by the society we live in. As with Macaulay & Brice (1997), we hope this study will help readers realize how important stereotypes are within our society, and that, even though they are challenged more and more often nowadays, they strongly remain. Changing the way we construct examples may be a start in changing social gender roles in general. We suggest that following the “Guide pratique pour une communication publique sans stéréotype de sexe” published by le Haut Conseil à l’Égalité entre les femmes et les hommes in 2015\textsuperscript{16} is a good start to break the vicious circle.

\textsuperscript{16} Available at http://www.haut-conseil-egalite.gouv.fr/IMG/pdf/hcefh_guide_pratique_com_sans_stereo_VF_2015_11_05.pdf
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