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### 1.3. *Autrice, auteure, auteur?* Between social norms, usage and morphological awareness

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We examined the spontaneous production of feminine counterparts of three categories of job names (“stable” i.e., one attested masculine and one attested feminine form, “unstable” i.e., one attested masculine and more than one feminine form and “epicene” i.e., same form to designate male and female protagonists) by native speakers of French. We identified three possible sources to explain the linguistic irregularity/instability of some feminine forms: the use of language, the linguistic competence of native speakers and their sociological profiles (i.e., social gender, age, profession, territory). A pen and paper questionnaire collected data from 94 participants and revealed that a third of the produced forms totally resist to feminization confirming the male bias described in the previous literature (e.g., Gygax & Gabriel, 2008). Moreover, our data clarifies that the male bias effect leads to a conflict between male social norms and participant’s awareness of the current political trend to make women more visible in society.

Keywords: job nouns, gender stereotypes, word production, speaker profile

#### 1. Introduction

French is a gendered language with two values, masculine or feminine, and noun’s gender can be formally marked using morphological operations: 1) inflection which refers to grammatical aspects of word construction assigning number, gender and tense (e.g., *ami*, *amie*, ‘friend<sub>Masc</sub>, friend<sub>Fem</sub>’) or 2) derivation which is the morphological process of word creation by combining a base and affixes (e.g., *acteur*, *actrice* ‘actor, actress’). However, despite this binary system, masculine is considered as unmarked and rarely explained morphologically (see Michel, 2016: 34-35), characteristics that confer to masculine nouns a prominent role, a phenomenon which is not without consequences at many linguistic and sociological are in line with the conclusions of Gygax et al. (2021): levels (see Roché, 1992; Abbou, 2011 for an analysis on French, see also Corbett, 2014 for complementary perspectives on gender systems). Noun’s gender can also be expressed by the semantic context as it is the case for ‘epicene’ nouns, invariable forms whose gender denote humans of either sex like for example for the nouns *juge*, *ministre*, *linguiste*, *gynécologue*, *detective*, *professeur* ‘judge, minister, linguist, gynecologist, detective, professor’ that are employed for both male and female protagonists. As a consequence, sex is expressed in text and discourse by using a masculine or a feminine pronoun (e.g., *le juge*, *la juge* ‘the<sub>Masc</sub> judge, the<sub>Fem</sub> judge’), another gendered noun (e.g., *Monsieur le juge*, *Madame le juge* ‘Mr judge, Ms judge) or both (e.g., *Monsieur le juge*, *Madame la juge*).

When nouns denoting occupational terminology and social titles are considered, the gender issue becomes more complex as psychological as well as sociolinguistic factors come into play in gender assignment. While the majority of job/role nouns can be categorized as ‘stables’ i.e., when both masculine and feminine forms co-exist in synchrony (e.g., *serveur-serveuse* ‘waiter-waitress’) others can be classified as ‘instable’ i.e., more than one feminine forms co-exist synchronically (e.g., *auteur* => *autrice*, *auteure* ‘writer’<sub>Masc</sub> => ‘writer’<sub>Fem1</sub>, ‘writer’<sub>Fem2</sub> despite

the existence of an attested feminine form in diachrony<sup>1</sup> and the possibility to apply a current morphological rule resulting from the analogy with other morphologically similar forms like for example, the pair *acteur-actrice*).

At the text level, when gender and number features are crossed, the masculine forms occupy two syntactic functions: “generic” and “specific” while the feminine ones, only the feminine “specific” function. The generic function results from the explicit grammatical rule according to which the masculine prevails over the feminine at the plural form whatever the ratio of males and females<sup>2</sup>. The specific function is inherent to the noun gender.

- (1) a. le *commerçant* <sub>Masc Sing</sub> *est toujours content durant les fêtes de Noël*  
‘the trader is always happy during Christmas holidays’  
b. la *commerçante* <sub>Fem Sing</sub> *est toujours contente durant les fêtes de Noël*  
‘the trader is always happy during Christmas holidays’  
c. les *commerçants* <sub>Plur</sub> *sont toujours contents durant les fêtes de Noël*  
‘the trader are always happy during Christmas holidays’

Examples in (1) illustrate that while the masculine predicate in (a) and the feminine one (b) undoubtedly refer to a man and a woman respectively, the plural form in (c) is generic and use the masculine by default to designate either men only or a group of men and women. And despite, “guidelines on how to avoid the use of the masculine only in official announcements, the masculine is still commonly used as a generic in spoken as well as in written language » as highlighted (p. 465) by Gygax et al. (2008) among others.

### 1. Factors of variation in feminine role nouns

Beyond the historical sex division in labor and the political/sociological issues and consequences of its evolution through the institutional ‘feminization’ of language (see among others, Abbou, 2011, 2020; Burr, 2012; Gabriel & Gygax, 2016; Pérez et al., 2019; Yaguello, 2002) or its ‘de-masculinization’ (Viennot, 2014), the linguistic instability of some feminine role nouns such as job titles can indeed have multiple origins. Three factors of variation can be identified: The first is the everyday use of multiple forms by native speakers of “instable” feminine nouns in contrast with “stable” and “epicene” forms to design job’s occupation. In a recent report (2019), the Académie Française, the French institution fixating the rules governing the language use, has characterized this issue as a ‘current linguistic instability’ and declared that *Les tentatives de modification des usages restent hésitantes et incertaines, sans qu’une tendance générale se dégage* ‘Attempts to modify uses remain hesitant and uncertain, without any tendency general emerges’ (p. 2). Consequently, she recommends that *Il convient de laisser aux pratiques qui assurent la vitalité de la langue le soin de trancher: elles seules peuvent conférer à des appellations nouvelles la légitimité dont elles manquaient à l’origine* ‘it should be left to the practices that ensure the vitality of the language to decide: they alone can confer

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<sup>1</sup> The CNRTL (French National Center of Text and Lexical Resources, <https://www.cnrtl.fr>) contains a lexical entry for *autrice* and gives the following definition: n.f. LITT. MÉTIER ‘JOB’ “femme qui fait profession d’écrire des oeuvres littéraires” ‘A woman whose profession is to write literary works’. It also precises its date of apparition in different texts from the XVIIIe century. See Evain (2012) for a History of *Autrice* throughout the centuries.

<sup>2</sup> According to *Le Bon Usage* (Grevisse & Goosse, 2007) « Si les donneurs ne sont pas du même genre, le receveur se met au genre indifférencié, c’est-à-dire au masculin » ‘If the donors are not of the same gender, the recipient puts to the undifferentiated gender, i.e. to the masculine’ (p. 555, §442 a.). See also Michel (2016) for other grammatical sources.

on new names the legitimacy they originally lacked' (p. 7). The choice of the 'stable' feminine forms would then belong to the native speakers in correlation with the morphosyntactic rules of French that define word formations. However, these rules are not only explicitly enunciated by the grammar of a language but also constitutes an implicit linguistic competence of the native speakers of a language in their potential awareness of the systematic correspondences between form and meaning (see Booij, 2018). Consider the following pairs of masculine and feminine job nouns in French:

(2)	a. <i>acteur</i>	<i>actrice</i>	'actor <sub>Masc</sub> actress <sub>Fem</sub> '
	b. <i>créateur</i>	<i>créatrice</i>	'creator <sub>Masc</sub> creator <sub>Fem</sub> '
	c. <i>lecteur</i>	<i>lectrice</i>	'reader <sub>Masc</sub> reader <sub>Fem</sub> '
	d. <i>réalisateur</i>	<i>réalisatrice</i>	'director <sub>Masc</sub> director <sub>Fem</sub> '
	e. <i>auteur</i>	<i>autrice</i>	'author <sub>Masc</sub> author <sub>Fem</sub> '
(3)	a. <i>vendeur</i>	<i>vendeuse</i>	'seller <sub>Masc</sub> seller <sub>Fem</sub> '
	b. <i>coiffeur</i>	<i>coiffeuse</i>	'hairdresser <sub>Masc</sub> hairdresser <sub>Fem</sub> '
	c. <i>blanchisseur</i>	<i>blanchisseuse</i>	'launderer laundress'
	d. <i>stripteaser</i>	<i>stripteaseuse</i>	'stripper <sub>Masc</sub> stripper <sub>Fem</sub> '
	e. <i>éleveur</i>	<i>éleveuse</i>	'breeder <sub>Masc</sub> breeder <sub>Fem</sub> '
	e. <i>professeur</i>	<i>professeuse</i>	'professor <sub>Masc</sub> professor <sub>Fem</sub> '

The left and the right columns are related by systematic form-meaning relationships: all masculine words ending in *-(a)teur*, take either the end *-(a)trice* or *-euse* or in their feminine forms and all these words share the meaning 'someone whose job consists in V'. Still while (a.), (b.), (c.), (d.) in (2) and (3) are relatively stables in language use, examples (e.) are definitely not. This last aspect exemplifies a second level of variation: The linguistic competence of native speakers should be determined by the morphological construction rules which are supported by their morphological awareness. From a linguistic point of view, if the suffix *-eur* is considered, it serves in French to form substantive nouns designating human agents. In line with Fradin (2003), all the lexemes given in (1) follow a construction rule according to which the construction of a nominal lexeme deverbalized from the suffix *-eur* requires a verb base that has an argument structure agentive, i.e., the verb base must have an agent so that it can receive the suffix *-eur*. The natural skill of the native speakers to construct word forms in accordance with the general morphological rules of the language results from their morphological awareness, defined by Carlisle (2000) as the cognitive ability to perceive words' structure and to manipulate the smallest units of meaning in language. Accordingly, any given language should only include well-formed and stable words and exceptions, incorrectly formed words could not be observed. Still, as pointed out by Le Draoulec and Perry-Woodley (2022), many 'incorrectly' formed words are attested in dictionaries as well as in language uses, despite the violation of the rule<sup>3</sup>, suggesting thus that social and institutional contexts impact the linguistic use. Moreover, Abbou precises that "Some irregularities appear between the uses of different writers and sometimes within the use of the same writer" (2011: 56), a behavior

<sup>3</sup> Michel Roché (cited by Le Draoulec & Perry-Woodley, 2022: 212) mentions the example of *bougeoir* 'candlestick' and *glissière* 'slider' (*-oir* selecting in principle verbal bases and *-ier* nominal bases, we should say *bougier* and *glissoire*); or *romantisme* 'romanticism', which does not respect the integrity of the formants (we should say – and it has been said – *romanticisme*, like *catholicisme* 'catholicism', since *romanticisme* is to *romantique* 'romantic' what that *catholicisme* is to *catholique* 'catholic').

that illustrates the cognitive dissonance between the natural linguistic competence of the native speaker (supported by its morphological awareness) and its difficulty to feminize some nouns (such as nouns like *écrivaine* for example, see Le Draoulec & Perry-Woodely, 2016 for a discussion) in order to make women more visible in text and discourse (see Gygax, Gabriel and Zufferey, 2019 for a discussion). Usage-based theory that considers language as embodied and social behavior (Bybee & Beckner, 2010; Tomasello, 2003; Ellis, 2002) highlights the fact that usage, roughly defined in terms of exposition to linguistic structures, determines the mental representations coded in long term memory by means of general cognitive mechanisms (exemplar-based, rational, associative learning). As a consequence, given the recent phenomenon of text and discourse feminization, it is not surprising to observe that the normative use of the masculine induces such irregularities in speaker's use and perception of the feminine forms. Given the weight of the social world and the political influences in the process of feminization of language, we identified a third possible factor of variation, that is the speakers' sociological profile defined by social gender, age, profession and territory that can thus potentially influence the mental representations of feminine nouns and their cognitive processing.

## **2. The cognitive processing of the gender of role nouns**

Studies addressing both the grammatical issue and the social issue on gender processing have developed very recently (notably in French with the work of Houdebine, 1998, see also Greco, 2014 for a review) and despite certain attempts to rethink the traditional conceptions of grammatical gender, in correlation with the beliefs and representations that underlie them (see the PhD thesis by Michel, 2016 for example), the speaker behavioral dimension – from a psychological perspective - remains marginal. In the field of the psycholinguistics, some authors took up the grammatical gender issue as a central challenge for our cognitive system. Starting from the cognitive theories in reading comprehension (e.g., Van Dijk & Kinstch, 1983), they explored through numerous behavioral studies how noun gender coded in long-term memory interferes with sentence processing as an inferencing modifier of the construction of the mental representation of text. More precisely, at the text level, readers construct their meaning mental representation by combining their world knowledge (acquired from their reading past experience) to the text knowledge (carried by the online sentence processing) (see for example Kinstch's construction-integration model, 1988).

However, when noun's gender is not morphologically marked (as it can be the case for plural and singular forms in languages such as French or English), it has been shown that 1) readers cannot suppress the activation of gender stereotypes associated with social role nouns (i.e., the fact for example that in a text containing the role name *surgeon*, the masculine interpretation dominates as the default value) in both online and offline text processing (e.g., Reynolds, Garnham & Oakhill, 2006), 2) the specific meaning of masculine forms precedes the generic interpretation (i.e., when a role term like *singers*<sub>NeutralStereotype</sub> is paired with a kinship term like *brother*<sub>Masc</sub> or *sister*<sub>Fem</sub>, Gygax and Gabriel (2008) found that the male specific meaning overrides both generic and female interpretations) 3) this male interpretation bias remains activated despite explicit instructions given to the participants to consider the alternative meaning (i.e., linking masculine form to female referent is more difficult than masculine form to male referents, Gygax et al., 2012), 4) the use of gender-fair forms (i.e., the symmetric and



equal linguistic treatment of women and men using complete double e.g., *joggeurs et joggeuses* ‘joggers<sub>MASC</sub> and joggers<sub>FEM</sub>’, or contracted forms *joggeur.euses* ‘joggers<sub>MASC.FEM</sub>’) increases participants’ perceived percentage of women in role nouns when compared to the masculine form (e.g., Tibblin et al., 2022) and 5) the use of gender-neutral word forms (e.g., *musicians* by opposition with the gendered role name *engineers*) affects French readers’ gendered associations (e.g., *David-musicians, Lea-musicians vs. David-engineers, Lea-engineers*) by reducing the male interpretation bias (Kim et al., 2022). As a consequence, these findings strongly suggest an interaction between word perception and social representation of role names.

Taken together, these findings support the prevalence of the specific meaning of the masculine form over the feminine and the generic ones in a durable fashion at the text level, and at the word level and its early activation as the default value (see Gygax et al., 2021 for a review on the “male bias” in mental representations of gender, see also Burnett & Pozniak, 2021 for its political dimensions). Consequently, when processing texts, readers automatically process the gender of role nouns and include their gender stereotypicality (i.e., the degree to which readers believe or expect a role to be held by a woman or a man, see Gabriel et al., 2008 for norms of gender perception of role names) as part of their mental representation of the text.

### **3. Producing feminine job nouns in a word association experiment**

While psycholinguistic studies on grammatical gender mainly focused on word perception, finding a relationship between the generic function of masculine and the male bias (e.g., Gygax & Gabriel, 2008; Lévy et al., 2014; Gygax et al., 2019), we are interested in the present study on how feminine forms of job nouns are spontaneously produced in association with their masculine counterparts. To this end, it focuses on the written production of feminine job names generated from a list of masculine job nouns classified in three categories: 1) nouns for which the feminine counterpart is well attested in synchrony, then we considered it as a ‘stable’ category (e.g., *ouvrier=>ouvrière* ‘worker<sub>MASC</sub>worker<sub>FEM</sub>’), 2) nouns for which more than one feminine form is attested in synchrony or for which the masculine form is used for woman protagonists (still which are not epicene forms), these nouns were labelled as an ‘instable’ category (e.g., *auteur=>autrice-auteure-auteur* ‘writer<sub>MASC</sub>-writer<sub>FEM1</sub>- writer<sub>FEM2</sub>-writer<sub>MASC</sub>) and 3) epicene nouns that do not have a lexical gender (e.g., *juge=>juge* ‘judge<sub>Epicene</sub>’). French speakers with various sociological profiles (i.e., varying in social gender, age, profession and territory) were asked to handwrite the feminine counterpart of each masculine job name written in the given list. For instance, when the written word was *boulangier* ‘baker’ and they had to find the role name for a woman. Written productions were collected through a paper questionnaire. Paper and pencil format was chosen in order to reduce the experimental constraints and to get closer to a natural language situation.

We expected two different findings. Firstly, in line with the previous results found in the experimental literature and under the influence of frequency of use (Bybee, 2006), a male bias should be found through a strong variation of the productions in the instable category with an important percentage of masculine forms among the feminine ones. Secondly, we decided to record the sociological profiles our participant according to 5 dimensions (i.e., social gender, age, profession, territory) because we expected to observe an effect of these profiles in feminine word productions, with a male bias reduced in women and in youngsters participants. In their

social construction of reality (Elder-Vass, 2012), participants under 30 years might be most sensitive to the political aspects relative to language feminization, notably through their social network experience and their growing awareness of the gender fluidity issue. Hence their mental representation could be less gender stereotyped.

### 3.1. Method

#### 3.1.1. Participants

99 individuals participated in this study. Recruitment was done in undergraduate practiced classes and in our private circle. 5 participants had a language other than French as a native language, so their data were removed before the analyses. The data of the remaining 94 participants were analyzed.

The ages of the participants ranged from 18 to 79 years ( $M = 35.5$  years,  $SD = 17.1$  years). In our sample, 67 participants self-identified as having growing up in an urban environment and 28 in a rural area. Participation was not rewarded. We excluded participants over the age of 30 and under the age of 40 to mark a generational difference but also for practical aspects, as 30 is generally an age at which students become employed. Tables 1 and 2 present the other sociological data describing our sample.

Table 1

*Distribution of participants according to their main occupation by gender*

	Students	Employees/Retirees	TOTAL
<b>Women</b>	37	28	65
<b>Men</b>	11	18	29
<b>TOTAL</b>	48	46	94

Table 2

*Distribution of the sample according to their highest academic level*

Participants	Social gender	Mean age	Aca. level	Territory
<b>&lt; 30 years</b> <b>N=53</b> incl. 79.2% of students	38 women 15 men	26.6 years SD 2.9 Range 18-29 years	Baccalaureate or inf.: 32.9% Licence: 56.6% MA/PhD: 11.3%	Urban: 67.9% Rural: 32.1%
<b>&gt;30 years</b> <b>N= 41</b> <b>100%</b> <b>employees</b> incl. 14.6% of retirees	27 women 14 men	51.2 years SD 12.1 Range 39-79 years	Baccalaureate or inf.: 19.5% Bachelor: 19.5% MA/PhD: 61%	Urban: 71.2% Rural: 28.8%

#### 3.1.2. Materials

The experiment consisted of a written list of 68 singular masculine occupational/job names. These masculine nouns were selected from the French lexical database LEXIQUE (<http://www.lexique.org> developed by New et al., 2001) according to two criteria: their

frequency of use by ensuring that these nouns were relatively frequent and familiar ( $M = 20.87^*$  occ./million,  $SD = 42.97$ ) and the three belonging category that we defined in *infra* (i.e., stable, unstable or epicene). These words had an average length of 8.7 letters ( $SD = 1.6$ ). We thus obtained (1) 20 words classified as ‘stable’ masculine-feminine forms, i.e., the masculine has only one feminine counterpart attested in usage and dictionaries for several years (e.g., *ouvrier-ouvrière* ‘worker<sub>Masc</sub>-worker<sub>Fem</sub>’, *coiffeur-coiffeuse*, ‘hairdresser<sub>Masc</sub>-hairdresser<sub>Fem</sub>), (2) 18 masculine words classified as ‘unstable’ masculine-feminine forms, i.e., the masculine can be associated with several feminine forms attested in usage and/or dictionaries (e.g., *auteur-autrice-auteure* ‘author<sub>Masc</sub>- author<sub>Fem1</sub>- author<sub>Fem2</sub>’) and according to variable degrees of semantic interpretation (e.g., *boulangier-boulangère* ‘baker<sub>Masc</sub>-baker<sub>Fem</sub>’, *ambassadeur-ambassadrice*<sup>4</sup> ‘ambassador<sub>Masc</sub>-ambassador<sub>Fem</sub>’) and (3) we integrated 30 epicene occupational names, for which the same form can designate a man or a woman (e.g., *judge, doctor, artist*). The complete list of this linguistic materials with its characteristics is given in Appendix A.1.

### 3.1.3. Procedure

Before experiment onset, participants were informed orally about the conditions of their participation and their data collection. An informed consent form was then provided to them to ensure their free and informed consent to participate in the study.

After a short questionnaire allowing the collection of their sociological data (i.e., age, gender, level of education, place of residence and mother tongue), the participants were given written instructions to produce as spontaneously as possible, without going back and without correcting themselves, the feminine equivalent of a list of singular masculine occupational names. They were told that there was no time limit, that one or more answers were possible and that they could leave the box blank if they didn’t know or didn’t want to give an answer. No intervention by the experimenters or interaction between participants was possible after experiment onset.

### 3.2. Results

A descriptive analysis of the written responses of the 99 participants was performed. Five subjects were excluded from this analysis because French was not their mother tongue<sup>5</sup>. We have reported for each masculine form, the type and the number of occurrences of feminine forms (*Fem forms* i.e., attested feminine forms), the type and number of the other forms (*Other forms* i.e., identical to masculine or unattested forms), the number of no answer (*Nb. of no answer* i.e., blank cell) and we have calculated three proportions in columns % *Fem. Prod* (% of feminine noun productions), % *Identic.* (% of identical forms to masculine ones) and % *blank cells* (% of blank cells). All values (Nb. and %) were calculated relative to the total number of participants (i.e., 94). The productions data collected in each of the 3 categories of nouns (instable, stable, epicene) are respectively presented in Tables 3.a, 3.b and 3.c

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<sup>4</sup> Indeed, despite attested (in usage and in dictionaries) pairs such as *boulangier-boulangère* or *ambassadeur-ambassadrice*, the feminine forms of *baker* and *ambassador* may be perceived in the role of "woman of" rather than the profession itself (see the respective definitions given in the CNRTL, <https://www.cnrtl.fr/definition/boulangère>; <https://www.cnrtl.fr/definition/ambassadrice>).

<sup>5</sup> However, we note here that it would be interesting in another study to compare the data of the non-native speakers with those of the native speakers of French. The productions of these 5 people alone were indeed more related to a morphosyntactic and phonological logic than to a logic of use.



3.2.1. Descriptive analysis of the stable category (i.e., more than one possible feminine form)

Table 3.a

*Production data in the unstable category*

Masc. forms (N = 18)	Fem. Forms (Nb. of occ.)	Other forms (Nb. of occ.)	Nb. of no answer	% fem prod.	% identic.	% blank cells
écrivain	écrivaine (81)	écrivain (13)	0	86.2	13.8	0
proviseur	proviseure(72)	proviseur (11) directrice (1)	0	77.4	11.7	0
chevalier	chevalière(53)	chevalier (27) <b>princesse</b> (1) <b>gente dame</b> (1)	<b>12</b>	64.6	<b>32.9</b>	12.8
ingénieur	ingénieure(73) ingénieuse(3)	ingénieur (15) ingénieuse (2) ingénieuse+ ingénieure (1)	1	81.7	16.1	1.5
plombier	plombière(73)	plombier (15)	6	83.0	17.0	6.4
poète	poè(é)tesse (50)	poète (40) poète+ poétesse (3)	1	53.8	<b>43.0</b>	1.5
maire	mairesse(46)	maire (47) la maire+ mairesse (1)	0	50.0	<b>50.0</b>	0
matelot	matelotte(19) matelote(12) matelonne(1)	matelot (45) matelonne (1)	<b>16</b>	39.7	<b>57.7</b>	17
chef	cheffe(71) cheftaine(1) chefette(1) chefesse(1)	chef (18) directeur (1) cheftaine (1)	0	79.1	19.1	0
enquêteur	enquêteurice(69) enquê(è)teuse(12) enquêteurice(10) enquêteur/e (2) enquêtrisse (1)		0	100.0	0	0
commis	commise (62)	commis (28)	4	66	<b>28.9</b>	4.3
carreleur	carreleuse(74) carreleure (1) carreleure/se (1)	carreleur (15)	3	83.5	16.5	3.2
chercheur	chercheuse(75) chercheure(7) chercheure/euse(7)	chercheur (5)	0	94.7	5.3	0
professeur	professeure(70)	professeur (23) <b>chercheur</b> (1)	0	74.5	<b>24.5</b>	0

soldat	soldate(26) soldat/e(1)	soldat (62)	5	29.2	<b>70.4</b>	5.3
auteur	autrice(43) auteure(26) auteure+ autrice (10)	auteur (14) auteure+ écrivaine(1)	0	85.1	14.9	0
gendarme	gendarmette(22) gendarmesse(1)	gendarme (69) gendarme+ gendarmette (1)	1	24.7	<b>74.2</b>	1.5
préfet	préfète(35) préfette(30) <b>sous-préfète</b> (1) préfette+préfète(2)	préfet (25) <b>sous préfet</b> (1)	1	67.7	<b>26.9</b>	1.5
sapeur- pompier	sapeur-pomprière(9) sapeuse-pompier(5) sapeuse-pomprière (4) sapeuse-pompier(6) sapeure-pompier(2)	sapeur-pompier (62)	6	26.1	<b>70.4</b>	6.4
maçon	maçonne(51) maçone(2) maçonnière(1) maçone (2)	maçon (31)	7	62.1	<b>35.6</b>	7.4
Means (SD)			<b>3.2</b> <b>(4.45)</b>	<b>66.5</b> <b>(22.6)</b>	<b>31.4</b> <b>(22.5)</b>	<b>1.9</b> <b>(5.7)</b>

A descriptive analysis of the so-called "unstable" nouns (cf. Table 3.a), defined as profession names which have an attested masculine form but more than one feminine form in use, reveals: Firstly that 31.4% of the produced forms resist to feminization by reporting the masculine one. In other words, our participants have considered in many cases that these masculine forms as being exclusively masculine, despite their morphological awareness as native speakers, who thus possess strong morphological knowledge and skills. 11 job names among 18 gives a production percentage of identical form that exceeds 25%: *chevalier*, *poète*, *maire*, *matelot*, *commis*, *soldat*, *gendarme*, *préfet*, *sapeur-pompier*, *maçon* 'knight, poet, mayor, sailor, clerk, soldier, policeman, prefect, firefighter, mason'. We can interestingly note that these 11 job names do not always refer prestigious positions, the names *matelot*, *commis*, *soldat*, *maçon* are rarely classified in the top of the profession hierarchy, rather they might reflect the interiorized history of division of labor in which strong physical or social constraints naturally dedicated certain tasks exclusively to men. However, among these forms *poète*, *maire*, *chef*, *gendarme* that have induced both many feminine forms (*poétesse*, *mairresse*, *chefesse*, *gendarmesse*) and identical forms (*poète*, *maire*) could be have considered by some participants as epicenes. Contrary to the other masculine names, these word forms are morphologically simples (i.e., they are not constructed with a base + a suffix) and consequently, in this particular experimental context, the participants did not apply the derivational strategy based on the analysis of the morphological structure of the masculine forms but instead have chosen the epicene option by analogy with the 30 other epicenes present in the experimental list.

Secondly, 66.5% of the produced words in this ‘instable’ category correspond to words marked by a feminine suffix, more or less in conformity with the morphological construction rules of French. For instance, the name *chef* ‘chief’ has induced 4 different feminine productions using four different suffixes: *cheffe*, *cheftaine*, *chefette*, *chefesse* while *enquêteur* ‘investigator’ gave rise to 5 feminine forms *enquêteurice*, *enquê/êteuse*, *enquêtrice*, *enquêteur/e*, *enquêteurisse* alternating 3 suffixes and 5 spellings. This multiplicity of forms well testifies great uncertainty and uneasiness among participants who seem to have experienced an internal conflict between the male social norm, the frequency of use in language and their morphological awareness.

Thirdly, 2% of the masculine forms generated a non-response (i.e., empty cell). This was notably the case for the masculine nouns *chevalier* and *matelot* for which 12 and 16 participants respectively have left an empty cell. This lack of answer does not necessary mean that they considered it as exclusively masculine otherwise they would have written the identical form as it has been the case for a third of the total productions. The attested forms in the dictionary of *chevalière* (that usually designates a ‘signet ring’ as a feminine noun) and of *matelote* (that refers to a feminine name of a cooking recipe) might have blocked the production of these as counterparts of the masculine ones.

Finally, we identified some funny productions to designate the feminine counterpart of masculine role names: *princesse* ‘princess’ and *gente dame* ‘nice lady’ for *chevalier* ‘knight’; *chercheur* ‘researcher’ for *professeur* ‘professor’; *sous-préfet* ‘sub-prefect<sub>Masc</sub>’ and *sous-préfète* ‘sub-prefect<sub>Masc</sub>’ for *préfet* ‘prefect’, that we leave to clinical psychologists for interpretation.

### 3.2.2. Descriptive analysis of the stable category (i.e., more than one possible feminine form)

This category was constituted with 30 masculine job names. In Table 3b., we chose to only present for which a variation in the word production was observed (i.e., as a stable category, we did not include the items that have generated 100% of the expected feminine form). We obtained a set of critical data for a total of 11 masculine forms.

Table 3.b

#### Linguistic data of the stable category

Masc. forms (N=11)	Fem. Forms (Nb. of occ.)	Other forms (Nb. of occ.)	Nb. of no answer	% fem prod.	% identic.	% no answer
aviateur	aviatrice (88) aviateuse (1)	aviateur (3)	2	94.7	3.3	2.1
banquier	banquière (91)	banquier (2)	1	96.8	2.1	1.1
commerçant	commerçante (89)	commerçant (5)	0	94.7	5.3	0
directeur	directrice (92)	directeur (2)	0	97.9	2.1	0
éditeur	éditrice (88) éditeuse (3) éditeure (1)	éditeur (2)	0	97.9	2.1	0
éleveur	éleveuse (86)	éleveur (7) éleveurice (1)	0	91.5	7.4	0
enseignant	enseignante (93)	professeure (1)	0	98.9	0	0

expert	expert (89)	expert (4) expertrice (1)	0	94.7	4.2	0
facteur	factrice (88)	facteur (5) facteure (1)	1	94.6	5.4	1.1
mécanicien	mécanicienne (92)	mécanicien (2)	0	97.9	2.1	0
pharmacien	pharmacienne (92)	pharmacien (2)	0	97.9	2.1.	0
<b>Means</b>			<b>0.3</b>	<b>97.8</b>	<b>2.2</b>	<b>0.4</b>
<b>(SD)</b>			<b>(0.6)</b>	<b>(2.6)</b>	<b>(0.7)</b>	<b>(0.7)</b>

In this ‘stable’ category of stable nouns (cf. Table 3.b), for which the masculine and feminine forms are morphologically marked by a specific suffix and correspond to words attested in both dictionaries and current everyday use, we observe that 2.2% of the productions still resist to the expected feminization of well attested regular feminine form. The resistance operates despite their high frequency of use in language (we only selected in our materials familiar and frequent words, see Appendix A.1) and (2) the regular morphological construction of the corresponding feminine forms, via rules or analogy. For instance, the job names *éleveur* ‘breeder’ and *facteur* ‘postman’ showed this resistance to produce *éleveuse* and *factrice* respectively despite numerous words constructed according to the same morphological rule (e.g., *vendeur-vendeuse* ‘seller<sub>Masc</sub>-seller<sub>Fem</sub>’, *livreur-livreuse* ‘delivery man-delivery woman’, *acheteur-acheteuse* ‘buyer<sub>Masc</sub>-buyer<sub>Fem</sub>’, *acteur-actrice* ‘actor-actress’, *instituteur-institutrice* ‘teacher<sub>Masc</sub>-teacher<sub>Fem</sub>’, *conducteur-conductrice* ‘driver<sub>Masc</sub>-drive<sub>Fem</sub>, etc.). Finally, we collected 2.2% of no-answer restricted the words *aviateur* ‘aviator’, *banquier* ‘banker’ and *facteur* ‘postman’. Given the stable category these words belong to (attested, regular and frequent feminine words) and their internal morphological complexity, it is hard to explain this lack of response, expect in terms of a conflict between interiorized man social norm and language use that some participants have experienced in filling our questionnaire.

### 3.2.3. Descriptive analysis of the epicene category (i.e., the same word form designates both genders)

This category contained 30 items and as for the stable category, we have only analyzed those which gave rise to unexpected answers (i.e., forms other than epicene or no answer). Table 3.c presents the observed data from 11 epicenes.

Table 3.c

#### Linguistic data of the epicene category

<b>Epicene forms (N=11)</b>	<b>Fem. Forms (Nb. of occ.)</b>	<b>Other forms (Nb. of occ.)</b>	<b>Nb. of no answer</b>	<b>% fem prod.</b>	<b>% identic.</b>	<b>% no answer</b>
mécène	mécène(82) mécènesse (1)		11	1.2	98.8	11.7

journaliste	journaliste(90)		4	0	100.0	4.3
ministre	ministre (89)		5	0	100.0	5.3
capitaine	capitaine (91)		3	0	100.0	3.2
dentiste	dentiste (93)	orthodontiste (1)	0	0	98.9	0
politologue	politologue (91)		3	0	100.0	3.2
vidéaste	vidéaste (93)		1	0	100.0	1.5
podologue	podologue (93)		1	0	100.0	1.5
acrobate	acrobate (92)		2	0	100.0	2.1
linguiste	linguiste (92)		2	0	100.0	2.1
médecin	médecin (87)	doctoresse (1)	0	2.1	92.5	0
	<b>médecine (5)</b>	doctoresse en médecine (1)				
architecte	architecte (91)					
	<b>architectrice (3)</b>					
<b>Means</b>			<b>2.7</b>	<b>2.6</b>	<b>99.1</b>	<b>0.4</b>
<b>(SD)</b>			<b>(3.2)</b>	<b>(7.1)</b>	<b>(2.2)</b>	<b>(0.7)</b>

Among the 30 epicene forms (cf. Table 3.c), we note that 3 words (i.e., *mécène* ‘sponsor’, *médecin* ‘doctor’, *architecte* ‘architect’) led 2.6% of our participants to produce feminized forms by suffixation: *mécenesse*, *médecine*, *architectrice* while 9 words induced a no answer for 2.7% of the participants: *mécène*, *journaliste* ‘journalist’, *capitaine* ‘captain’, *dentist* ‘dentist’, *politologue* ‘political scientist’, *vidéaste* ‘videographer’, *podologue* ‘chiropractist’, *acrobate* ‘acrobat’, *linguiste* ‘linguist’.

The production of feminized forms could be due to the production task itself in combination with an effect of the lexicon, which could have forced some participants to create word forms with a feminine suffix. Firstly, *mécène* might have been unfamiliar for some participants and consequently, they apply a morphological rule to produce *mécenesse* by analogy with other similar forms ending with *-e*, like *rude-rudesse* ‘harsh-harshness’, *juste-justesse* ‘just-accuracy’, *robuste-robustesse* ‘robust-robustness’. Secondly, *médecine* and *architectrice* actually exist in both use and dictionaries. As consequence, the production of both *medicine* and *architectrice*, might have been produced because of the lexical availability of (1) a feminine noun designating a science whose object is “the study, treatment, and prevention of diseases” in the case of *médecine* and (2) a feminine adjective which means “that builds in architect” in the case of *architectrice*. However, this adjective being unusual, we can alternatively propose that *architectrice* has been constructed on *architect* either by a semantic-formal analogy with *décoratrice* ‘decorator’ despite an inappropriate theme category (i.e., *décoratrice* is constructed on the verbal base *décorer* ‘decorate’ while *architectrice* includes a nominal base *architecte*) or by merely by the general rule according to which in French, the feminine is built on the masculine, referring thus to a stereotyped knowledge. Finally, 9 items have induced a no response in some participants. All these words (i.e., *mécène*, *journaliste* ‘journalist’, *capitaine* ‘captain’, *dentist* ‘dentist’, *politologue* ‘political scientist’, *vidéaste* ‘videographer’, *podologue* ‘chiropractist’, *acrobate* ‘acrobat’, *linguiste* ‘linguist’) correspond to prestigious professions and a possible explanation could refer to a irresolvable conflict between male social norms and the



current need to feminize the language. Indeed, they could have chosen to consider these words as epicene but they preferred to leave the box empty.

### 3.2.4. Effects of sociological data in feminine word production

In the present experiment, we recorded the sociological profiles of our participants according to 5 dimensions (i.e., social gender, age, profession, territory) because we expected to observe an effect of these profiles in feminine word productions, with a male bias reduced in women and in younger participants. Table 3.d presents the observed data by social gender and age.

Table 3.d

*Proportions (in %) of expected answers in the three categories of job names, classified by social gender (i.e., men or woman) and age (i.e., under and greater than 30 years old).*

		Age < 30, N = 53	Age > 30, N = 41	Total
<b>Women</b>	Epicene	.97	.98	.97
	Unstable	.64	.74	.68
	Stable	.96	.99	.97
<b>Men</b>	Epicene	.98	.97	.98
	Unstable	.62	.64	.65
	Stable	.97	.96	.98
<b>Total</b>	Epicene	.97	.98	
	Unstable	.64	.72	
	Stable	.96	.99	

A Khi square test was applied on these data for the two manipulated variables Social Gender and Age, nevertheless none of the observed values reached significance (all  $\chi^2 < 0$ ). Consequently, contrary to our second hypothesis, we weren't able to observe a significant effect neither by social gender nor by age of our participants.

### 3.3. Discussion

In the present contribution, we examined the spontaneous word productions of feminine counterparts of masculine job names in French. Job names were classified in three categories (i.e., stable, unstable or epicene). Participants were recruited according to various sociological profiles (i.e., social gender, age, profession, territory). We expected to find 1) a male bias in the unstable category as reflecting a conflict between male social norms and language use and 2) an effect of social profiles with a reduced variation in feminine productions in the unstable category in women and younger participants, given their hypothesized greater sensitivity to the current feminization issue.

We examined the productions of 94 participants. The data of the unstable category showed that a third of the produced forms totally resist to feminization. Some of our participants have preferred in many cases to reproduce the masculine form in their answer. As a consequence, it seems that some forms are still considered as being exclusively masculine, despite the morphological awareness of our native speakers. Moreover, we didn't find any significant effect of their social profiles in their productions suggesting that the resistance to the feminization of some professional terms is still deep and concerns the global population in

France, irrespective of their sociological profile. Prestigious jobs induced either the conservation of the masculine form to designate a female protagonist or left no answer. According, such data demonstrate two behaviors: 1) a strong male bias effect which leads speakers to prefer the masculine to the detriment of the feminine, 2) a conflict between male social norms and participant's awareness of the current political trend to make women more visible in society. When the production of feminine forms in the stable category is considered, our data revealed in a very marginal proportion (2.2%) that some participants still preferred to use the masculine form. Also in the epicene category, a small proportion of the observed answers (2.7%) induced no response (i.e., cells remained empty). It means that even in the cases of well attested and familiar words (in both use and dictionaries), a male bias subsists in native speakers of French. Taken together these data suggest that despite almost 40 years of political initiatives in favor of the feminization of profession and role names in French (starting with a commission dedicated to the "vocabulary concerning the activities of women", directed by the writer Benoîte Groult in 1984, see Houdebine-Gravaud, 1998; Burr, 2003), male social norms are still well established in speaker's mind and language behaviors.

In this study, we can point out some biases that may have interfered with the written productions, in particular the lack of counterbalancing of the order of presentation that may have had an effect from one word to another (i.e., *auteur* [author] is positioned close to *aviateur* [aviator] may have influenced the productions). We can also wonder about this production has have produced in speakers. It may have pushed/forced them to produce morphologically marked feminine forms (e.g., *médecin* 'doctor' => *médecine* 'medicine'), maybe because the noun designating the profession is available in the speakers' lexicon (i.e., in the above example: *médecine*). Their productions also reveal the application of the general rule according to which feminine forms are constructed from the masculine ones by adding of a final "e" (e.g., *auteure*, *chercheure*, *professeure*) or a feminine suffix (e.g., *mécenesse*).

Finally, although we used the LEXIQUE database to ascertain the frequency of occurrence of French words and the familiarity of the selected nouns, we did not *a priori* verify whether words were actually known by participants, it thus might possible, although unlikely, that the lack of responses to some items (i.e., empty cells) could be explained in this way.

The richness of these data requires additional qualitative and quantitative analyses that will be carried in a future work. In particular, more fine-grained analyses on the interaction between sociological profiles and written productions will be carried out in order to determine whether one or more of these dimensions have influenced the observed variations. Linguistic analyses will also be pursued to more deeply analyze the morphological structure of some neologisms (i.e., type of constructions and number of morphological operations) or to study the distributional characteristics of the produced forms within French corpus (i.e., web usage, attested lexical frequency, number of phonological and orthographic neighbors of the forms, etc).

#### 4. General Discussion

The psycholinguistic literature postulates the existence of a masculine bias that influences the mental representations of referents, to the disadvantage of feminine names in the titles of professions, roles and titles. We had put forward a hypothesis along the same lines. The

production and the perception of feminine nouns respectively generate significantly different morphological variations and longer reaction times.

The results of our study show that despite an innate morphological awareness in all speakers of French, the attribution and recognition of the feminine gender to French occupational nouns is more variable and more difficult than for the masculine gender. We can argue that these results support and confirm the "masculine bias", especially with regard to the proportions of the production of masculine forms.

Our results support the work done so far and we now aim to collect data on lexical access of masculine, feminine and epicene forms using psycholinguistic paradigms and tasks (e.g., masked priming in association with a semantic decision task) that will allow us record reaction times.

The need to collect experimental data on the lexical access of this category of specific words arose following the work of Gygax and collaborators. These early production and perception data open up a new field of research in the field of psycholinguistics especially in favor of a scientific literature that is embedded in the issues of contemporary social struggles.

Recent debates in the socio-political sphere illustrate the growing interest in research on the impact of gendered language and the need for a more neutral and inclusive language. Yet, little or no work in experimental psychology has illustrated these sociolinguistic movements in the Francophone sphere. In order to establish more precisely the impact of language on mental representations, it would be relevant to conduct further studies on both lexical and semantic representations. Thus, this work is part of a longer-term project and requires further exploration. It would be relevant for example to observe whether there is an effect of other socio-demographic profiles in gender perception. It would also be interesting to extend the research on the specific topic of title names, roles and professions to other gendered languages with gender and number inflections. The study of Beatty-Martínez and Dussias (2019) investigated this issue through physiological measures and demonstrated that knowing one gendered language (e.g., Spanish) influences the brain's perception and linguistic expectations, in a second less or non-gendered language (e.g., English). Future research could thus examine the excitatory or inhibitory nature of the connections linking lexical representations.

The present study in line with previous studies highlight the considerable impact of grammatical gender both in the use of language and in the ideas it conveys within society. These works put to light that the fluctuation of our mental word representations is totally driven by the world reality and its socio-political heritage.

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Final draft V1

## Appendix

### A.1 Grammatical class, frequency and length of masculine words in the three categories of job names

	Word	Grammatical class	Freq. of lexem in movies	Freq. in movies	Number of letters	Expected fem. production
<b>Stable</b>	<i>Agriculteur</i> 'farmer'	NAME	1,06	0,42	11,00	<i>agricultrice</i>
	<i>Animateur</i> 'animator'	NAME	2,72	1,90	9,00	<i>animatrice</i>
	<i>Aviateur</i> 'aviator'	NAME	3,09	1,23	8,00	<i>aviatrice</i>
	<i>Avocat</i> 'lawyer'	NAME	112,69	89,28	6,00	<i>avocate</i>
	<i>Banquier</i> 'banker'	NAME	6,38	4,70	8,00	<i>banquière</i>
	<i>Boulangier</i> 'baker'	NAME	3,00	2,44	9,00	<i>boulangère</i>
	<i>Caissier</i> 'cashier'	NAME	4,32	1,66	8,00	<i>caissière</i>
	<i>Commerçant</i> 'trader, merchant'	NAME	4,34	1,54	10,00	<i>commerçante</i>
	<i>Couturier</i> 'dressmaker'	NAME	3,52	0,56	9,00	<i>couturière</i>
	<i>Danseur</i> 'dancer'	NAME	23,05	5,85	7,00	<i>danseuse</i>
	<i>Directeur</i> 'director'	NAME	64,71	57,65	9,00	<i>directrice</i>
	<i>Éditeur</i> 'publisher'	NAME	8,50	6,84	7,00	<i>éditrice</i>
	<i>Éleveur</i> 'breeder'	NAME	1,82	0,98	7,00	<i>éleveuse</i>
	<i>Enseignant</i> 'teacher'	NAME	3,94	1,63	10,00	<i>enseignante</i>
	<i>Expert</i> 'expert'	NAME	20,14	12,70	6,00	<i>experte</i>
	<i>Facteur</i> 'postman'	NAME	12,26	9,67	7,00	<i>factrice</i>
	<i>Infirmier</i> 'nurse'	NAME	39,56	3,17	9,00	<i>infirmière</i>
	<i>Mécanicien</i> 'mechanic'	NAME	5,81	5,38	10,00	<i>mécanicienne</i>
	<i>Pâtissier</i> 'pastry chef'	NAME	2,37	1,81	9,00	<i>pâtissière</i>
	<i>Pharmacien</i> 'pharmacist'	NAME	3,71	3,19	10,00	<i>pharmacienne</i>
<b>Unstable</b>	<i>Auteur</i> 'author'	NAME	23,52	17,62	6,00	<i>auteure, autrice</i>

	<i>Carreleur</i> 'tiler'	NAME	0,14	0,14	9,00	<i>carreleure,</i> <i>carreleuse</i>
	<i>Chef</i> 'chief'	NAME	205,26	189,79	4,00	<i>cheffe</i>
	<i>Chercheur</i> 'researcher'	NAME	5,74	2,66	9,00	<i>chercheure,</i> <i>chercheuse</i>
	<i>Chevalier</i> 'knight'	NAME	15,91	10,77	9,00	<i>chevalière</i>
	<i>Commis</i> 'clerk, kitchen help'	NAME	2,99	2,99	6,00	<i>commise</i>
	<i>Écrivain</i> 'writer'	NAME	24,57	20,70	8,00	<i>écrivaine</i>
	<i>Enquêteur</i> 'investigator'	NAME	4,06	1,83	9,00	<i>enquêteurice,</i> <i>enquêteuse</i>
	<i>Ingénieur</i> 'engineer'	NAME	21,12	18,92	9,00	<i>ingénieure</i>
	<i>Maçon</i> 'mason'	NAME	3,79	3,48	5,00	<i>maçonne</i>
	<i>Maire</i> 'mayor'	NAME	28,17	27,91	5,00	<i>mairresse</i>
	<i>Matelot</i> 'sailor'	NAME	7,04	4,78	7,00	<i>matelote</i>
	<i>Plombier</i> 'plumber'	NAME	5,85	5,22	8,00	<i>plombière</i>
	<i>Préfet</i> 'prefect'	NAME	7,56	7,42	6	<i>préfète</i>
	<i>Poète</i> 'poet'	NAME	22,65	16,98	5,00	<i>poétesse</i>
	<i>Professeur</i> 'professor'	NAME	98,55	90,02	10,00	<i>professeure</i>
	<i>Provisieur</i> 'principal'	NAME	4,45	4,43	9,00	<i>provisseure</i>
	<i>Soldat</i> 'soldier'	NAME	107,92	52,78	6,00	<i>soldate</i>
<b>Epicene</b>	<i>Acrobate</i> 'acrobat'	NAME	2,34	1,46	8,00	<i>acrobate</i>
	<i>Architecte</i> 'architect'	NAME	9,98	8,39	10,00	<i>architecte</i>
	<i>Artiste</i> 'artist'	ADJ	6,04	4,54	7,00	<i>artiste</i>
	<i>Artiste</i> 'artist'	NAME	40,78	28,00	7,00	<i>artiste</i>
	<i>Astronaut</i> 'astronaut'	NAME	6,45	3,71	10,00	<i>astronaute</i>
	<i>Capitaine</i> 'captain'	NAME	152,69	150,59	9,00	<i>capitaine</i>
	<i>Cineaste</i> 'filmmaker'	NAME	3,56	2,45	8,00	<i>cinéaste</i>
	<i>Comptable</i> 'accountant'	NAME	7,15	6,43	9,00	<i>comptable</i>

<i>Cyclist</i> 'cyclist'	NAME	1,08	0,71	8,00	<i>cycliste</i>
<i>Dentist</i> 'dentist'	NAME	15,40	14,57	8,00	<i>dentiste</i>
<i>Detective</i> 'detective'	NAME	24,61	20,77	9,00	<i>détective</i>
<i>Diplomate</i> 'diplomat'	NAME	3,75	1,98	9,00	<i>diplomate</i>
<i>Gendarme</i> 'constable'	NAME	13,67	5,53	8,00	<i>gendarme</i>
<i>Gymnaste</i> 'gymnast'	NAME	0,35	0,26	8,00	<i>gymnaste</i>
<i>Interprète</i> 'interpreter'	NAME	4,81	4,01	10,00	<i>interprète</i>
<i>Journaliste</i> 'journalist'	NAME	35,29	24,26	11,00	<i>journaliste</i>
<i>Juge</i> 'judge'	NAME	66,45	56,40	4,00	<i>juge</i>
<i>Jurist</i> 'jurist'	NAME	2,57	1,95	7,00	<i>juriste</i>
<i>Libraire</i> 'bookseller'	NAME	2,10	1,67	8,00	<i>libraire</i>
<i>Linguiste</i> 'linguist'	NAME	0,50	0,46	9,00	<i>linguiste</i>
<i>Mécène</i> 'sponsor, patron'	NAME	0,82	0,69	6,00	<i>mécène</i>
<i>Médecin</i> 'doctor, physician'	NAME	140,19	112,35	7,00	<i>médecin</i>
<i>Minister</i> 'minister'	NAME	41,41	38,10	8,00	<i>ministre</i>
<i>Peintre</i> 'painter'	NAME	17,02	13,60	7,00	<i>peintre</i>
<i>Pianist</i> 'pianist'	NAME	5,75	5,52	8,00	<i>pianiste</i>
<i>Podologue</i> 'chiropodist'	NAME	0,05	0,05	9,00	<i>podologue</i>
<i>Thérapeute</i> 'therapist'	NAME	3,67	3,44	10,00	<i>thérapeute</i>
<i>Urgentiste</i> 'emergency doctor'	NAME	0,25	0,25	10,00	<i>urgentiste</i>
<i>Vidéaste</i> 'videographe r'	NAME	0,08	0,07	8,00	<i>vidéaste</i>
<i>Zoologue</i> 'zoologist'	NAME	0,02	0,02	8,00	<i>zoologue</i>



A.2 Observed feminine frequency and length in the three categories of job names

Category	Item presented (M)	Observed F productions	Grammatical class	Freq. of lexem in movies	Freq. of the word in movies	Num. of letters	
<b>Stable</b>	<i>Agriculteur</i> 'farmer'	<i>agricultrice</i>	NAME	1,06	0,01	12	
	<i>Animateur</i> 'animator'	<i>animatrice</i>	NAME	2,62	0,69	10	
	<i>Aviateur</i> 'aviator'	<i>aviatrice</i>	NAME	3,09	0,16	9	
		<i>aviatrice</i>			NA	NA	
		<i>aviateuse</i>			NA	NA	
	<i>Avocat</i> 'lawyer'	<i>avocate</i>	NAME	112,69	7,56	7	
	<i>Banquier</i> 'banker'	<i>banquière</i>	NAME	6,38	0,33	9	
	<i>Boulangier</i> 'baker'	<i>boulangère</i>	NAME	3	0,47	10	
	<i>Caissier</i> 'cashier'	<i>caissière</i>	NAME	4,32	2,03	9	
	<i>Commerçant</i> 'trader, merchant'	<i>commerçant</i>	NAME	4,34	0,11	11	
		<i>e</i>					
	<i>Couturier</i> 'dressmaker'	<i>couturière</i>	NAME	3,52	2,45	10	
	<i>Danseur</i> 'dancer'	<i>danseuse</i>	NAME	23,05	10,05	8	
	<i>Directeur</i> 'director'	<i>directrice</i>		64,71	4,55	10	
	<i>Éditeur</i> 'publisher'	<i>éditrice</i>		NA	NA		
		<i>éditeuse</i>		NA	NA		
		<i>éditeuse</i>		NA	NA		
	<i>Éleveur</i> 'breeder'	<i>éleveuse</i>	NAME	1,82	0,04	8	
		<i>éleveuse</i>		NA	NA		
		<i>élevatrice</i>		NA	NA		
<i>Enseignant</i> 'teacher'	<i>enseignante</i>	NAME	3,94	0,45	11		
	<i>professeuse</i>	NAME	98,55	0,17	11		
<i>Expert</i> 'expert'	<i>experte</i>	ADJ	7,66	3,45	7		
	<i>expertrice</i>		NA	NA			
<i>Facteur</i> 'postman'	<i>factrice</i>	NAME	12,26	0,06	8		
	<i>facteuse</i>		NA	NA			

	<i>Infirmier</i> 'nurse'	<i>infirmière</i>	NAME	39,56	27,14	10
	<i>Mécanicien</i> 'mechanic'	<i>mécanicien</i> <i>ne</i>	NAME	5,81	0,05	12
	<i>Pâtissier</i> 'pastry chef'	<i>pâtissière</i>	NAME	2,37	0,41	10
	<i>Pharmacien</i> 'pharmacist'	<i>pharmacien</i> <i>ne</i>	NAME	3,71	0,35	12
<b>Unstable</b>	<i>Auteur</i> 'author'	<i>autrice</i>		NA	NA	
		<i>auteure</i>	NAME	23,52	0,01	7
		<i>auteuse</i>		NA	NA	
		<i>écrivaine</i>	NAME	24,57	0,06	9
	<i>Carreleur</i> 'tiler'	<i>carreleuse</i>		NA	NA	
		<i>carreleure</i>		NA	NA	
	<i>Chef</i> 'chief'	<i>cheffe</i>		NA	NA	
		<i>chefesse</i>		NA	NA	
		<i>directeur</i> <sup>MA</sup>				
		<sup>SC</sup>				
	<i>Chercheur</i> 'researcher'	<i>chercheuse</i>	NAME	5,74	0,48	10
		<i>chercheure</i>		NA	NA	
	<i>Chevalier</i> 'knight'	<i>chevalière</i>	NAME	0,47	0,45	10
		<i>princesse</i>	NAME	98,9	46,31	9
		<i>gente dame</i>		NA	NA	
	<i>Commis</i> 'clerk, kitchen help'	<i>commise</i>	VERB	47,45	0,94	7
	<i>Écrivain</i> 'writer'	<i>écrivaine</i>	NAME	24,57	0,06	9
		<i>écrivainne</i>		NA	NA	
	<i>Enquêteur</i> 'investigator'	<i>enquêteur</i>		NA	NA	
		<i>enquêteuse</i>	NAME	4,06	0,07	10
		<i>enquêteur</i>		NA	NA	
	<i>Ingénieur</i> 'engineer'	<i>ingénieure</i>		NA	NA	
		<i>ingénieuse</i>	ADJ.	3,55	0,62	10
	<i>Maçon</i> 'mason'	<i>maçonne</i>	NAME	3,79	0	7
		<i>maçonnière</i>		NA	NA	
		<i>maçone</i>		NA	NA	
	<i>Maire</i> 'mayor'	<i>mairresse</i>	NAME	28,17	0	8
		<i>la maire</i>		NA	NA	
	<i>Matelot</i> 'sailor'	<i>matelote</i>	NAME	0,04	0,04	8
		<i>matelotte</i>		NA	NA	

		<i>matelonne</i>		NA	NA	
	<i>Plombier</i> 'plumber'	<i>plombière</i>		NA	NA	
	<i>Préfet</i> 'prefect'	<i>préfette</i>		NA	NA	
		<i>préfète</i>		NA	NA	
		<i>sous préfète</i>		NA	NA	
	<i>Poète</i> 'poet'	<i>poétesse</i>	NAME	22,65	0,48	8
	<i>Professeur</i> 'professor'	<i>professoress</i> <i>e</i>		NA	NA	
		<i>chercheurM</i>				
	<i>Provisieur</i> 'principal'	<i>provisseure</i>		NA	NA	
		<i>directrice</i>	NAME	64,71	4,55	10
	<i>Soldat</i> 'soldier'	<i>soldate</i>	NAME	107,92	0,18	7
<b>Epicene</b>	<i>Acrobate</i> 'acrobat'	<i>acrobate</i>	NAME	2,34	1,46	8,00
	<i>Architecte</i> 'architect'	<i>architecte</i>	NAME	9,98	8,39	10,00
	<i>Artiste</i> 'artist'	<i>artiste</i>	ADJ.	6,04	4,54	7,00
	<i>Artiste</i> 'artist'	<i>artiste</i>	NAME	40,78	28,00	7,00
	<i>Astronaut</i> 'astronaut'	<i>astronaute</i>	NAME	6,45	3,71	10,00
	<i>Capitaine</i> 'captain'	<i>capitaine</i>	NAME	152,69	150,59	9,00
	<i>Cineaste</i> 'filmmaker'	<i>cinéaste</i>	NAME	3,56	2,45	8,00
	<i>Comptable</i> 'accountant'	<i>comptable</i>	NAME	7,15	6,43	9,00
	<i>Cyclist</i> 'cyclist'	<i>cycliste</i>	NAME	1,08	0,71	8,00
	<i>Dentist</i> 'dentist'	<i>dentiste</i>	NAME	15,40	14,57	8,00
		<i>orthodontist</i> <i>e</i>		NA	NA	
	<i>Detective</i> 'detective'	<i>déetective</i>	NAME	24,61	20,77	9,00
	<i>Diplomate</i> 'diplomat'	<i>diplomate</i>	NAME	3,75	1,98	9,00
	<i>Gendarme</i> 'constable'	<i>gendarme</i>	NAME	13,67	5,53	8,00
		<i>gendarmette</i>	NA	NA		
		<i>gendarmess</i> <i>e</i>	NA	NA		
	<i>Gymnaste</i> 'gymnast'	<i>gymnaste</i>	NAME	0,35	0,26	8,00
	<i>Interprète</i> 'interpreter'	<i>interprète</i>	NAME	4,81	4,01	10,00

<i>Journaliste</i> 'journalist'	<i>journaliste</i>	NAME	35,29	24,26	11,00
<i>Juge</i> 'judge'	<i>juge</i>	NAME	66,45	56,40	4,00
<i>Jurist</i> 'jurist'	<i>juriste</i>	NAME	2,57	1,95	7,00
<i>Libraire</i> 'bookseller'	<i>libraire</i>	NAME	2,10	1,67	8,00
<i>Linguiste</i> 'linguist'	<i>linguiste</i>	NAME	0,50	0,46	9,00
<i>Mécène</i> 'sponsor, patron'	<i>mécène</i>	NAME	0,82	0,69	6,00
	<i>mécènesse</i>	NAME	NA	NA	
<i>Médecin</i> 'doctor, physician'	<i>médecin</i>	NAME	140,19	112,35	7,00
	<i>doctoresse en médecine</i>		NA	NA	
	<i>doctoresse</i>	NAME	233,86	0,66	10,00
<i>Minister</i> 'minister'	<i>ministre</i>	NAME	41,41	38,10	8,00
<i>Peintre</i> 'painter'	<i>peintre</i>	NAME	17,02	13,60	7,00
<i>Pianist</i> 'pianist'	<i>pianiste</i>	NAME	5,75	5,52	8,00
	<i>pianniste</i>		NA	NA	
<i>Podologue</i> 'chiroprapist'	<i>podologue</i>	NAME	0,05	0,05	9,00
<i>Thérapeute</i> 'therapist'	<i>thérapeute</i>	NAME	3,67	3,44	10,00
<i>Urgentiste</i> 'emergency doctor'	<i>urgentiste</i>	NAME	0,25	0,25	10,00
<i>Vidéaste</i> 'videographer'	<i>vidéaste</i>	NAME	0,08	0,07	8,00
<i>Zoologue</i> 'zoologist'	<i>zoologue</i>	NAME	0,02	0,02	8,00

*Frequency and length of the feminine produced items reported from the French lexical database LEXIQUE New et al. LEXIQUE (<http://www.lexique.org> developed by New et al., 2001)  
N.A.: no data were retrieved either because the word does not exist in the database or because there is a spelling error in participants answers.*