The Role of Individuals' Gender Ideology on the Production and Processing of Gendered Occupational Titles

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Contents

1 Introduction

1.1 Hypotheses & Predictions

2   Background

2.1   Sexism

Here I will define the sexism, and also explicate modern ways of measuring it, including Baber and Tucker (2006)'s Social Roles Questionnaire.

2.2   Gender in the English Language

I will also describe the historical disappearance of gender in the English Language, whose vestiges can be seen almost exclusively in animate-referring pronominals and particular compounds, which form the basis of the present investigation. However, it is also worth noting that the gendered pronouns continue to be employed in non-standard uses for inanimate objects, as described in Suzanne Wagner's PhD dissertation (Wagner, 2003).

2.3   Surprisal Theory and Extrasentential Context

Here is where I will cite (Levy, 2008), highlighting and explicating both surprisal theory as a general account for processing and also explicitly invoking the role of extrasentential context, as defined in the work.

2.4   Gender as an Object of Psycholinguistic Analysis

Here we will discuss both Pozniak and Burnett (2021) and von der Malsburg et al. (2020), which discuss the role of individual beliefs in the marking and processing of gender in the elections of the United States, United Kingdom, and France, in the last five years. They found only a production difference, but none in the perception tasks. Also, I think this was only true for the British contexts.

On the non-morphological, discourse-level, Hilton (2022) found that speakers perceived women to be less friendly than their male counterparts when interrupting interlocutors. This held even with carefully-controlled-for overlap timings, pragmatic and semantic contexts, etc.

We can also discuss Sarrasin et al. (2012), which found across three different languages that those individuals who held more traditionally sexist beliefs were anti-gender-neutral language reforms more strongly than were those who held more progressive ideologies about gender and equality. This held across three different kinds of sexism (benevolent, hostile, neutral?)

Gygax and Gabriel (2008) found that blah blah blah French doesn't have true neutrals when using the masculine gender. Similarly, we can cite Misersky et al. (2014) and their work on 'role nouns', which were normed for gender beliefs (but in a more real-world paradigm). These were both occupational titles (bookkeeper) and what they termed 'social roles' (teenager, murderer).

3 Norming Study

3.1 Methods

3.1.1 Participants

100 participants were recruited through the online participant recruitment platform "Prolific" (2014). All participants were self-identified L1 English speakers and were born and resided in the United States. None of the participants had participated in the pilot of the norming study.

All participants, regardless of their data's final inclusion in the analysis, were compensated $2.00 for their participation in the study. The average completion time was 4.353 minutes, which resulted in an average payout of $31.86/hr.

3.1.2 Materials

For the norming study, we selected 39 'role nouns' (Misersky et al., 2014) which display overt gender realizations in English. These items were selected from lists of such words, most of which were written specifically to highlight the gendered nature of many occupational titles in English (see for example Kelly 2018). The majority of these forms (29/39) have three differently-marked forms, reflecting the male and female binary genders, as well as a purportedly gender-neutral alternative. Others have only two forms, due to the historically male form being semantically extended to include female referents as well. Examples of both these varieties, as well as some sub-varieties, are included in the Table Below.

3.1.3 Procedure

After providing their informed consent, participants were presented with 20 randomly-ordered sentences of the format "Someone is a [TITLE]." They were then asked to indicate on a 7-point Likert Scale how likely they thought that the 'someone' in question was a man or a woman. Which ends of the scale indicated maleness or femaleness were randomized between participants. Finally, an optional checkbox allowed participants to indicate if they were unfamiliar with a given term. An example of a stimulus slide is provided in Figure X.

Participants were given an example trial (as seen above), and then proceeded to the main testing phase of the study. In this phase, each participant saw each of the critical terms once, in one of its three permutations (male, female, neutral). This resulted in 40 trials per participant.

After the main trial portion of the study, participants filled out an optional demographic and post-experiment survey.

3.1.4 Exclusions

We excluded participants whose average rating for the female terms deviated more than two standard deviations from the sample mean. This was done because, since all the feminine nouns in the materials are morphologically marked as such, we expect near-ceiling responses on the relative female-ness of these terms. We found this to be largely the case (see Figure 2 below), and this criterion resulted in 11 participants being excluded from the analysis.

We additionally excluded one participant who indicated in the post-experiment survey that they did not understand the task. This resulted in a total of 88 participants being included in the final data analysis.

Example 1

Someone is a teacher.

How likely is it that the person in question is a man or woman?

very likely a man   ○   ○   ○   ○   ○   ○   ○   very likely a woman
                    1   2   3   4   5   6   7
                                unsure

☐ I am not familiar with this term.

Continue

Figure 1: A screenshot of the norming study procedure, as seen by participants
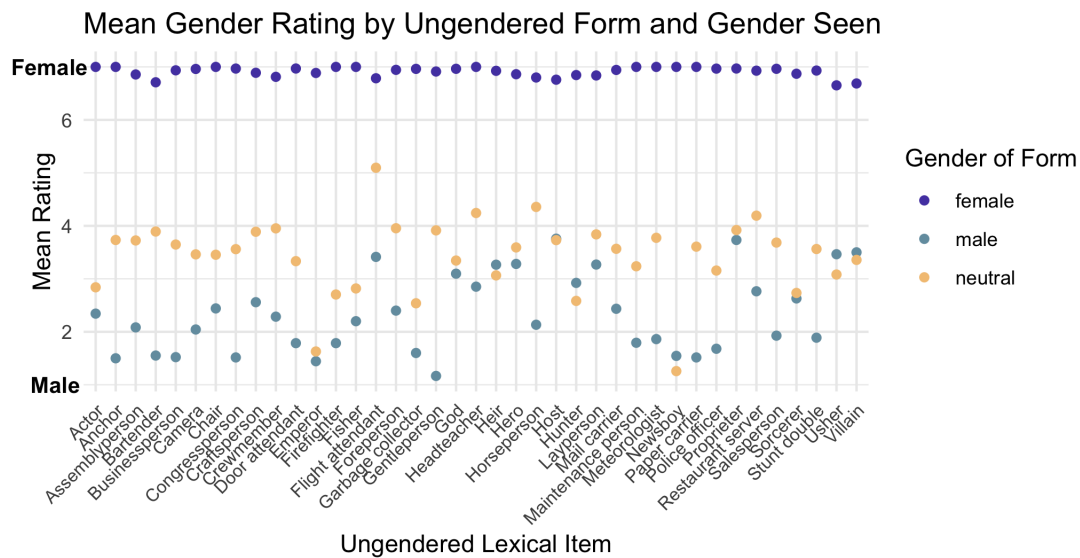
3.2   Results

Figure 2: Mean gender ratings for the items in the norming study. A score of 7 indicates "very likely a woman", while a score of 1 indicates "very likely a man".
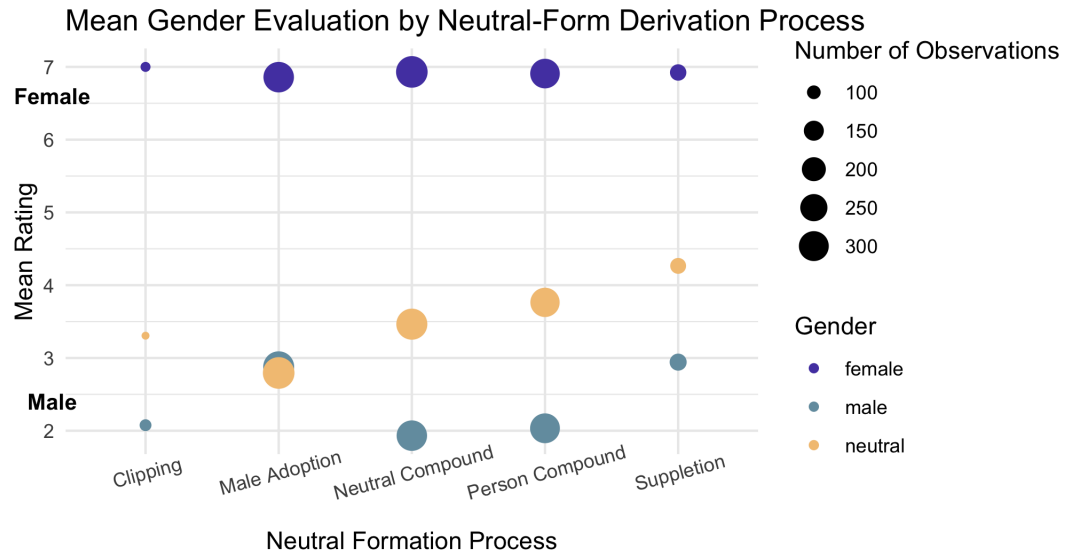
Figure 3: Mean gender ratings by morphological process of gender-neutral formation

4 Experiment 1: Production

4.1 Methods

4.1.1 Participants

4.1.2 Materials

4.1.3 Procedure

4.2 Results

Figure 4: Proportions of genders among produced responses in compound critical items

5 Experiment 2

5.1 Methods

5.1.1 Participants

5.1.2 Materials

Condition	Example Stimulus
Male-Congruent	*David is a congressman from Virginia. He likes cycling.*
Male-Neutral	*David is a congressperson from Virginia. He likes cycling.*
Female-Congruent	*Sally is a congresswoman from Virginia. She likes cycling.*
Female-Neutral	*Sally is a congressperson from Virginia. She likes cycling.*

Table 1: Example stimuli from experiment

5.1.3 Procedure

5.2 Results

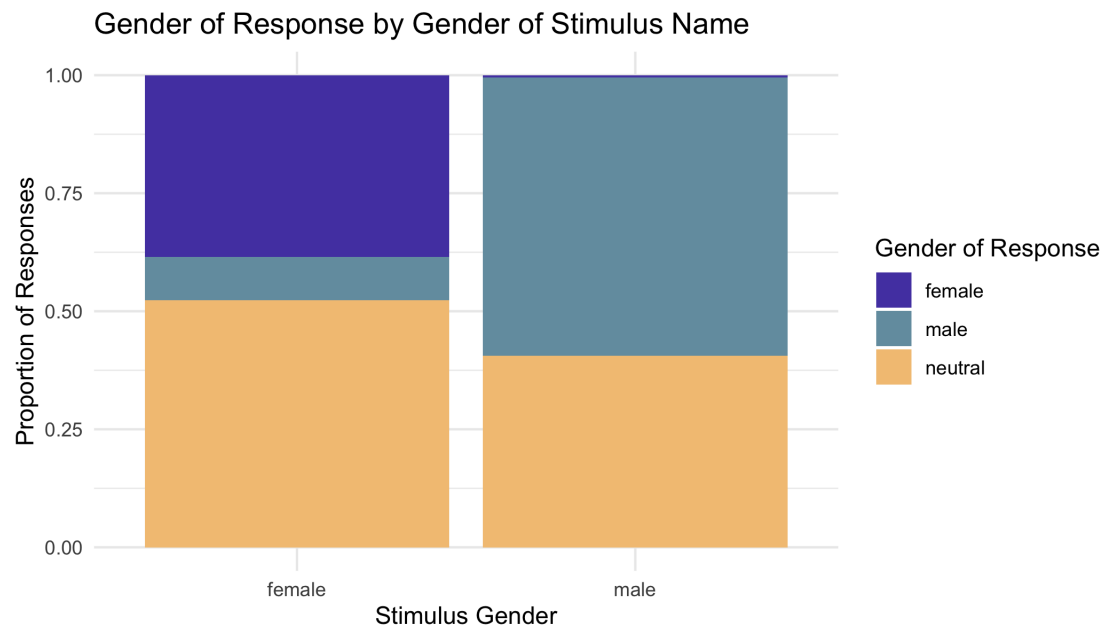## Gender of Response by Gender of Stimulus Name

Figure 5: Proportions of genders among produced responses in compound critical items

6   Experiment 2.5

6.1   Methods

6.1.1   Participants

6.1.2   Materials

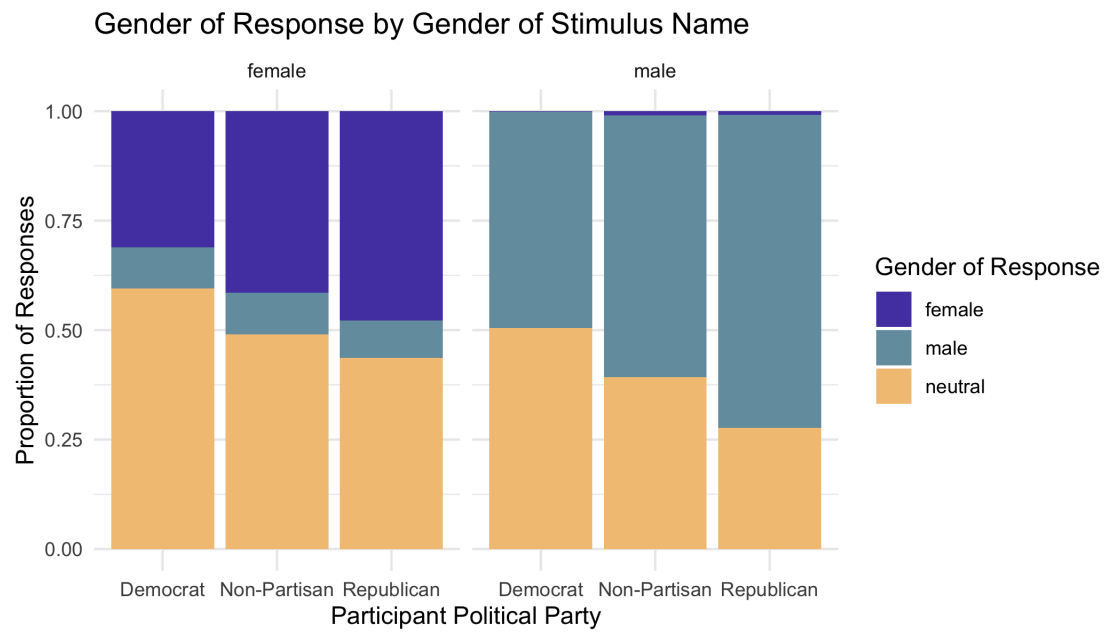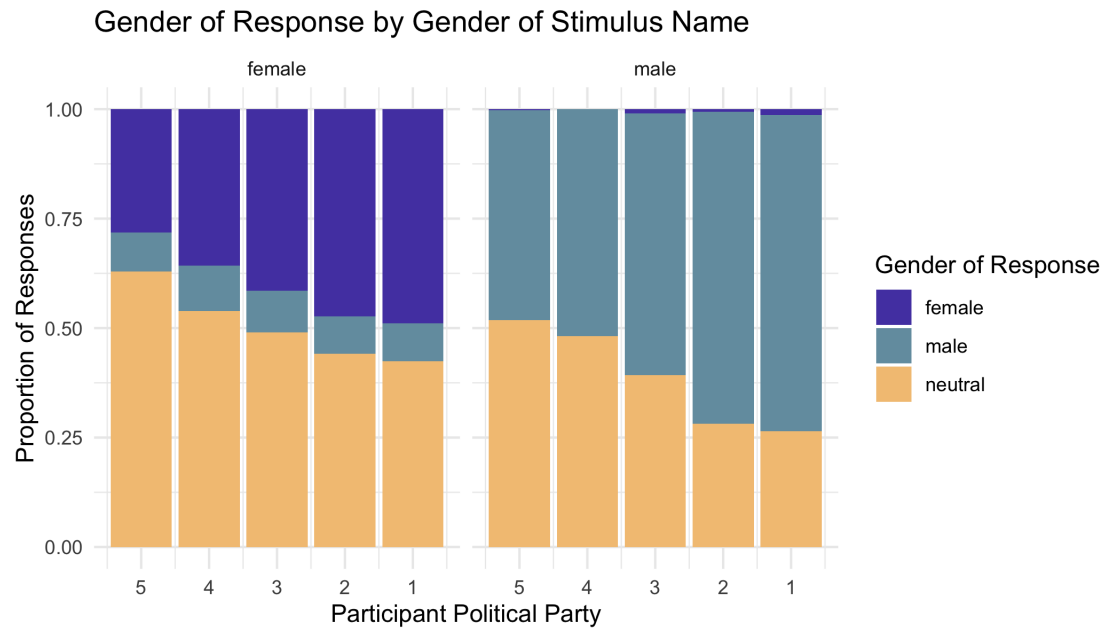### 6.1.3   Procedure

6.2   Results

Figure 6: Proportions of genders among produced responses in compound critical items

7 Experiment 3

7.1 Methods

7.1.1 Participants

7.1.2 Materials

7.1.3 Procedure

## 7.2 Results

8   Analysis

9 Discussion

9.1 Limitations

9.1.1 Demographic Limitations

Political Skew

Gender Skew (TikTok) On 24th July, 2021, Tik Tok user @sarahndom posted a video explaining how she made extra money participating in experiments and surveys via Prolific.co, the same recruitment platform we used. (@sarahndom, 2021). As a result, Prolific saw a large spike in participant sign-ups, most of whom were young women ("Prolific", 2014). The effect of this event was that our sample in the production experiment (Experiment 1) was significantly skewed towards this demographic, only 27 of 200 participants identified as male.

This is concerning, considering the explicitly gendered nature of this work, and the consistent finding that women have more open-minded approaches to gender and its related phenomena [CITATIONS NEEDED].
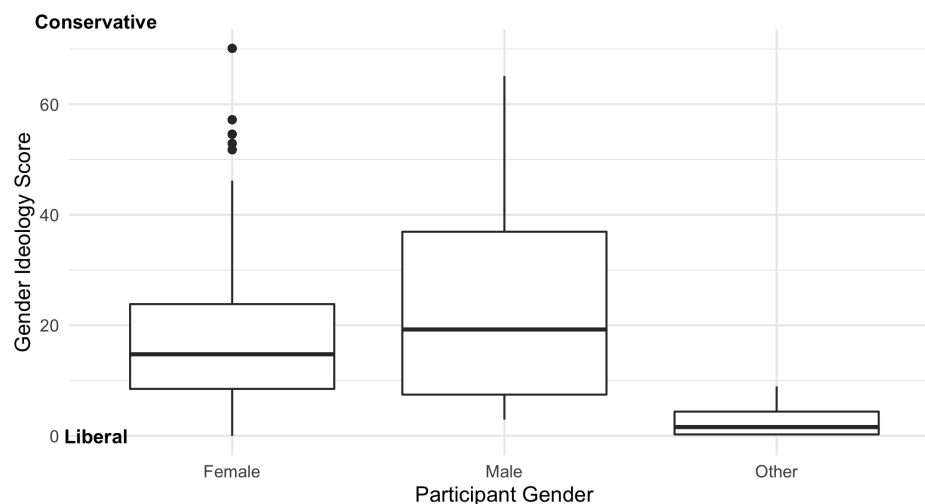
9.1.2 Stimuli Limitations

Semantic Inconsistencies

Ordering of Experiment Parts

Low-Frequency Items

White Names

10
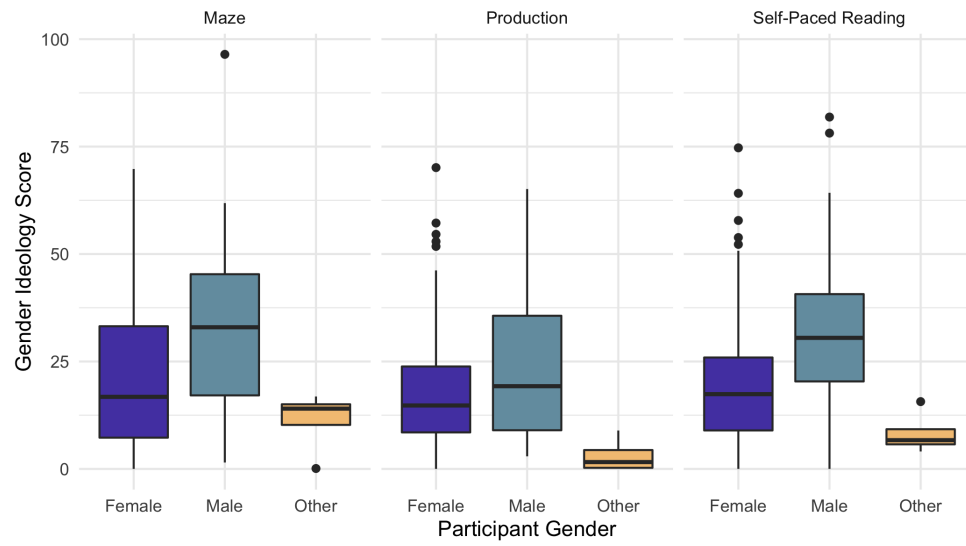
9.1.3   Analysis Limitations

Age-Ideology Confound

Colinearity in Normed Values

9.2   Future Directions

- Crossing raced names with gendered name

10   Conclusion

Appendices

Appendix A: Critical Items for Norming Study

Lexical Item	Male	Neutral	Female
Actor		actor	actress
Anchor	anchorman	anchor	anchorwoman
Assembly-	assemblyman	assemblyperson	assemblywoman
Bar-	barman	bartender	barmaid
Business-	businessman	businessperson	businesswoman
Camera-	cameraman	camera operator	camerawoman
Chair-	chairman	chair	chairwoman
Congress-	congressman	congressperson	congresswoman
Crafts-	craftsman	craftsperson	craftswoman
Crew-	crewman	crewmember	crewwoman
Door-	doorman	door attendant	doorwoman
Emperor		emperor	empress
Fire-	fireman	firefighter	firewoman
Fisher-	fisherman	fisher	fisherwoman
Flight	steward	flight attendant	stewardess
Fore-	foreman	foreperson	forewoman
Garbage-	garbageman	garbage collector	garbagewoman
Gentle-	gentleman	gentleperson	gentlewoman
God-		god	goddess
Head-	headmaster	headteacher	headmistress
Heir		heir	heiress
Hero		hero	heroine
Horse-	horseman	horseperson	horsewoman
Host		host	hostess
Hunter		hunter	huntress
Lay-	layman	layperson	laywoman
Mail-	mailman	mail carrier	mailwoman
Maintenance	handyman	maintenance person	handywoman
Weather-	weatherman	meteorologist	weatherwoman
News-		newsboy	newsgirl
Paper-	paperboy	paper carrier	papergirl
Police-	policeman	police officer	policewoman
Land-	landlord	proprietor	landlady
Wait-	waiter	restaurant server	waitress
Sales-	salesman	salesperson	saleswoman
Sorce-		sorcerer	sorceress
Stunt-	stuntman	stunt double	stuntwoman
Usher-		usher	usherette
Villain-		villain	villainess

Appendix B: Critical Items for Self-Paced Reading, Maze, and Production Tasks

Lexical Item	Male	Neutral	Female
Actor	actor		actress
Anchor	anchorman	anchor	anchorwoman
Business-	businessman	businessperson	businesswoman
Camera-	cameraman	camera operator	camerawoman
Congress-	congressman	congressperson	congresswoman
Crafts-	craftsman	craftsperson	craftswoman
Crew-	crewman	crewmember	crewwoman
Fire-	fireman	firefighter	firewoman
Flight	steward	flight attendant	stewardess
Fore-	foreman	foreperson	forewoman
Heir	heir		heiress
Hero	hero		heroine
Host	host		hostess
Hunter	hunter		huntress
Lay-	layman	layperson	laywoman
Weather-	weatherman	meteorologist	weatherwoman
Police-	policeman	police officer	policewoman
Sales-	salesman	salesperson	saleswoman
Stunt-	stuntman	stunt double	stuntwoman
Villain-	villain		villainess

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