My Notebook

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My Notebook

```
## [1] "Good morning,Dr.Dowling!"
```

```
## [1] "Voldemort, Expelliarmus!"
```

```
## [1] "I don't know you:("
```

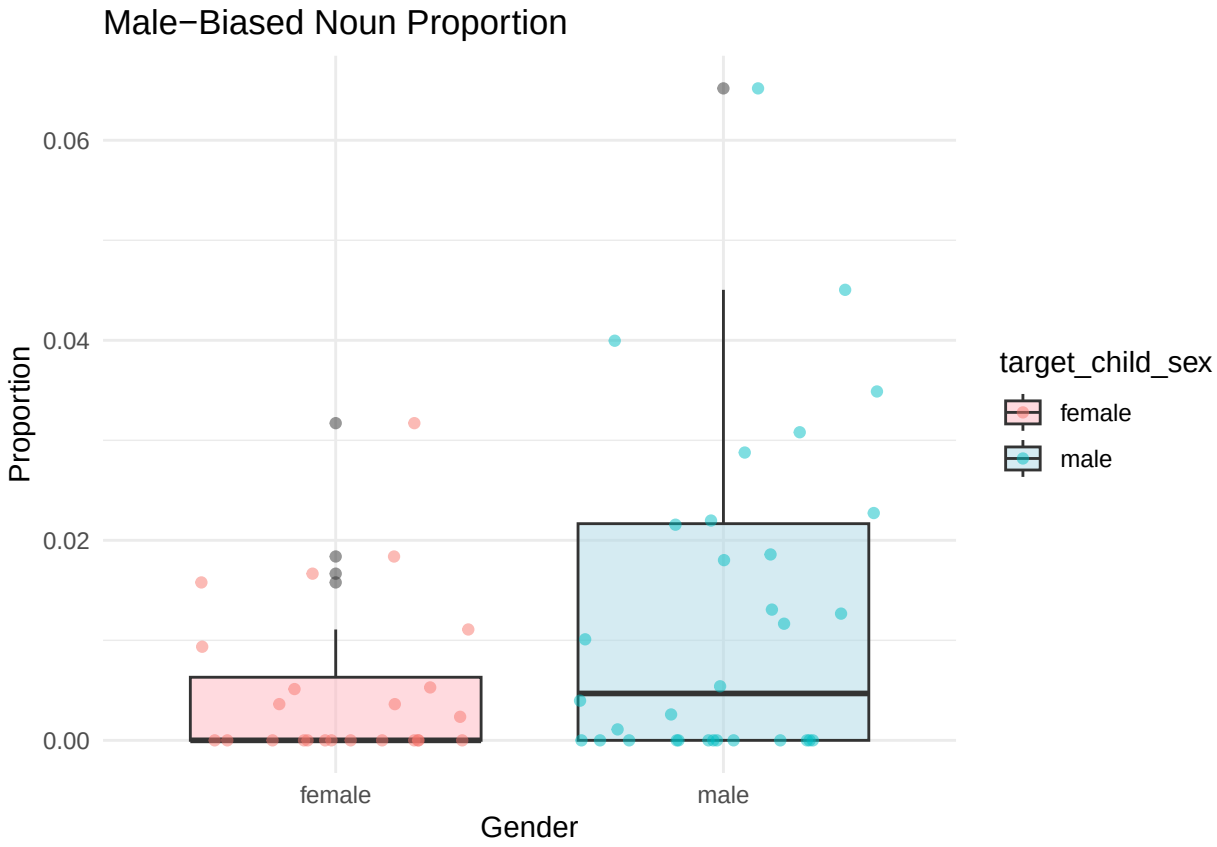
Assignment 18

Effect of Maternal Gender-Biased Speech on Children's Gender Socialization

Numerous studies in recent decades have demonstrated that gender role socialization starts from birth (e.g., Birns, 1976; Honig, 1983). Parents play a crucial role in influencing their children to engage in gender role stereotyped activities, and that these perceptual biases influence the children's own self-perceptions and activity choices (Eccles, Jacobs, & Harold, 1990).

In the field of language development, researchers have postulated that Infant-Directed Speech (IDS) is an ideal signal for language learning due to infants' strong preference for it, providing attentional, emotional, linguistic, and social cues (Ferjan Ramírez, 2022). Recent studies examining language input to boys and girls reveal distinct biases in IDS content, with boys exposed more to words associated with outdoor scenes and girls to terms related to clothing and body parts (Kachergis, Francis, & Frank, 2023); Wallentin and Trecca (2023)]. Parents tend to discuss emotions more with girls than boys (Adams, Kuebli, Boyle, & Fivush, 1995), explain scientific content more to boys in certain settings (Crowley et al., 2001), and engage in cognitive development-promoting discussions more frequently with boys (Weitzman, Birns, & Friend, 1985).

Assignment 10 & 12



X-axis: The gloss variable, representing different words (like “dress”, “doll”, “necklace”, etc.). Y-axis: The count or frequency of each word, indicating how often each word appears in the dataset. Type of Plot: Bar Chart. Comparison Across Groups?: Yes Anticipated Findings: mothers speak more female-biased nouns to female infants than to male infants

As seen in Figure 1, There’s gender bias in the nouns of mother’s infant-directed speech.

Assignment 13. Prettified Plot

X-axis: female/male infants

Y-axis: counts of frequency of female-biased nouns Type of Plot: box plot

Comparison Across Groups?: Yes

Anticipated Findings: mothers speak more female-biased nouns in CDS to female infants than to male infants

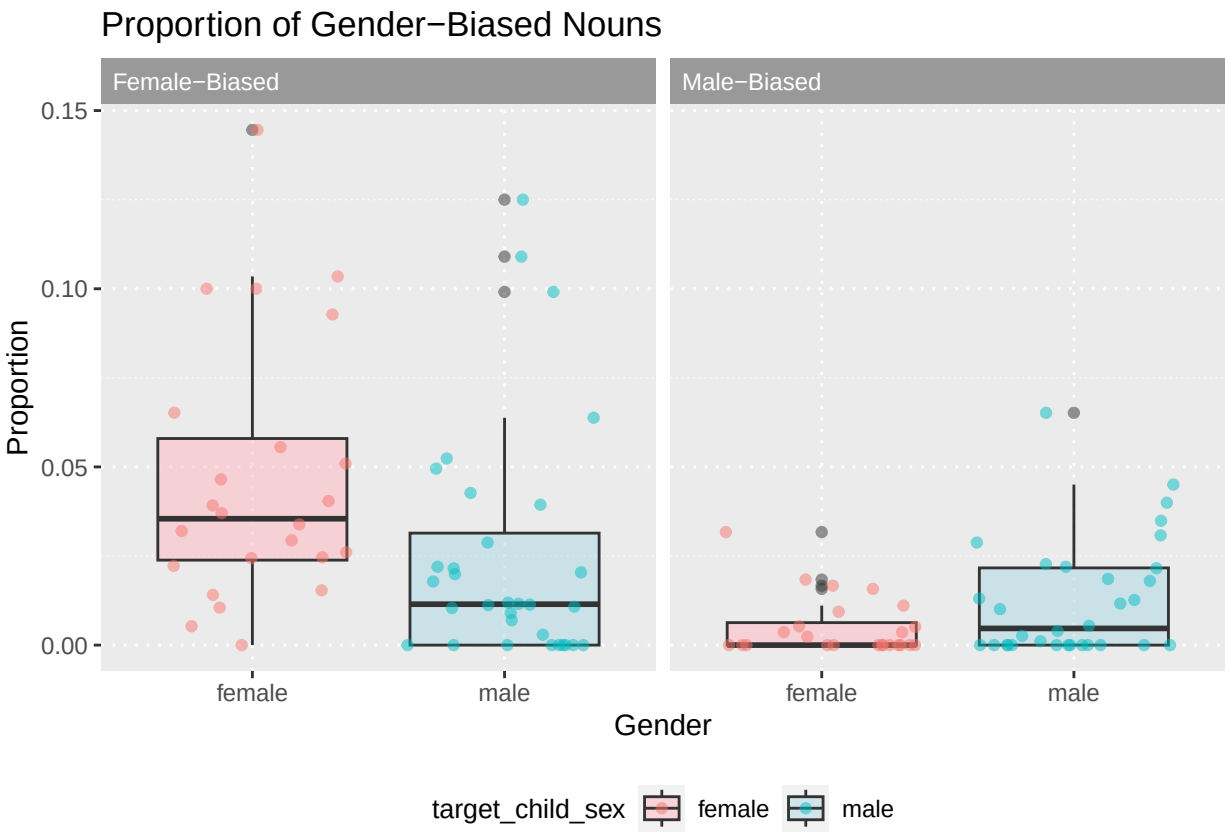
Assignment 14

As shown in Table 1, the gender distribution in the dataset varies, with a higher percentage of Female compared to Male.

Assignment 15 & 16

***Descriptive Analysis*: Examining Maternal Gender-Biased Language Imput Patterns**

```
## # A tibble: 2 x 4
##   target_child_sex mean_mnoun median_mnoun sd_mnoun
##   <chr>                 <dbl>        <dbl>    <dbl>
## 1 female              0.00513      0        0.00817
## 2 male                0.0128       0.00469  0.0165
```



***Hypothesis Testing Analysis*: Testing the Influence of Child's Gender on Maternal Language Input**

```
##                  Df   Sum Sq   Mean Sq F value Pr(>F)
## target_child_sex  1 0.000798 0.0007977   4.326 0.0423 *
## Residuals        54 0.009958 0.0001844
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##                  Df  Sum Sq  Mean Sq F value Pr(>F)
## target_child_sex  1 0.00633 0.006327   5.252 0.0259 *
## Residuals        54 0.06506 0.001205
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Assignment 17

The ANOVA tests conducted on the proportions of female-biased nouns used by mothers reveal the following: The Tukey test results are:

For female-biased nouns used by mothers, the F-statistic is $F = 5.25$, $p = 0.03$.

And for male-biased nouns used by mothers, the F-statistic is $F = 4.33$, $p = 0.04$.

The results suggest that there is a statistically significant difference in the usage of gender-biased nouns by mothers when speaking to male children compared to female children, at the conventional 0.05 significance level.

References

Adams, S., Kuebli, J., Boyle, P. A., & Fivush, R. (1995). Gender differences in parent-child conversations about past emotions: A longitudinal investigation. *Sex Roles*, *33*(5-6), 309–323. https://doi.org/10.1007/BF01954572

Birns, B. (1976). The Emergence and Socialization of Sex Differences in the Earliest Years. *Merrill-Palmer Quarterly of Behavior and Development*, *22*(3), 229–254. Retrieved from https://www.jstor.org/stable/23084603

Crowley, K., Callanan, M. A., Jipson, J. L., Galco, J., Topping, K., & Shrager, J. (2001). Shared scientific thinking in everyday parent-child activity. *Science Education*, *85*(6), 712–732. https://doi.org/10.1002/sce.1035

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Ferjan Ramírez, N. (2022). Fathers' infant-directed speech and its effects on child language development. *Language and Linguistics Compass*, *16*(1), e12448. https://doi.org/10.1111/lnc3.12448

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Kachergis, G., Francis, N., & Frank, M. C. (2023). Estimating Demographic Bias on Tests of Children's Early Vocabulary. *Topics in Cognitive Science*, *15*(2), 303–314. https://doi.org/10.1111/tops.12635

Wallentin, M., & Trecca, F. (2023). Cross-Cultural Sex/Gender Differences in Produced Word Content Before the Age of 3 Years. *Psychological Science*, *34*(4), 411–423. https://doi.org/10.1177/09567976221146537

Weitzman, N., Birns, B., & Friend, R. (1985). Traditional and Nontraditional Mothers' Communication with Their Daughters and Sons. *Child Development*,

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Table 1

Male-Infant Data

target_child_name	target_child_sex	gloss_count	fnoun_count	mnoun_count	mnou
Aaron	male	57	0	0	
Adam	male	201	4	0	
Alex	male	19296	135	225	
Alfred	male	91	2	2	
Alice	female	2081	106	66	
Allen	male	108	0	0	
Anthony	male	39	0	0	
Benjamin	male	914	36	1	
Brian	male	89	1	0	
Brooke	female	97	9	0	
Carol	female	83	12	0	
Danielle	female	90	5	0	
David	male	688	75	24	
Doug	male	88	1	2	
Emily	female	142	2	0	
Emma	female	180	4	3	
Erica	female	123	3	0	
Ethan	male	23210	269	715	
Jarret	male	99	0	1	
Jas	male	185	2	1	
Jase	male	1777	88	71	
Jeff	male	88	0	0	
Jessica	female	120	12	0	
Jillian	female	2550	75	6	
Johnnie	male	222	22	10	

Table 2

Tukey HSD Test Results for Target Child Sex

	diff	lwr	upr	p adj
male-female	-0.0214792	-0.0402707	-0.0026877	0.0258534

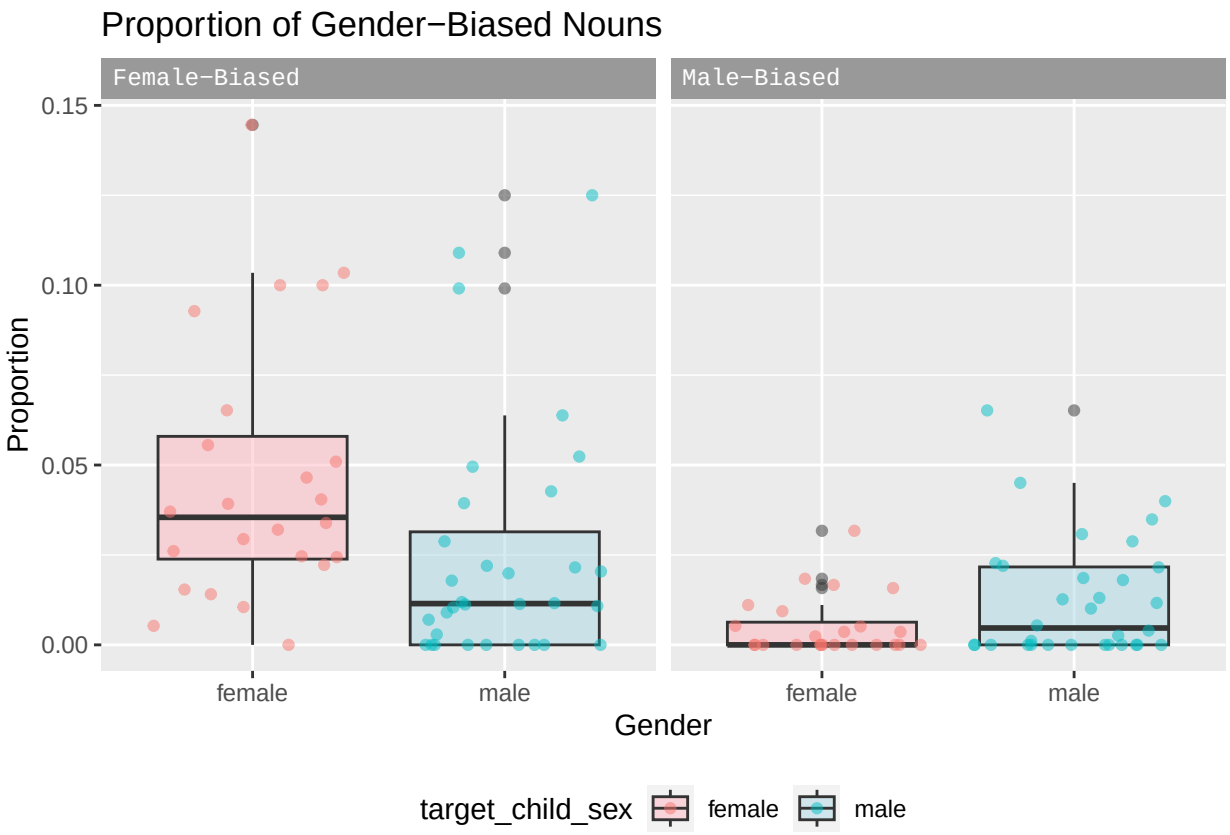

Figure 1. Proportion of Gender-Biased Nouns by Gender