Experiment 1: Supplementary Analyses

2023-02-24

Contents

Setup

Variable names:

- Experiment: exp1_
- Data (_d_)

    - d = main df
    - FF = First + Full Name conditions only
    - noOther = just *he* and *she* responses
    - subjGender = participant gender

- Models (_m_)

- cond = effect of Condition (Last vs First+Full)
- nameGender = effects of Condition (First vs Full) and Name Gender Rating
- FF = dummy coded with First + Full Name conditions as 0, Last Name condition as 1
- L = dummy coded with Last Name condition as 0, First + Full Name conditions as 1
- quad = quadratic effect of Gender Rating
- subjGender = participant gender
- recenter = center name Gender Rating by scale (at 4)

Load data and select columns used in model. See data/exp1_data_about.txt for more details.

```
exp1_d <- read.csv("../data/exp1_data.csv",
                   stringsAsFactors = TRUE) %>%
  rename("Participant" = "SubjID", "Item" = "NameShown") %>%
  select(Participant, SubjGenderMale,
         Condition, GenderRating,
         Item, He, She, Other)
str(exp1_d)
```

```
## 'data.frame':    9564 obs. of  8 variables:
##  $ Participant   : Factor w/ 457 levels "Exp1_P1","Exp1_P10",..: 443 443 443 443 443 443 443 443 443
##  $ SubjGenderMale: int  0 0 0 0 0 0 0 0 0 0 ...
##  $ Condition     : Factor w/ 3 levels "first","full",..: 1 1 1 1 1 1 1 1 1 1 1 ...
##  $ GenderRating  : num  1.21 1.24 1.28 2.12 2.41 2.61 3.61 3.75 3.87 4.22 ...
##  $ Item          : Factor w/ 104 levels "Ashley","Ashley Cook",..: 64 11 43 18 95 29 88 71 79 92 ...
##  $ He            : int  1 1 1 1 0 1 1 0 1 1 ...
##  $ She           : int  0 0 0 0 1 0 0 1 0 0 ...
##  $ Other         : int  0 0 0 0 0 0 0 0 0 0 ...
```

Center gender rating for names: Original scale from 1 to 7, with 1 as most masculine and 7 as most feminine.
Mean-centered with higher still as more feminine.

```
exp1_d %<>% mutate(GenderRatingCentered =
    scale(GenderRating, scale = FALSE))
```

Set contrasts for name conditions.

```
contrasts(exp1_d$Condition) = cbind(
  "last vs first/full" = c(.33, .33, -0.66),
  "first vs full"      = c(-.5, .5,  0))
contrasts(exp1_d$Condition)
```

```
##       last vs first/full first vs full
## first               0.33          -0.5
## full                0.33           0.5
## last               -0.66           0.0
```

Subset for gender rating effects (First and Full conditions only).

```
exp1_d_FF <- exp1_d %>% filter(Condition!="last")
exp1_d_FF$Condition %<>% droplevels()
contrasts(exp1_d_FF$Condition) = cbind(
  "first vs full" = c(-.5,.5)) #add contrast back
contrasts(exp1_d_FF$Condition)
```

```
##       first vs full
## first          -0.5
## full            0.5
```

Without *Other* Responses

The first supplementary analysis tests if excluding *other* responses (7.12% of total responses) affects the pattern of results.

```
sum(exp1_d$Other)
```

```
## [1] 681
```

```
sum(exp1_d$Other)/length(exp1_d$Other)
```

```
## [1] 0.07120452
```

Exclude *other* responses.

```
exp1_d_noOther    <- exp1_d    %>% filter(Other == 0)
exp1_d_FF_noOther <- exp1_d_FF %>% filter(Other == 0)
```

Model 1: Condition without *Other* Responses

Effect of Condition (first name, last name, full name) on likelihood of a *she* response, as opposed to a *he* response, with *other* responses excluded. Participant and Item are again included as random intercepts, with items defined as the unique first, last and first + last name combinations.

```
exp1_m_cond_noOther <- glmer(
  She ~ Condition + (1|Participant) + (1|Item),
  data = exp1_d_noOther, family = binomial)
summary(exp1_m_cond_noOther)
```

```
## Generalized linear mixed model fit by maximum likelihood (Laplace
##   Approximation) [glmerMod]
##  Family: binomial  ( logit )
## Formula: She ~ Condition + (1 | Participant) + (1 | Item)
##    Data: exp1_d_noOther
##
##      AIC      BIC   logLik deviance df.resid
##   5795.0   5830.5  -2892.5   5785.0     8878
##
```

```
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -8.1910 -0.2987 -0.1446  0.1682 10.5933
##
## Random effects:
##  Groups      Name        Variance Std.Dev.
##  Participant (Intercept) 0.823    0.9072
##  Item        (Intercept) 9.099    3.0164
## Number of obs: 8883, groups:  Participant, 456; Item, 104
##
## Fixed effects:
##                            Estimate Std. Error z value Pr(>|z|)
## (Intercept)                 -1.1304     0.3432  -3.294 0.000988 ***
## Conditionlast vs first/full  2.9905     0.7830   3.819 0.000134 ***
## Conditionfirst vs full       0.5548     0.7823   0.709 0.478192
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##            (Intr) Cvfrs/
## Cndtnvfrst/ -0.179
## Cndtnfrstvf -0.363 -0.241
```

No differences in results.

Odds Ratios: Intercept

```
exp(get_intercept(exp1_m_cond_noOther))
```

```
## [1] 0.3229123
```

```
exp(-get_intercept(exp1_m_cond_noOther))
```

```
## [1] 3.096817
```

0.32x less likely to use to use *she* overall (or: 3.10x more likely to use *he* overall), p<.001

Odds Ratios: Last vs First+Full

```
exp1_m_cond_noOther %>% tidy() %>%
  filter(term == "Conditionlast vs first/full") %>%
  pull(estimate) %>% exp()
```

```
## [1] 19.89544
```

19.89x more likely to use *she* in First + Full compared to Last (or: 19.89x times more likely to use *he* and *other* in Last than in First + Full), p<.001

4

Odds Ratios: Last Only

Dummy code with Last Name as 0, so that intercept is the Last Name condition only.

```
exp1_d_noOther %<>% mutate(Condition_Last = case_when(
  Condition == "first" ~ 1,
  Condition == "full"  ~ 1,
  Condition == "last"  ~ 0))
exp1_d_noOther$Condition_Last %<>% as.factor()
```

```
exp1_m_L_noOther <- glmer(
  She ~ Condition_Last + (1|Participant) + (1|Item),
  data = exp1_d_noOther, family = binomial)
summary(exp1_m_L_noOther)
```

```
## Generalized linear mixed model fit by maximum likelihood (Laplace
##   Approximation) [glmerMod]
##  Family: binomial  ( logit )
## Formula: She ~ Condition_Last + (1 | Participant) + (1 | Item)
##    Data: exp1_d_noOther
##
##      AIC      BIC   logLik deviance df.resid
##   5793.5   5821.9  -2892.8   5785.5     8879
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -8.3061 -0.2987 -0.1443  0.1687 10.4488
##
## Random effects:
##  Groups      Name        Variance Std.Dev.
##  Participant (Intercept) 0.8231   0.9072
##  Item        (Intercept) 9.1123   3.0187
## Number of obs: 8883, groups:  Participant, 456; Item, 104
##
## Fixed effects:
##                 Estimate Std. Error z value Pr(>|z|)
## (Intercept)      -3.1042     0.6701  -4.632 3.61e-06 ***
## Condition_Last1   3.0923     0.7530   4.107 4.01e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr)
## Condtn_Lst1 -0.890
```

```
exp(get_intercept(exp1_m_L_noOther))
```

```
## [1] 0.04486108
```

```
exp(-get_intercept(exp1_m_L_noOther))
```

```
## [1] 22.29104
```

0.04x times less likely to use *she* in the Last Name condition (or: 22.29x more likely to use *he* in the Last Name condition), p<.001

Odds Ratios: First and Full Only

Dummy code with First and Full Name as 0, so that intercept is average for these two conditions.

```
exp1_d_noOther %<>% mutate(Condition_FF = case_when(
  Condition == "first" ~ 0,
  Condition == "full"  ~ 0,
  Condition == "last"  ~ 1))
exp1_d_noOther$Condition_FF %<>% as.factor()
```

```
exp1_m_FF_noOther <- glmer(
  She ~ Condition_FF + (1|Participant) + (1|Item),
  data = exp1_d_noOther, family = binomial)
summary(exp1_m_FF_noOther)
```

```
## Generalized linear mixed model fit by maximum likelihood (Laplace
##   Approximation) [glmerMod]
##  Family: binomial  ( logit )
## Formula: She ~ Condition_FF + (1 | Participant) + (1 | Item)
##    Data: exp1_d_noOther
##
##      AIC      BIC   logLik deviance df.resid
##   5793.5   5821.9  -2892.8   5785.5     8879
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -8.3061 -0.2987 -0.1443  0.1687 10.4488
##
## Random effects:
##  Groups      Name        Variance Std.Dev.
##  Participant (Intercept) 0.8231   0.9072
##  Item        (Intercept) 9.1123   3.0187
## Number of obs: 8883, groups:  Participant, 456; Item, 104
##
## Fixed effects:
##               Estimate Std. Error z value Pr(>|z|)
## (Intercept)    -0.0119     0.3436  -0.035    0.972
## Condition_FF1  -3.0923     0.7535  -4.104 4.06e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr)
## Conditn_FF1 -0.456
```

```
exp(get_intercept(exp1_m_FF_noOther))
```

```
## [1] 0.9881717
```

```
exp(-get_intercept(exp1_m_FF_noOther))
```

```
## [1] 1.01197
```

0.99x times less likely to use *she* in the First and Full Name conditions (or: 1.01x more likely to use *he* in the n the First and Full Name conditions) p=0.97

Model 2: Condition * Name Gender w/o *Other* Responses

Effects of Condition (first name, full name) and the first name's Gender Rating (centered, positive=more feminine) on the likelihood of a *she* response as opposed to a *he* response, with *other* responses excluded. In Experiment 1, the Last Name condition does not include any instances of the gendered first name, so it is not included here. Participant and Item are again included as random intercepts.

```
exp1_m_nameGender_noOther <- glmer(
  She ~ Condition * GenderRatingCentered + (1|Participant) + (1|Item),
  data = exp1_d_FF_noOther, family = binomial)
summary(exp1_m_nameGender_noOther)
```

```
## Generalized linear mixed model fit by maximum likelihood (Laplace
##   Approximation) [glmerMod]
##  Family: binomial  ( logit )
## Formula: She ~ Condition * GenderRatingCentered + (1 | Participant) +
##     (1 | Item)
##    Data: exp1_d_FF_noOther
##
##      AIC      BIC   logLik deviance df.resid
##   4107.5   4147.7  -2047.7   4095.5     6010
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -8.4773 -0.3329 -0.0363  0.2865 16.3570
##
## Random effects:
##  Groups      Name        Variance Std.Dev.
##  Participant (Intercept) 0.5808   0.7621
##  Item        (Intercept) 0.6272   0.7920
## Number of obs: 6016, groups:  Participant, 304; Item, 83
##
## Fixed effects:
##                                         Estimate Std. Error z value
## (Intercept)                             -0.22358    0.12769  -1.751
## Conditionfirst vs full                   0.41016    0.25609   1.602
## GenderRatingCentered                     1.74039    0.08444  20.612
## Conditionfirst vs full:GenderRatingCentered -0.25145    0.16068  -1.565
##                                         Pr(>|z|)
## (Intercept)                               0.080 .
## Conditionfirst vs full                    0.109
## GenderRatingCentered                    <2e-16 ***
## Conditionfirst vs full:GenderRatingCentered  0.118
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##            (Intr) Cndtvf GndrRC
## Cndtnfrstvf -0.387
## GndrRtngCnt -0.115  0.113
## Cvfll:GndRC  0.096 -0.122 -0.426
```

Compared to the main analysis including *other* responses, the intercept is trending instead of significant, the gender rating effect the same, and the small First vs Full effect is no longer significant.

Quadratic Name Gender Rating

The second supplementary analysis tested the effect of squared name gender rating, such that larger values meant names with stronger gender associations (masc or fem), and smaller values meant names with weaker gender associations.

```
exp1_d_FF %<>% mutate(GenderRatingSquared = GenderRatingCentered^2)
```

Model 3: Quadratic

No quadratic effects.

```
exp1_m_nameGender_quad <- glmer(
  She ~ Condition*GenderRatingCentered + Condition*GenderRatingSquared +
    (1|Participant) + (1|Item),
  data = exp1_d_FF, family = binomial)
summary(exp1_m_nameGender_quad)
```

```
## Generalized linear mixed model fit by maximum likelihood (Laplace
##    Approximation) [glmerMod]
##  Family: binomial  ( logit )
## Formula:
## She ~ Condition * GenderRatingCentered + Condition * GenderRatingSquared +
##     (1 | Participant) + (1 | Item)
##    Data: exp1_d_FF
##
##      AIC      BIC   logLik deviance df.resid
##   4658.9   4712.9  -2321.4   4642.9     6364
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -9.1928 -0.3535 -0.0574  0.3125 14.0580
##
## Random effects:
##  Groups      Name        Variance Std.Dev.
##  Participant (Intercept) 0.8910   0.9440
##  Item        (Intercept) 0.4795   0.6925
## Number of obs: 6372, groups:  Participant, 305; Item, 83
##
```

```
## Fixed effects:
##                                              Estimate Std. Error z value
## (Intercept)                                  -0.59972    0.15023  -3.992
## Conditionfirst vs full                        0.38504    0.30017   1.283
## GenderRatingCentered                          1.59657    0.07187  22.214
## GenderRatingSquared                           0.03687    0.03923   0.940
## Conditionfirst vs full:GenderRatingCentered  -0.16052    0.13726  -1.169
## Conditionfirst vs full:GenderRatingSquared    0.06049    0.07828   0.773
##                                              Pr(>|z|)
## (Intercept)                                  6.55e-05 ***
## Conditionfirst vs full                          0.200
## GenderRatingCentered                          < 2e-16 ***
## GenderRatingSquared                             0.347
## Conditionfirst vs full:GenderRatingCentered     0.242
## Conditionfirst vs full:GenderRatingSquared      0.440
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) Cndtvf GndrRC GndrRS Cvf:GRC
## Cndtnfrstvf -0.374
## GndrRtngCnt -0.112  0.024
## GndrRtngSqr -0.617  0.267 -0.041
## Cvfll:GndRC  0.025 -0.107 -0.408  0.111
## Cvfll:GndRS  0.266 -0.618  0.120 -0.439 -0.030
```

Participant Gender

Setup/Data Summary

The third supplementary analysis looks at participant gender: if male participants show a larger bias towards HE responses than non-male participants.

Participants entered their gender in a free-response box.

```
exp1_d %>% group_by(SubjGenderMale) %>%
  summarise(total = n_distinct(Participant)) %>%
  kable()
```

SubjGenderMale	total
0	198
1	244
NA	15

For this analysis, we exclude participants who did not respond (N=15). Because there are not enough participants to create 3 groups, we compare male to non-male participants. Male participants (N=244) coded as 1 and female (N=196), genderfluid (N=1), and nonbinary participants (N=1) coded as 0.

```
exp1_d_subjGender <- exp1_d %>% filter(!is.na(SubjGenderMale))

exp1_d_subjGender %>% group_by(SubjGenderMale) %>%
  summarise(total = n_distinct(Participant)) %>%
  kable()
```

SubjGenderMale	total
0	198
1	244

Summary of responses by condition and participant gender.

```r
exp1_d_subjGender %<>% mutate(ResponseAll = case_when(
  He    == 1 ~ "He",
  She   == 1 ~ "She",
  Other == 1 ~ "Other"))

exp1_d_subjGender %>%
  group_by(Condition, ResponseAll, SubjGenderMale) %>%
  summarise(n = n()) %>%
  pivot_wider(names_from  = ResponseAll,
              values_from = n) %>%
  rename("ParticipantGender" = "SubjGenderMale") %>%
  mutate(ParticipantGender = case_when(
    ParticipantGender == "0" ~ "Non-male",
    ParticipantGender == "1" ~ "Male")) %>%
  mutate(She_HeOther = She / (He+Other),
         She_He      = She / He) %>%
  kable(digits = 3)
```

Condition	ParticipantGender	He	Other	She	She_HeOther	She_He
first	Non-male	680	83	644	0.844	0.947
first	Male	830	131	698	0.726	0.841
full	Non-male	656	58	648	0.908	0.988
full	Male	823	71	842	0.942	1.023
last	Non-male	1114	134	138	0.111	0.124
last	Male	1418	176	107	0.067	0.075

Participant gender is mean centered effects coded, comparing non-male participants to male participants.

```r
exp1_d_subjGender$SubjGenderMale %<>% as.factor()
contrasts(exp1_d_subjGender$SubjGenderMale) = cbind("NM_M" = c(-.5,.5))
contrasts(exp1_d_subjGender$SubjGenderMale)
```

```
##   NM_M
## 0 -0.5
## 1  0.5
```

Subset First and Full conditions.

```r
exp1_d_FF_subjGender <- exp1_d_subjGender %>% filter(Condition != "last")
exp1_d_FF_subjGender$Condition %<>% droplevels()
contrasts(exp1_d_FF_subjGender$Condition) =
  cbind("first vs full" = c(-.5, .5)) #add contrast back
contrasts(exp1_d_FF_subjGender$Condition)
```

```
##       first vs full
## first          -0.5
## full            0.5
```

Model 4: Condition * Participant Gender

Effect of Condition (first name, last name, full name) and Participant Gender (non-male vs male) on likelihood of a *she* response, as opposed to a *he* or *other* response. Participant and Item are again included as random intercepts.

```
exp1_m_cond_subjGender <- glmer(
  She ~ Condition * SubjGenderMale + (1|Participant) + (1|Item),
  data = exp1_d_subjGender, family = binomial)
summary(exp1_m_cond_subjGender)
```

```
## Generalized linear mixed model fit by maximum likelihood (Laplace
##   Approximation) [glmerMod]
##  Family: binomial  ( logit )
## Formula: She ~ Condition * SubjGenderMale + (1 | Participant) + (1 | Item)
##    Data: exp1_d_subjGender
##
##      AIC      BIC   logLik deviance df.resid
##   6209.6   6266.7  -3096.8   6193.6     9243
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -8.9913 -0.2996 -0.1427  0.2145 10.1263
##
## Random effects:
##  Groups      Name        Variance Std.Dev.
##  Participant (Intercept) 1.018    1.009
##  Item        (Intercept) 7.202    2.684
## Number of obs: 9251, groups:  Participant, 442; Item, 104
##
## Fixed effects:
##                                              Estimate Std. Error z value
## (Intercept)                                   -1.4241     0.3071  -4.637
## Conditionlast vs first/full                    2.8079     0.7018   4.001
## Conditionfirst vs full                         0.5860     0.6993   0.838
## SubjGenderMaleNM_M                            -0.2637     0.1209  -2.182
## Conditionlast vs first/full:SubjGenderMaleNM_M 0.3958     0.2700   1.466
## Conditionfirst vs full:SubjGenderMaleNM_M      0.4309     0.2830   1.522
##                                              Pr(>|z|)
## (Intercept)                                   3.53e-06 ***
## Conditionlast vs first/full                   6.31e-05 ***
## Conditionfirst vs full                        0.4021
## SubjGenderMaleNM_M                            0.0291 *
## Conditionlast vs first/full:SubjGenderMaleNM_M 0.1427
## Conditionfirst vs full:SubjGenderMaleNM_M     0.1279
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) Cvfrs/ Cndtvf SGMNM_ Cvf/:S
## Cndtnvfrst/ -0.181
## Cndtnfrstvf -0.360 -0.239
## SbjGndMNM_M -0.014 -0.006 -0.004
## Cvf/:SGMNM_ -0.006 -0.009 -0.003 -0.117
```

```
## Cvf:SGMNM_M -0.005 -0.002 -0.020 -0.008 -0.005
```

Male participants are less likely to respond *she* overall than non-male participants, but this is not significant after correcting for multiple comparisons. Neither interaction with Condition is significant.

Model 5: Condition * Name Gender * Participant Gender

Effects of Condition (first name, full name), the first name's Gender Rating (centered, positive=more feminine), and Participant Gender (non-male vs. male) on the likelihood of a *she* response as opposed to a *he* or *other* responses. In Experiment 1, the Last Name condition does not include any instances of the gendered first name, so it is not included here. The model with random intercepts does not converge with glmer, but does when using buildmer to find the maximal model (?).

```
exp1_m_nameGender_subjGender <- buildmer(
  formula = She ~ Condition * GenderRatingCentered * SubjGenderMale +
            (1|Participant) + (1|Item),
  data = exp1_d_FF_subjGender, family = binomial,
  buildmerControl(direction = c("order"), quiet = TRUE))
summary(exp1_m_nameGender_subjGender)
```

```
## Generalized linear mixed model fit by maximum likelihood (Laplace
##   Approximation) (p-values based on Wald z-scores) [glmerMod]
##  Family: binomial  ( logit )
## Formula: She ~ 1 + GenderRatingCentered + Condition + SubjGenderMale +
##     Condition:SubjGenderMale + GenderRatingCentered:SubjGenderMale +
##     GenderRatingCentered:Condition + GenderRatingCentered:Condition:SubjGenderMale +
##     (1 | Item)
##    Data: exp1_d_FF_subjGender
##
##      AIC      BIC   logLik deviance df.resid
##   4708.6   4769.1  -2345.3   4690.6     6155
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -5.7492 -0.3848 -0.0928  0.3758 16.6793
##
## Random effects:
##  Groups Name        Variance Std.Dev.
##  Item   (Intercept) 0.3698   0.6081
## Number of obs: 6164, groups:  Item, 83
##
## Fixed effects:
##                                                               Estimate
## (Intercept)                                                   -0.47422
## GenderRatingCentered                                           1.41461
## Conditionfirst vs full                                         0.45444
## SubjGenderMaleNM_M                                            -0.17431
## Conditionfirst vs full:SubjGenderMaleNM_M                      0.48353
## GenderRatingCentered:SubjGenderMaleNM_M                        0.13909
## GenderRatingCentered:Conditionfirst vs full                   -0.09910
## GenderRatingCentered:Conditionfirst vs full:SubjGenderMaleNM_M -0.26972
##                                                               Std. Error
```

```
## (Intercept)                                                          0.09401
## GenderRatingCentered                                                 0.06258
## Conditionfirst vs full                                               0.18844
## SubjGenderMaleNM_M                                                    0.07759
## Conditionfirst vs full:SubjGenderMaleNM_M                            0.15518
## GenderRatingCentered:SubjGenderMaleNM_M                              0.06684
## GenderRatingCentered:Conditionfirst vs full                         0.12233
## GenderRatingCentered:Conditionfirst vs full:SubjGenderMaleNM_M       0.13367
##                                                                      z value
## (Intercept)                                                         -5.04411
## GenderRatingCentered                                                22.60429
## Conditionfirst vs full                                               2.41158
## SubjGenderMaleNM_M                                                  -2.24641
## Conditionfirst vs full:SubjGenderMaleNM_M                            3.11592
## GenderRatingCentered:SubjGenderMaleNM_M                              2.08105
## GenderRatingCentered:Conditionfirst vs full                         -0.81009
## GenderRatingCentered:Conditionfirst vs full:SubjGenderMaleNM_M      -2.01777
##                                                                      Pr(>|z|)
## (Intercept)                                                          0.000
## GenderRatingCentered                                                 0.000
## Conditionfirst vs full                                               0.016
## SubjGenderMaleNM_M                                                   0.025
## Conditionfirst vs full:SubjGenderMaleNM_M                            0.002
## GenderRatingCentered:SubjGenderMaleNM_M                              0.037
## GenderRatingCentered:Conditionfirst vs full                         0.418
## GenderRatingCentered:Conditionfirst vs full:SubjGenderMaleNM_M       0.044
##                                                                      Pr(>|t|)
## (Intercept)                                                          4.56e-07 ***
## GenderRatingCentered                                                 < 2e-16 ***
## Conditionfirst vs full                                               0.01588 *
## SubjGenderMaleNM_M                                                   0.02468 *
## Conditionfirst vs full:SubjGenderMaleNM_M                            0.00183 **
## GenderRatingCentered:SubjGenderMaleNM_M                              0.03743 *
## GenderRatingCentered:Conditionfirst vs full                         0.41789
## GenderRatingCentered:Conditionfirst vs full:SubjGenderMaleNM_M       0.04362 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) GndrRC Cndtvf SGMNM_ Cvf:SG GRC:SG GnRC:Cvf
## GndrRtngCnt -0.207
## Cndtnfrstvf -0.414  0.131
## SbjGndMNM_M  0.005 -0.032 -0.056
## Cvf:SGMNM_M -0.055  0.052  0.005 -0.043
## GRC:SGMNM_M -0.037  0.027  0.057 -0.285  0.088
## GndrRtC:Cvf  0.116 -0.374 -0.199  0.053 -0.032 -0.089
## GRC:Cvf:SGM  0.057 -0.088 -0.037  0.088 -0.285 -0.056  0.026
```

- Participant Gender: n.s.

- Condition (First vs Full) * Participant Gender: There is a larger difference between the First and Full Name conditions for male participants (see means above), but this is n.s. after correcting for multiple comparisons.

- Name Gender * Participant Gender: There is a stronger effect of the first name gender rating for male

participants, but this is n.s. after correction for multiple comparisons.

- Condition (First vs Full) * Name Gender * Participant Gender: trending

Gender Rating Centering

The first name gender ratings aren't perfectly centered, partially because mostly-feminine/somewhat-masculine names are much less common than mostly-masculine/somewhat-feminine names.

```
mean(exp1_d$GenderRating, na.rm = TRUE)
```

```
## [1] 4.207042
```

Does it make a difference if we center it on 4, the mean of the scale, instead of 4.21, the mean of the items?

```
exp1_d_FF %<>% mutate(GenderRating4 = GenderRating - 4)
```

Model 6: Gender Rating Recentered

```
exp1_m_recenter <- glmer(
  She ~ Condition * GenderRating4 + (1|Participant) + (1|Item),
  data = exp1_d_FF, family = binomial)
summary(exp1_m_recenter)
```

```
## Generalized linear mixed model fit by maximum likelihood (Laplace
##   Approximation) [glmerMod]
##  Family: binomial  ( logit )
## Formula: She ~ Condition * GenderRating4 + (1 | Participant) + (1 | Item)
##    Data: exp1_d_FF
##
##      AIC      BIC   logLik deviance df.resid
##   4657.4   4698.0  -2322.7   4645.4     6366
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -9.1567 -0.3548 -0.0551  0.3126 14.3198
##
## Random effects:
##  Groups      Name        Variance Std.Dev.
##  Participant (Intercept) 0.889    0.9429
##  Item        (Intercept) 0.501    0.7078
## Number of obs: 6372, groups:  Participant, 305; Item, 83
##
## Fixed effects:
##                                 Estimate Std. Error z value Pr(>|z|)
## (Intercept)                     -0.84312    0.12346  -6.829 8.55e-12 ***
## Conditionfirst vs full           0.56825    0.24657   2.305   0.0212 *
## GenderRating4                    1.59329    0.07253  21.966  < 2e-16 ***
## Conditionfirst vs full:GenderRating4 -0.17493    0.13918  -1.257   0.2088
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##            (Intr) Cndtvf GndrR4
## Cndtnfrstvf -0.360
## GenderRtng4 -0.296  0.166
## Cvfll:GndR4  0.158 -0.284 -0.409
```

Here, the beta estimate for the intercept has a larger absolute value (-0.84 vs -0.51), and the beta estimate for the condition effect is slightly higher (0.57 vs 0.53).