

Pooled Analysis: Interaction Effects and Mini Meta-Analysis

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Table 4: Interaction Effects by Study

```
## Sample sizes:  
  
## Study 2 (Gender Biography): N = 302  
  
## Study 3A (Race Biopic): N = 1000  
  
## Study 3B (Gender Biopic): N = 1000  
  
## Study 4A (Race Author): N = 1000  
  
## Study 4B (Gender Author): N = 1000
```

Study 2: Gender (Biography Field Experiment)

```
## =====  
  
## STUDY 2: GENDER × BASE SELECTIONS INTERACTION  
  
## =====  
  
## Model: female_pick ~ gender_feedback * base_gender  
  
##  
## Call:  
## lm(formula = female_pick ~ gender_feedback * base_gender, data = d2)  
##  
## Residuals:  
##      Min      1Q Median      3Q     Max  
## -0.4254 -0.3344 -0.1954  0.5746  0.8660  
##  
## Coefficients:  
##                               Estimate Std. Error t value Pr(>|t|)  
## (Intercept)                 0.13400   0.05131   2.611 0.009476 **  
## gender_feedback              0.29145   0.08409   3.466 0.000606 ***  
## base_gender                  0.06138   0.03412   1.799 0.073076 .  
## gender_feedback:base_gender -0.10690   0.04647  -2.300 0.022111 *  
## ---  
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1  
##  
## Residual standard error: 0.4454 on 298 degrees of freedom  
## Multiple R-squared:  0.03897,    Adjusted R-squared:  0.0293  
## F-statistic: 4.028 on 3 and 298 DF,  p-value: 0.007859  
  
##                               2.5 %      97.5 %  
## (Intercept)                 0.033014060  0.23498151  
## gender_feedback              0.125960342  0.45694600  
## base_gender                  -0.005775044  0.12852826  
## gender_feedback:base_gender -0.198339010 -0.01545141
```

Study 3A: Race (Biopic Film)

```
## =====  
  
## STUDY 3A: RACE × BASE SELECTIONS INTERACTION  
  
## =====  
  
## Model: race_pick ~ race_feedback * base_race  
  
##  
## Call:  
## lm(formula = race_pick ~ race_feedback * base_race, data = d3a)  
##  
## Residuals:  
##      Min       1Q     Median      3Q      Max  
## -0.39468 -0.28297 -0.17126 -0.00706  0.90035  
##  
## Coefficients:  
##                               Estimate Std. Error t value Pr(>|t|)  
## (Intercept)             0.28481   0.03094   9.204 < 2e-16 ***  
## race_feedback           0.10987   0.04586   2.396   0.0168 *  
## base_race              -0.09258   0.01679  -5.513  4.5e-08 ***  
## race_feedback:base_race -0.01913   0.02618  -0.731   0.4651  
## ---  
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1  
##  
## Residual standard error: 0.4056 on 996 degrees of freedom  
## Multiple R-squared:  0.05743,    Adjusted R-squared:  0.05459  
## F-statistic: 20.23 on 3 and 996 DF,  p-value: 9.916e-13  
  
##                               2.5 %     97.5 %  
## (Intercept)             0.22409190  0.34553502  
## race_feedback           0.01988321  0.19985621  
## base_race              -0.12554064 -0.05962697  
## race_feedback:base_race -0.07049143  0.03223900
```

Study 3B: Gender (Biopic Film)

```
## =====  
  
## STUDY 3B: GENDER × BASE SELECTIONS INTERACTION  
  
## =====  
  
## Model: female_pick ~ gender_feedback * base_gender  
  
##  
## Call:  
## lm(formula = female_pick ~ gender_feedback * base_gender, data = d3b)  
##  
## Residuals:  
##      Min      1Q   Median      3Q      Max  
## -0.5000 -0.3209 -0.2009  0.5000  0.8037  
##  
## Coefficients:  
##                               Estimate Std. Error t value Pr(>|t|)  
## (Intercept)             0.203259  0.026338  7.717 2.88e-14 ***  
## gender_feedback          0.296789  0.041415  7.166 1.50e-12 ***  
## base_gender              -0.002316  0.017983 -0.129  0.8976  
## gender_feedback:base_gender -0.087253  0.027237 -3.204  0.0014 **  
## ---  
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1  
##  
## Residual standard error: 0.4449 on 996 degrees of freedom  
## Multiple R-squared:  0.06829,    Adjusted R-squared:  0.06549  
## F-statistic: 24.34 on 3 and 996 DF,  p-value: 3.355e-15  
  
##                               2.5 %      97.5 %  
## (Intercept)             0.15157470  0.25494265  
## gender_feedback          0.21551778  0.37805954  
## base_gender              -0.03760459  0.03297269  
## gender_feedback:base_gender -0.14070093 -0.03380532
```

Study 4A: Race (Author Selection)

```
## =====  
  
## STUDY 4A: RACE × BASE SELECTIONS INTERACTION  
  
## =====  
  
## Model: race_pick ~ race_feedback * base_race  
  
##  
## Call:  
## lm(formula = race_pick ~ race_feedback * base_race, data = d4a)  
##  
## Residuals:  
##      Min       1Q   Median       3Q      Max  
## -0.4883 -0.4153 -0.2716  0.5838  0.7718  
##  
## Coefficients:  
##                               Estimate Std. Error t value Pr(>|t|)  
## (Intercept)             0.22825   0.02640   8.645 < 2e-16 ***  
## race_feedback           0.18830   0.04091   4.603 4.71e-06 ***  
## base_race                0.04334   0.01603   2.703  0.00698 **  
## race_feedback:base_race -0.04375   0.02274  -1.924  0.05468 .  
## ---  
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1  
##  
## Residual standard error: 0.4712 on 996 degrees of freedom  
## Multiple R-squared:  0.02647,    Adjusted R-squared:  0.02353  
## F-statistic: 9.026 on 3 and 996 DF,  p-value: 6.711e-06  
  
##                               2.5 %     97.5 %  
## (Intercept)             0.17644011 0.2800687643  
## race_feedback           0.10801846 0.2685907129  
## base_race                0.01187909 0.0748073027  
## race_feedback:base_race -0.08838161 0.0008803192
```

Study 4B: Gender (Author Selection)

```
## =====  
  
## STUDY 4B: GENDER × BASE SELECTIONS INTERACTION  
  
## =====  
  
## Model: female_pick ~ gender_feedback * base_gender  
  
##  
## Call:  
## lm(formula = female_pick ~ gender_feedback * base_gender, data = d4b)  
##  
## Residuals:  
##      Min       1Q   Median       3Q      Max  
## -0.4987 -0.3313 -0.2908  0.5571  0.7803  
##  
## Coefficients:  
##                               Estimate Std. Error t value Pr(>|t|)  
## (Intercept)             0.310471  0.032335  9.602 < 2e-16 ***  
## gender_feedback          0.188241  0.046932  4.011 6.5e-05 ***  
## base_gender              -0.009813  0.015939 -0.616  0.538  
## gender_feedback:base_gender -0.045997  0.022363 -2.057  0.040 *  
## ---  
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1  
##  
## Residual standard error: 0.4732 on 996 degrees of freedom  
## Multiple R-squared:  0.02614,    Adjusted R-squared:  0.02321  
## F-statistic: 8.913 on 3 and 996 DF,  p-value: 7.865e-06  
  
##                               2.5 %     97.5 %  
## (Intercept)             0.24701844  0.373924055  
## gender_feedback          0.09614471  0.280337240  
## base_gender              -0.04109015  0.021464420  
## gender_feedback:base_gender -0.08988190 -0.002112093
```

Summary Table (Table 4)

```
## Study 2 (Gender):
##   B = -0.107, SE = 0.0465, t(298) = -2.30, p = 0.022
##   95% CI = [-0.198, -0.015]
##
## Study 3A (Race):
##   B = -0.019, SE = 0.0262, t(996) = -0.73, p = 0.465
##   95% CI = [-0.070, 0.032]
##
## Study 3B (Gender):
##   B = -0.087, SE = 0.0272, t(996) = -3.20, p = 0.001
##   95% CI = [-0.141, -0.034]
##
## Study 4A (Race):
##   B = -0.044, SE = 0.0227, t(996) = -1.92, p = 0.055
##   95% CI = [-0.088, 0.001]
##
## Study 4B (Gender):
##   B = -0.046, SE = 0.0224, t(996) = -2.06, p = 0.040
##   95% CI = [-0.090, -0.002]
```

Mini Meta-Analysis of Interaction Effects

```
meta_data <- data.frame(
  study = c("Study 2 (Gender)", "Study 3A (Race)", "Study 3B (Gender)",
            "Study 4A (Race)", "Study 4B (Gender)"),
  yi = c(coef_s2, coef_s3a, coef_s3b, coef_s4a, coef_s4b),
  sei = c(se_s2, se_s3a, se_s3b, se_s4a, se_s4b),
  ni = c(nrow(d2), nrow(d3a), nrow(d3b), nrow(d4a), nrow(d4b))
)

# =====
# Random-effects meta-analysis using REML
# =====

meta_result <- rma(yi = yi, sei = sei, data = meta_data, method = "REML")

summary(meta_result)

##
## Random-Effects Model (k = 5; tau^2 estimator: REML)
##
##    logLik  deviance      AIC      BIC      AICc
##    8.1614 -16.3228 -12.3228 -13.5502 -0.3228
##
## tau^2 (estimated amount of total heterogeneity): 0.0000 (SE = 0.0005)
## tau (square root of estimated tau^2 value):     0.0027
## I^2 (total heterogeneity / total variability): 1.02%
## H^2 (total variability / sampling variability): 1.01
##
## Test for Heterogeneity:
## Q(df = 4) = 4.8507, p-val = 0.3030
##
## Model Results:
##
## estimate      se      zval     pval    ci.lb    ci.ub
## -0.0516  0.0119 -4.3554  <.0001  -0.0749  -0.0284  ***
## 
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```