Barkan etal (2012) data analysis using randomly generated data - V4

Yvonne JIN

7/14/2022

```
df <- read_sav("NOCHECK - [RRR] Barkan et al. (2012) Ethical dissonance
[Yvonne Yaqi Jin] - V2_June 22, 2022_09.35.sav")
```

Study response processing

General measurements score calculation: Manipulation check and MASC uses averaged score of individual items.

Manipulation Check - Self Esteem Scale

```
df$ManiCheck <- df %>% dplyr::select(starts_with("ManiCheck")) %>% rowMeans()
# Add package name before function "select"
# to prevent confusion with same name functions in other packages
```

Study 3 MASC - Multi Aspect Scale of Cheating

```
df$MASC_set1 <- df %>% dplyr::select(starts_with("MASC_set1")) %>% rowMeans()
df$MASC_set2 <- df %>% dplyr::select(starts_with("MASC_set2")) %>% rowMeans()
df$MASC_set3 <- df %>% dplyr::select(starts_with("MASC_set3")) %>% rowMeans()
```

Study 3 BIDR - The Balanced Inventory of Desirable Responding

Scoring: Respondents are asked to rate the 40-items on a 7 point scale according to their level of agreement with the item (stated as propositions). The scoring key is balanced. All even number statements of self-deceptive positivity (former 20 statements) are negatively keyed. All odd number statements of impression management (latter 20 statements) are negatively keyed. After reversing the negatively keyed items, one point is added for each extreme response (6 or 7). Total scores on the both constructs can range from 0 to 20. Thus, high scores are only attained by respondents who give exaggeratedly desirable responses. All 40 items may be summed to give an overall measure of social desirable responding.

```
#------------------------------#
### self deceptive positivity

# positively keyed statements
BIDR_self_deceptive_odd <- df %>%
dplyr::select("BIDR_Self_deceptive_2","BIDR_Self_deceptive_4","BIDR_Self_dece
ptive_6","BIDR_Self_deceptive_8","BIDR_Self_deceptive_10","BIDR_Self_deceptiv
e_12","BIDR_Self_deceptive_14","BIDR_Self_deceptive_16","BIDR_Self_deceptive_
18","BIDR_Self_deceptive_20")
```

```r
# iterate the item to avoid counting variables like
"BIDR_Self_deceptive_DO_20"

BIDR_self_deceptive_odd_recode <-
as.data.frame(ifelse(BIDR_self_deceptive_odd > 5, 1,0))

# negatively keyed statements
BIDR_self_deceptive_even <- df %>%
dplyr::select("BIDR_Self_deceptive_1","BIDR_Self_deceptive_3","BIDR_Self_dece
ptive_5","BIDR_Self_deceptive_7","BIDR_Self_deceptive_9","BIDR_Self_deceptive
_11","BIDR_Self_deceptive_13","BIDR_Self_deceptive_15","BIDR_Self_deceptive_1
7","BIDR_Self_deceptive_19")

BIDR_self_deceptive_even_recode <-
as.data.frame(ifelse(BIDR_self_deceptive_even < 3, 1,0))

#---------------------------#
###  impression management

# positively keyed statements
BIDR_impre_manage_even <- df %>%

dplyr::select("BIDR_Impre_manage_2","BIDR_Impre_manage_4","BIDR_Impre_manage_
6","BIDR_Impre_manage_8","BIDR_Impre_manage_10","BIDR_Impre_manage_12","BIDR_
Impre_manage_14","BIDR_Impre_manage_16","BIDR_Impre_manage_18","BIDR_Impre_ma
nage_20")

BIDR_impre_manage_even_recode <- as.data.frame(ifelse(BIDR_impre_manage_even
> 5, 1,0))

# negatively keyed statements
BIDR_impre_manage_odd <- df %>%
dplyr::select("BIDR_Impre_manage_1","BIDR_Impre_manage_3","BIDR_Impre_manage_
5","BIDR_Impre_manage_7","BIDR_Impre_manage_9","BIDR_Impre_manage_11","BIDR_I
mpre_manage_13","BIDR_Impre_manage_15","BIDR_Impre_manage_17","BIDR_Impre_man
age_19")
# iterate the item to avoid counting variables like"BIDR_Impre_manage_DO_11"

BIDR_impre_manage_odd_recode <- as.data.frame(ifelse(BIDR_impre_manage_odd <
3, 1,0))

#-----------------------------------------#
# merge all recoded score into one dataframe

recode_BIDR_self_deceptive <- BIDR_self_deceptive_odd_recode %>%
  cbind(BIDR_self_deceptive_even_recode)

recode_BIDR_impre_manage <- BIDR_impre_manage_odd_recode %>%
  cbind(BIDR_impre_manage_even_recode)
```

```
# add up recoded score to form an overall score, add to main dataframe
df$BIDR_self_deceptive <- recode_BIDR_self_deceptive  %>% rowSums()
df$BIDR_impre_manage <- recode_BIDR_impre_manage  %>% rowSums()
```

Condition marking

Conditions allocated for each participants and the order of experiments presented are marked in Qualtrics by variables starting with "FL".

```
# find block order of conditions
block_order <- df %>% dplyr::select(starts_with("FL"))
colnames(block_order)

##  [1] "FL_9_DO_RecallManipulation_EthicalDissonancebyWriting_UnethicalB"
##  [2] "FL_9_DO_RecallManipulation_EthicalDissonanceWithoutWriting"
##  [3] "FL_9_DO_RecallManipulation_WorthyConduct"
##  [4] "FL_9_DO_RecallManipulation_Neutral"
##  [5] "FL_9_DO_RecallManipulation_NegativeValence"
##  [6] "FL_11_DO_Experiment1_HiringDecisionasHR"
##  [7] "FL_11_DO_FL_25"
##  [8] "FL_25_DO_Experiment2scenario1_JobInterviewAdvice"
##  [9] "FL_25_DO_FL_27"
## [10] "FL_27_DO_Experiment2scenario2_ExchangingProductAdvice_Female"
## [11] "FL_27_DO_Experiment2scenario2_ExchangingProductAdvice_Male"
## [12] "FL_38_DO_MultiAspectScaleofCheatingMASC_Set1"
## [13] "FL_38_DO_MultiAspectScaleofCheatingMASC_Set2"
## [14] "FL_38_DO_MultiAspectScaleofCheatingMASC_Set3"
## [15] "FL_38_DO_BalancedInventoryofDesirableRespondingBIDR_SelfDeceptiv"
## [16] "FL_38_DO_BalancedInventoryofDesirableRespondingBIDR_ImpressionMa"

# Mark study presentation order
df$study_order = ifelse(df$FL_11_DO_Experiment1_HiringDecisionasHR ==
1,"Exp1First","Exp2First")
```

Slicing dataframe into five recall conditions.

```
## ethical dissonance & writing response
ethi_dis_write <- df %>%
filter(FL_9_DO_RecallManipulation_EthicalDissonancebyWriting_UnethicalB == 1)
%>%
  dplyr::select("study_order",
         "ManiCheck", # precalculated average
         starts_with("Exp1"),
         starts_with("Exp2"),
         "MASC_set1", "MASC_set2", "MASC_set3", # precalculated average
         "BIDR_self_deceptive","BIDR_impre_manage", # precalculated
         age:CountryName) %>% #demographic data and condition marker
  mutate(condition = "Dissonance_write")

## ethical dissonance & writing response
```

```r
ethi_dis_nowrite <- df %>%
filter(FL_9_DO_RecallManipulation_EthicalDissonanceWithoutWriting == 1) %>%
  dplyr::select("study_order",
         "ManiCheck",
         starts_with("Exp1"),
         starts_with("Exp2"),
         "MASC_set1", "MASC_set2", "MASC_set3",
         "BIDR_self_deceptive","BIDR_impre_manage",
         age:CountryName) %>%
  mutate(condition = "Dissonance_no_write")

## control: worthy conduct
con_worthy <- df %>% filter(FL_9_DO_RecallManipulation_WorthyConduct == 1)
%>%
  dplyr::select("study_order",
         "ManiCheck",
         starts_with("Exp1"),
         starts_with("Exp2"),
         "MASC_set1", "MASC_set2", "MASC_set3",
         "BIDR_self_deceptive","BIDR_impre_manage",
         age:CountryName) %>%
  mutate(condition = "Worthy") # control condition: worthy conduct

## control: neutral event
con_neutral <- df %>% filter(FL_9_DO_RecallManipulation_Neutral == 1) %>%
  dplyr::select("study_order",
         "ManiCheck",
         starts_with("Exp1"),
         starts_with("Exp2"),
         "MASC_set1", "MASC_set2", "MASC_set3",
         "BIDR_self_deceptive","BIDR_impre_manage",
         age:CountryName) %>%
  mutate(condition = "Neutral") # control condition: Neutral behavior

## control: neutral event
con_nega <- df %>% filter(FL_9_DO_RecallManipulation_NegativeValence ==1) %>%
  dplyr::select("study_order",
         "ManiCheck",
         starts_with("Exp1"),
         starts_with("Exp2"),
         "MASC_set1", "MASC_set2", "MASC_set3",
         "BIDR_self_deceptive","BIDR_impre_manage",
         age:CountryName) %>%
  mutate(condition = "Negative") # control condition: negative valence
```

Combine data segments with condition marking.

```r
cleaned_df <- ethi_dis_write %>%
  rbind(ethi_dis_nowrite) %>%
  rbind(con_worthy) %>%
```

```
  rbind(con_neutral) %>%
  rbind(con_nega)

colnames(cleaned_df)
```

```
##  [1] "study_order"          "ManiCheck"            "Exp1_prob_hiring"
##  [4] "Exp1_loyalty"         "Exp1_honesty"         "Exp2_S1_seen_wrong"
##  [7] "Exp2_S1_self_action"  "Exp2_S1_guide_other"  "Exp2_S2F_seen_wrong"
## [10] "Exp2_S2F_self_action" "Exp2_S2F_guide_other" "Exp2_S2M_seen_wrong"
## [13] "Exp2_S2M_self_action" "Exp2_S2M_guide_other" "MASC_set1"
## [16] "MASC_set2"            "MASC_set3"            "BIDR_self_deceptive"
## [19] "BIDR_impre_manage"    "age"                  "gender"
## [22] "origcount"            "residence"            "soc_class"
## [25] "engunder"             "funnel_pay"           "assignmentId"
## [28] "hitId"                "CountryCode"          "CountryName"
## [31] "condition"
```

Response formatting for study 1 and study 2 DVs

Change the data type of DVs to numeric, so the ANOVA test and ggstatsplot works properly.

```
DVs <- c("Exp1_prob_hiring", "Exp1_loyalty","Exp1_honesty",
"Exp2_S1_seen_wrong", "Exp2_S1_self_action", "Exp2_S1_guide_other",
"Exp2_S2F_seen_wrong", "Exp2_S2F_self_action", "Exp2_S2F_guide_other",
"Exp2_S2M_seen_wrong", "Exp2_S2M_self_action","Exp2_S2M_guide_other")
cleaned_df[DVs] <- sapply(cleaned_df[DVs],as.numeric)
```

Merge study 2 scenario 2, female and male case together.

```
cleaned_df$Exp2_S2_seen_wrong_T2 =
coalesce(cleaned_df$Exp2_S2F_seen_wrong,cleaned_df$Exp2_S2M_seen_wrong)
cleaned_df$Exp2_S2_self_action_T2 =
coalesce(cleaned_df$Exp2_S2F_self_action,cleaned_df$Exp2_S2M_self_action)
cleaned_df$Exp2_S2_guide_other_T2 =
coalesce(cleaned_df$Exp2_S2F_guide_other,cleaned_df$Exp2_S2M_guide_other)

# output cleaned data
write.csv(cleaned_df, "stimulated_cleaned_data.csv",fileEncoding = "UTF-8")
```

Descriptive data

```
# Manipulation Check
## overall
jmv::descriptives(data = cleaned_df, vars = vars(ManiCheck))

##  Descriptives
##  ───────────────────────────────────
##                          ManiCheck
##  ───────────────────────────────────
##    N                          1000
##    Missing                       0
##    Mean                     2.9947
##    Median                   3.0000
##    Standard deviation      0.55788
##    Minimum                  1.5000
##    Maximum                  4.5000
##  ───────────────────────────────────

## by condition
jmv::descriptives(
    formula = ManiCheck ~ condition,
    data = cleaned_df,
    missing = FALSE,
    median = FALSE,
    variance = TRUE,
    min = FALSE,
    max = FALSE,
    ci = TRUE)
```

```
## Descriptives
## ───────────────────────────────────────────────────────────────
##                              condition              ManiCheck
## ───────────────────────────────────────────────────────────────
##   N                          Dissonance_no_write          199
##                              Dissonance_write             200
##                              Negative                     200
##                              Neutral                      201
##                              Worthy                       200
##   Mean                       Dissonance_no_write       3.0235
##                              Dissonance_write          2.9975
##                              Negative                  2.9250
##                              Neutral                   2.9751
##                              Worthy                    3.0525
##   95% CI mean lower bound    Dissonance_no_write       2.9396
##                              Dissonance_write          2.9205
##                              Negative                  2.8454
##                              Neutral                   2.8993
##                              Worthy                    2.9833
##   95% CI mean upper bound    Dissonance_no_write       3.1073
##                              Dissonance_write          3.0745
##                              Negative                  3.0046
##                              Neutral                   3.0509
##                              Worthy                    3.1217
##   Standard deviation         Dissonance_no_write      0.60373
##                              Dissonance_write         0.55554
##                              Negative                 0.57462
##                              Neutral                  0.54817
##                              Worthy                   0.49946
##   Variance                   Dissonance_no_write      0.36449
##                              Dissonance_write         0.30862
##                              Negative                 0.33019
##                              Neutral                  0.30049
##                              Worthy                   0.24946
## ───────────────────────────────────────────────────────────────
```

```r
# Study 1
## total
jmv::descriptives(data = cleaned_df, vars = vars(Exp1_prob_hiring, Exp1_loyalty, Exp1_honesty))
```

```
##  Descriptives
##  ──────────────────────────────────────────────────────────────────────────────
##                           Exp1_prob_hiring    Exp1_loyalty    Exp1_honesty
##  ──────────────────────────────────────────────────────────────────────────────
##    N                                  1000            1000            1000
##    Missing                               0               0               0
##    Mean                             4.9990          4.9600          4.9280
##    Median                           5.0000          5.0000          5.0000
##    Standard deviation               2.6122          2.5991          2.5560
##    Minimum                          1.0000          1.0000          1.0000
##    Maximum                          9.0000          9.0000          9.0000
##  ──────────────────────────────────────────────────────────────────────────────
```

```r
## by condition
jmv::descriptives(
    formula = Exp1_prob_hiring + Exp1_loyalty + Exp1_honesty ~ condition,
    data = cleaned_df,
    missing = FALSE, median = FALSE)
```

```
## Descriptives
## ─────────────────────────────────────────────────────────────────────────────────────
##                          condition             Exp1_prob_hiring    Exp1_loyalty    Exp1_honesty
## ─────────────────────────────────────────────────────────────────────────────────────
##   N                      Dissonance_no_write                199             199             199
##                          Dissonance_write                   200             200             200
##                          Negative                           200             200             200
##                          Neutral                            201             201             201
##                          Worthy                             200             200             200
##   Mean                   Dissonance_no_write             4.9849          4.9146          5.0402
##                          Dissonance_write                5.1450          4.8450          4.9800
##                          Negative                        4.9450          5.2400          4.7150
##                          Neutral                         5.0398          4.8607          4.8308
##                          Worthy                          4.8800          4.9400          5.0750
##   Standard deviation     Dissonance_no_write             2.5256          2.6738          2.6871
##                          Dissonance_write                2.5996          2.6450          2.5381
##                          Negative                        2.6414          2.5564          2.5389
##                          Neutral                         2.6605          2.5594          2.5261
##                          Worthy                          2.6497          2.5650          2.4941
##   Minimum                Dissonance_no_write             1.0000          1.0000          1.0000
##                          Dissonance_write                1.0000          1.0000          1.0000
##                          Negative                        1.0000          1.0000          1.0000
##                          Neutral                         1.0000          1.0000          1.0000
##                          Worthy                          1.0000          1.0000          1.0000
##   Maximum                Dissonance_no_write             9.0000          9.0000          9.0000
##                          Dissonance_write                9.0000          9.0000          9.0000
##                          Negative                        9.0000          9.0000          9.0000
##                          Neutral                         9.0000          9.0000          9.0000
##                          Worthy                          9.0000          9.0000          9.0000
## ─────────────────────────────────────────────────────────────────────────────────────
```

```r
# Study 2 scenario 1
## total
jmv::descriptives(
    data = cleaned_df,
    vars = vars(Exp2_S1_seen_wrong, Exp2_S1_self_action, Exp2_S1_guide_other),
    missing = FALSE, median = FALSE)
```

```
##  Descriptives
##  ───────────────────────────────────────────────────────────────────────────────────────────────
##                          Exp2_S1_seen_wrong    Exp2_S1_self_action    Exp2_S1_guide_other
##  ───────────────────────────────────────────────────────────────────────────────────────────────
##    N                                   1000                   1000                   1000
##    Mean                              5.1420                 5.0940                 5.1420
##    Standard deviation                2.6040                 2.6363                 2.5870
##    Minimum                           1.0000                 1.0000                 1.0000
##    Maximum                           9.0000                 9.0000                 9.0000
##  ───────────────────────────────────────────────────────────────────────────────────────────────
```

```r
## by condition
jmv::descriptives(
    formula = Exp2_S1_seen_wrong + Exp2_S1_self_action + Exp2_S1_guide_other ~ condition,
    data = cleaned_df,
    missing = FALSE, median = FALSE)
```

```
## Descriptives
## ─────────────────────────────────────────────────────────────────────────────────────────────────────────
##                               condition              Exp2_S1_seen_wrong    Exp2_S1_self_action    Exp2_S1_guide_other
## ─────────────────────────────────────────────────────────────────────────────────────────────────────────
##    N                          Dissonance_no_write                   199                    199                    199
##                               Dissonance_write                      200                    200                    200
##                               Negative                              200                    200                    200
##                               Neutral                               201                    201                    201
##                               Worthy                                200                    200                    200
##    Mean                       Dissonance_no_write                5.0352                 5.0553                 5.1005
##                               Dissonance_write                   4.8900                 4.9850                 5.2550
##                               Negative                           5.1700                 5.0150                 5.2300
##                               Neutral                            5.1294                 5.3632                 5.0100
##                               Worthy                             5.4850                 5.0500                 5.1150
##    Standard deviation         Dissonance_no_write                2.6080                 2.5863                 2.5366
##                               Dissonance_write                   2.5926                 2.6627                 2.5598
##                               Negative                           2.6621                 2.6362                 2.6233
##                               Neutral                            2.5046                 2.6538                 2.6476
##                               Worthy                             2.6391                 2.6500                 2.5836
##    Minimum                    Dissonance_no_write                1.0000                 1.0000                 1.0000
##                               Dissonance_write                   1.0000                 1.0000                 1.0000
##                               Negative                           1.0000                 1.0000                 1.0000
##                               Neutral                            1.0000                 1.0000                 1.0000
##                               Worthy                             1.0000                 1.0000                 1.0000
##    Maximum                    Dissonance_no_write                9.0000                 9.0000                 9.0000
##                               Dissonance_write                   9.0000                 9.0000                 9.0000
##                               Negative                           9.0000                 9.0000                 9.0000
##                               Neutral                            9.0000                 9.0000                 9.0000
##                               Worthy                             9.0000                 9.0000                 9.0000
## ─────────────────────────────────────────────────────────────────────────────────────────────────────────
```

```
# Study scenario 2
## total
jmv::descriptives(
    data = cleaned_df,
    vars = vars(Exp2_S2_seen_wrong_T2, Exp2_S2_self_action_T2, Exp2_S2_guide_other_T2),
    missing = FALSE, median = FALSE)

##  Descriptives
##  ───────────────────────────────────────────────────────────────────────────────────────────────────
##                            Exp2_S2_seen_wrong_T2    Exp2_S2_self_action_T2    Exp2_S2_guide_other_T2
##  ───────────────────────────────────────────────────────────────────────────────────────────────────
##    N                                        1000                      1000                      1000
##    Mean                                   5.0620                    5.0780                    4.9700
##    Standard deviation                     2.4804                    2.5827                    2.6130
##    Minimum                                1.0000                    1.0000                    1.0000
##    Maximum                                9.0000                    9.0000                    9.0000
##  ───────────────────────────────────────────────────────────────────────────────────────────────────

## by condition
jmv::descriptives(
    formula = Exp2_S2_seen_wrong_T2 + Exp2_S2_self_action_T2 + Exp2_S2_guide_other_T2 ~ condition,
    data = cleaned_df,
    missing = FALSE, median = FALSE)

##  Descriptives
##
──────────────────────────────────────────────────────────────────────────────────────────────────────────────────────
##                           condition             Exp2_S2_seen_wrong_T2    Exp2_S2_self_action_T2    Exp2_S2_guide_other_T2
##
──────────────────────────────────────────────────────────────────────────────────────────────────────────────────────
##    N                      Dissonance_no_write                     199                       199                       199
##                           Dissonance_write                        200                       200                       200
##                           Negative                                200                       200                       200
##                           Neutral                                 201                       201                       201
##                           Worthy                                  200                       200                       200
##    Mean                   Dissonance_no_write                  5.2663                    4.8442                    5.1508
##                           Dissonance_write                     5.4100                    5.0050                    4.7400
##                           Negative                             4.8350                    5.2050                    5.3500
##                           Neutral                              5.0299                    5.0547                    4.4876
##                           Worthy                               4.7700                    5.2800                    5.1250
##    Standard deviation     Dissonance_no_write                  2.4109                    2.6055                    2.5893
##                           Dissonance_write                     2.3386                    2.5053                    2.6357
##                           Negative                             2.5258                    2.7295                    2.5770
```

```
##                          Neutral                                2.5766                   2.6042                   2.6117
##                          Worthy                                 2.5057                   2.4641                   2.5832
##     Minimum              Dissonance_no_write                    1.0000                   1.0000                   1.0000
##                          Dissonance_write                       1.0000                   1.0000                   1.0000
##                          Negative                               1.0000                   1.0000                   1.0000
##                          Neutral                                1.0000                   1.0000                   1.0000
##                          Worthy                                 1.0000                   1.0000                   1.0000
##     Maximum              Dissonance_no_write                    9.0000                   9.0000                   9.0000
##                          Dissonance_write                       9.0000                   9.0000                   9.0000
##                          Negative                               9.0000                   9.0000                   9.0000
##                          Neutral                                9.0000                   9.0000                   9.0000
##                          Worthy                                 9.0000                   9.0000                   9.0000
##
─────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────

# Study 3
## total
jmv::descriptives(
    data = cleaned_df,
    vars = vars(MASC_set1, MASC_set2, MASC_set3, BIDR_self_deceptive, BIDR_impre_manage))

##  Descriptives
##  ─────────────────────────────────────────────────────────────────────────────────────────────────────────
##                           MASC_set1    MASC_set2    MASC_set3    BIDR_self_deceptive    BIDR_impre_manage
##  ─────────────────────────────────────────────────────────────────────────────────────────────────────────
##    N                           1000         1000         1000                   1000                 1000
##    Missing                        0            0            0                      0                    0
##    Mean                      4.2504       3.7433       4.0185                 5.7450               5.6970
##    Median                    4.2500       3.7500       4.0000                 6.0000               6.0000
##    Standard deviation       0.36106      0.40792       1.4358                 2.0323               1.9988
##    Minimum                   3.1250       2.5833       1.0000                 1.0000               1.0000
##    Maximum                   5.3125       4.9167       7.0000                 13.000               13.000
##  ─────────────────────────────────────────────────────────────────────────────────────────────────────────

## condition
jmv::descriptives(
    formula = MASC_set1 + MASC_set2 + MASC_set3 + BIDR_self_deceptive + BIDR_impre_manage ~ condition,
    data = cleaned_df,
    missing = FALSE, median = FALSE)
```

Descriptives

	condition	MASC_set1	MASC_set2	MASC_set3	BIDR_self_deceptive	BIDR_impre_manage
N	Dissonance_no_write	199	199	199	199	199
	Dissonance_write	200	200	200	200	200
	Negative	200	200	200	200	200
	Neutral	201	201	201	201	201
	Worthy	200	200	200	200	200
Mean	Dissonance_no_write	4.2349	3.7638	4.0653	5.8141	5.7337
	Dissonance_write	4.2606	3.7846	4.0050	5.8150	5.7200
	Negative	4.2606	3.7033	4.0500	5.6550	5.6550
	Neutral	4.2525	3.7430	4.0373	5.7612	5.6915
	Worthy	4.2431	3.7221	3.9350	5.6800	5.6850
Standard deviation	Dissonance_no_write	0.36058	0.36706	1.4867	1.9438	2.1259
	Dissonance_write	0.35328	0.41757	1.4562	2.1480	1.8866
	Negative	0.35978	0.43863	1.3800	2.0899	1.9965
	Neutral	0.38679	0.42743	1.4688	1.9138	2.1271
	Worthy	0.34636	0.38305	1.3948	2.0710	1.8609
Minimum	Dissonance_no_write	3.3750	2.8333	1.0000	1.0000	1.0000
	Dissonance_write	3.2500	2.5833	1.0000	2.0000	1.0000
	Negative	3.1250	2.7500	1.0000	1.0000	1.0000
	Neutral	3.1875	2.5833	1.0000	1.0000	1.0000
	Worthy	3.1875	2.5833	1.0000	2.0000	2.0000
Maximum	Dissonance_no_write	5.0000	4.6667	7.0000	12.000	13.000
	Dissonance_write	5.1250	4.9167	7.0000	13.000	10.000
	Negative	5.2500	4.9167	7.0000	12.000	11.000
	Neutral	5.3125	4.9167	7.0000	13.000	12.000
	Worthy	5.1250	4.7500	7.0000	12.000	11.000

```r
# Age and Gender distribution
jmv::descriptives(
    data = cleaned_df,
    vars = vars(age, gender))

##
##  DESCRIPTIVES
##
##  Descriptives
##  ──────────────────────────────────────────
##                              age      gender
##  ──────────────────────────────────────────
##    N                         1000      1000
##    Missing                      0         0
##    Mean                    50.430    2.5110
##    Median                  51.000    3.0000
##    Standard deviation      28.796    1.1077
##    Minimum                 0.0000    1.0000
##    Maximum                 100.00    4.0000
##  ──────────────────────────────────────────

# plot descriptive table
#tableby.control()
#table_one <- tableby(age ~ ., data = cleaned_df)
#table_one
#summary(table_one, title = "Descriptive Data")
```

Planned Analysis - Main Analysis

Manipulation check - ANOVA

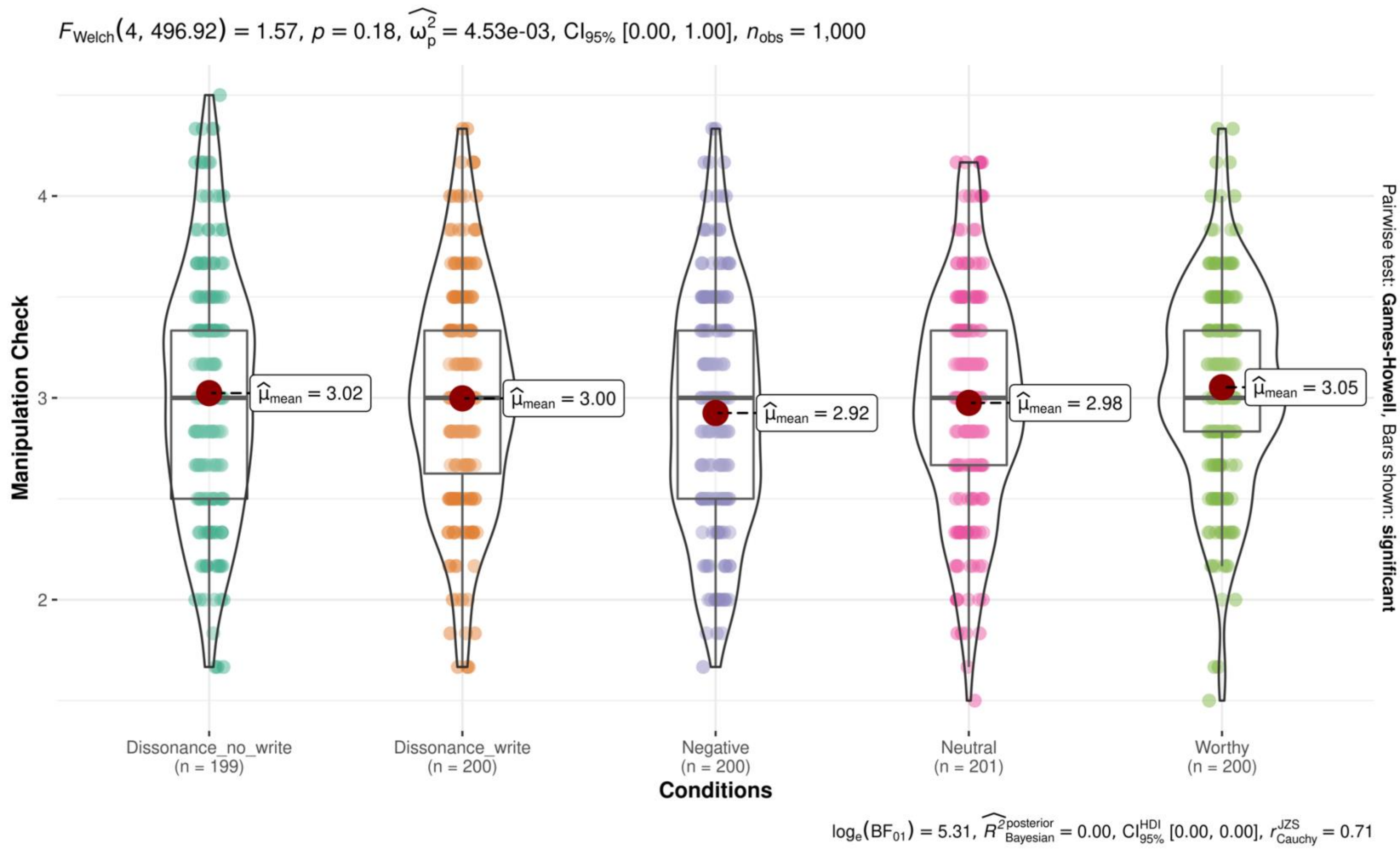
```
jmv::ANOVA(
    formula = ManiCheck ~ condition,
    data = cleaned_df,
    effectSize = "eta",
    modelTest = TRUE,
    homo = TRUE,
    postHocES = "d",
    postHocEsCi = TRUE,
    #emMeans = ~ condition,
    emmTables = TRUE)

##  ANOVA - ManiCheck
##  ─────────────────────────────────────────────────────────────────────────────────────────
##                       Sum of Squares    df     Mean Square    F         p          η²
##  ─────────────────────────────────────────────────────────────────────────────────────────
##    Overall model              1.8829      4        0.47072    1.5156    0.19545
##    condition                  1.8829      4        0.47072    1.5156    0.19545    0.00606
##    Residuals                309.0331    995        0.31059
##  ─────────────────────────────────────────────────────────────────────────────────────────


##  ASSUMPTION CHECKS
##
##  Homogeneity of Variances Test (Levene's)
##  ────────────────────────────────────────
##    F         df1    df2    p
##  ────────────────────────────────────────
##    2.6690      4    995    0.03105
##  ────────────────────────────────────────

# plot the APA style table
ANOVA_mani_check <- lm(ManiCheck ~ condition, data = cleaned_df)
```

```r
# plot ggstatsplot and save
ggstatsplot::ggbetweenstats(
    data = cleaned_df, y = ManiCheck, x = condition,
    originaltheme = TRUE,
    ylab = "Manipulation Check", xlab = "Conditions")
```




```r
# save the table and plot to local folder. Might interrupt with knitting, hence disabled after export.
apa.aov.table(ANOVA_mani_check, filename = "Manipulation check ANOVA.doc",table.number = 1)
ggsave("ManipulationCheck_plot.png",plot = ManipulationCheck_plot,
  width = 9, height = 5.5,dpi = 600)
```

Study 1 - ANOVA

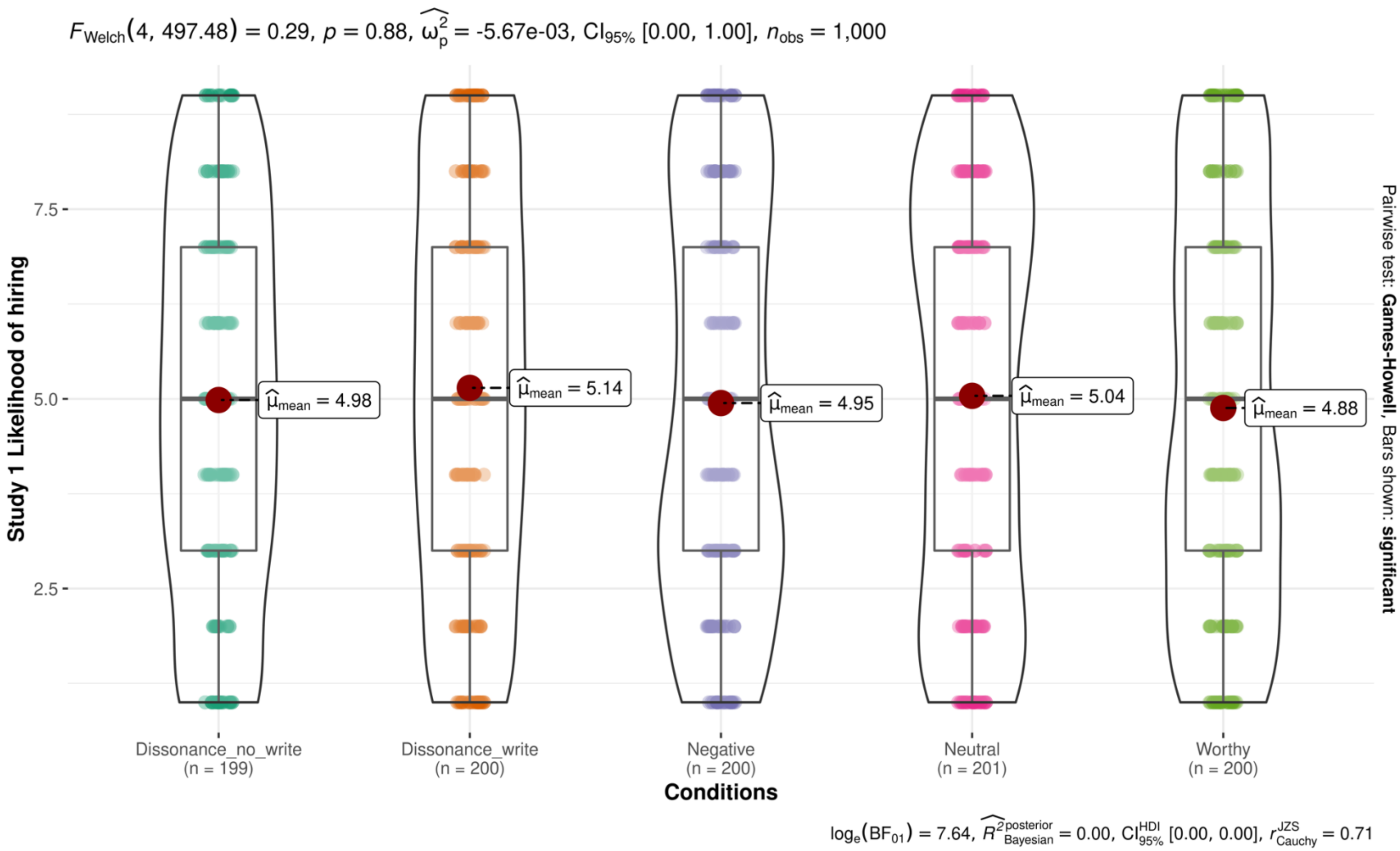
Study 1 DV1 - Likelihood of Hiring the canditate with ethically questionable behavior.

```
jmv::ANOVA(
    formula = Exp1_prob_hiring ~ condition,
    data = cleaned_df,
    effectSize = "eta",
    modelTest = TRUE,
    homo = TRUE,
    postHocES = "d",
    postHocEsCi = TRUE,
    emmTables = TRUE)

##  ANOVA - Exp1_prob_hiring
##  ───────────────────────────────────────────────────────────────────────────────────────────
##                         Sum of Squares    df     Mean Square    F          p          η²
##  ───────────────────────────────────────────────────────────────────────────────────────────
##    Overall model                8.0526      4         2.0132    0.29419    0.88183
##    condition                    8.0526      4         2.0132    0.29419    0.88183    0.00118
##    Residuals                 6808.9464    995         6.8432
##  ───────────────────────────────────────────────────────────────────────────────────────────
##
##
##  ASSUMPTION CHECKS
##
##  Homogeneity of Variances Test (Levene's)
##  ────────────────────────────────────────
##    F          df1    df2    p
##  ────────────────────────────────────────
##    0.80689      4    995    0.52081
##  ────────────────────────────────────────

ANOVA_Study1_DV1 <- lm(Exp1_prob_hiring ~ condition, data = cleaned_df)
```

```
# plot ggstatsplot and save
ggstatsplot::ggbetweenstats(
    data = cleaned_df, y = Exp1_prob_hiring, x = condition,
    originaltheme = TRUE,
    ylab = "Study 1 Likelihood of hiring", xlab = "Conditions")
```




```
apa.aov.table(ANOVA_Study1_DV1, filename = "Exp1 DV1 ANOVA.doc",table.number = 2)
ggsave(
  "Study1DV1Hiring.png", plot = last_plot(),
  width = 9, height = 5.5, dpi = 600)
```

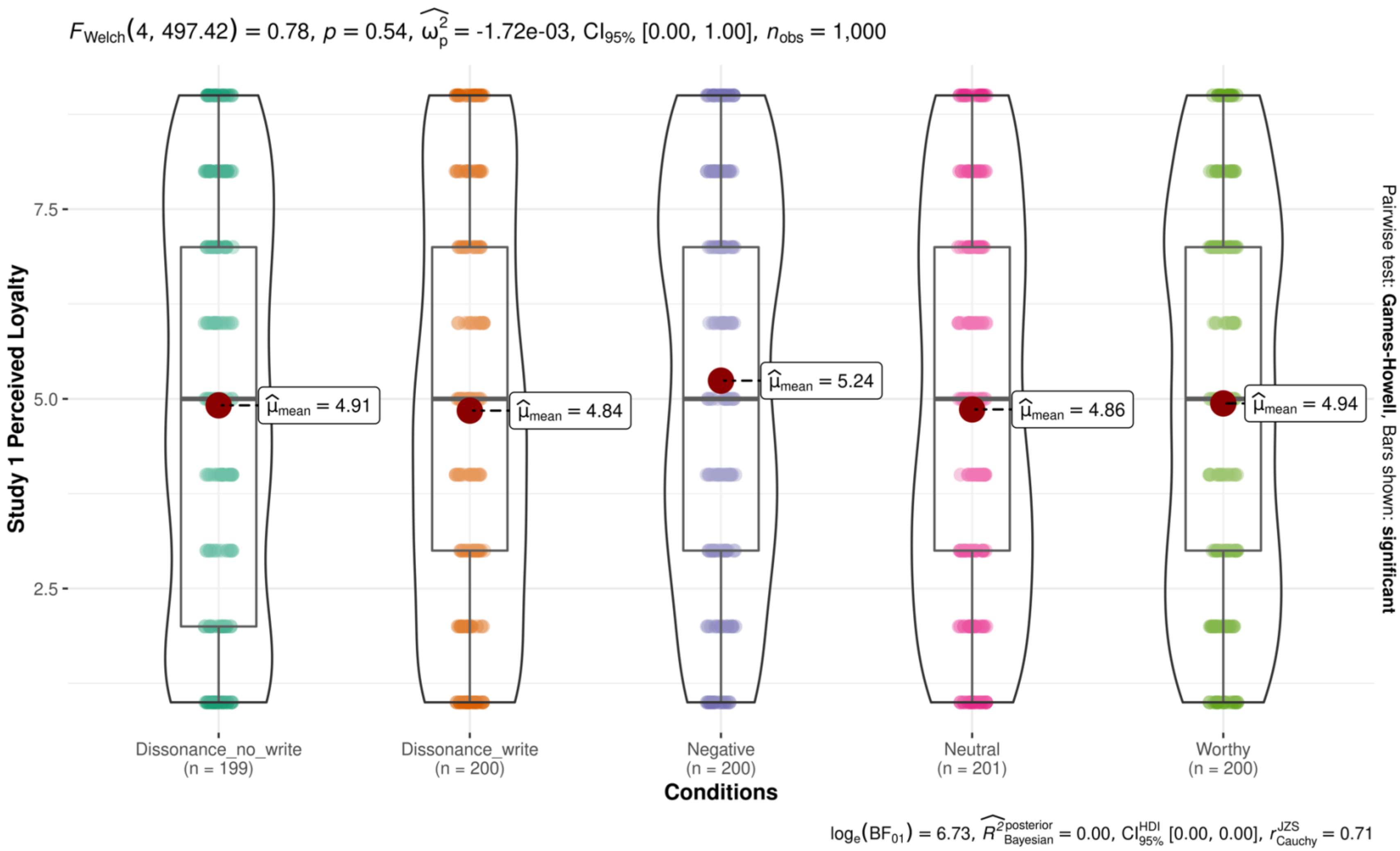
Study 1 DV2 - Perceived Loyalty to company if the candidate is hired.

```
jmv::ANOVA(
    formula = Exp1_loyalty ~ condition,
    data = cleaned_df,
    effectSize = "eta",
    modelTest = TRUE,
    homo = TRUE,
    postHocES = "d",
    postHocEsCi = TRUE,
    emmTables = TRUE)

##  ANOVA - Exp1_loyalty
##  ─────────────────────────────────────────────────────────────────────────────────────────────
##                     Sum of Squares    df     Mean Square    F          p          η²
##  ─────────────────────────────────────────────────────────────────────────────────────────────
##    Overall model            20.798      4         5.1994    0.76899    0.54547
##    condition                20.798      4         5.1994    0.76899    0.54547    0.00308
##    Residuals              6727.602    995         6.7614
##  ─────────────────────────────────────────────────────────────────────────────────────────────
##
##
##  ASSUMPTION CHECKS
##
##  Homogeneity of Variances Test (Levene's)
##  ────────────────────────────────────────
##    F          df1    df2    p
##  ────────────────────────────────────────
##    0.19355      4    995    0.94181
##  ────────────────────────────────────────

ANOVA_exp1_DV2 <- lm(Exp1_loyalty ~ condition, data = cleaned_df)
```

```r
# plot ggstatsplot and save
ggstatsplot::ggbetweenstats(
    data = cleaned_df, y = Exp1_loyalty, x = condition,
    originaltheme = TRUE,
    ylab = "Study 1 Perceived Loyalty", xlab = "Conditions")
```




```r
apa.aov.table(ANOVA_exp1_DV2, filename = "Exp1 DV2 ANOVA.doc",table.number = 3)
ggsave(
  "Study1DV2Loyalty.png", plot = last_plot(),
  width = 9, height = 5.5, dpi = 600)
```

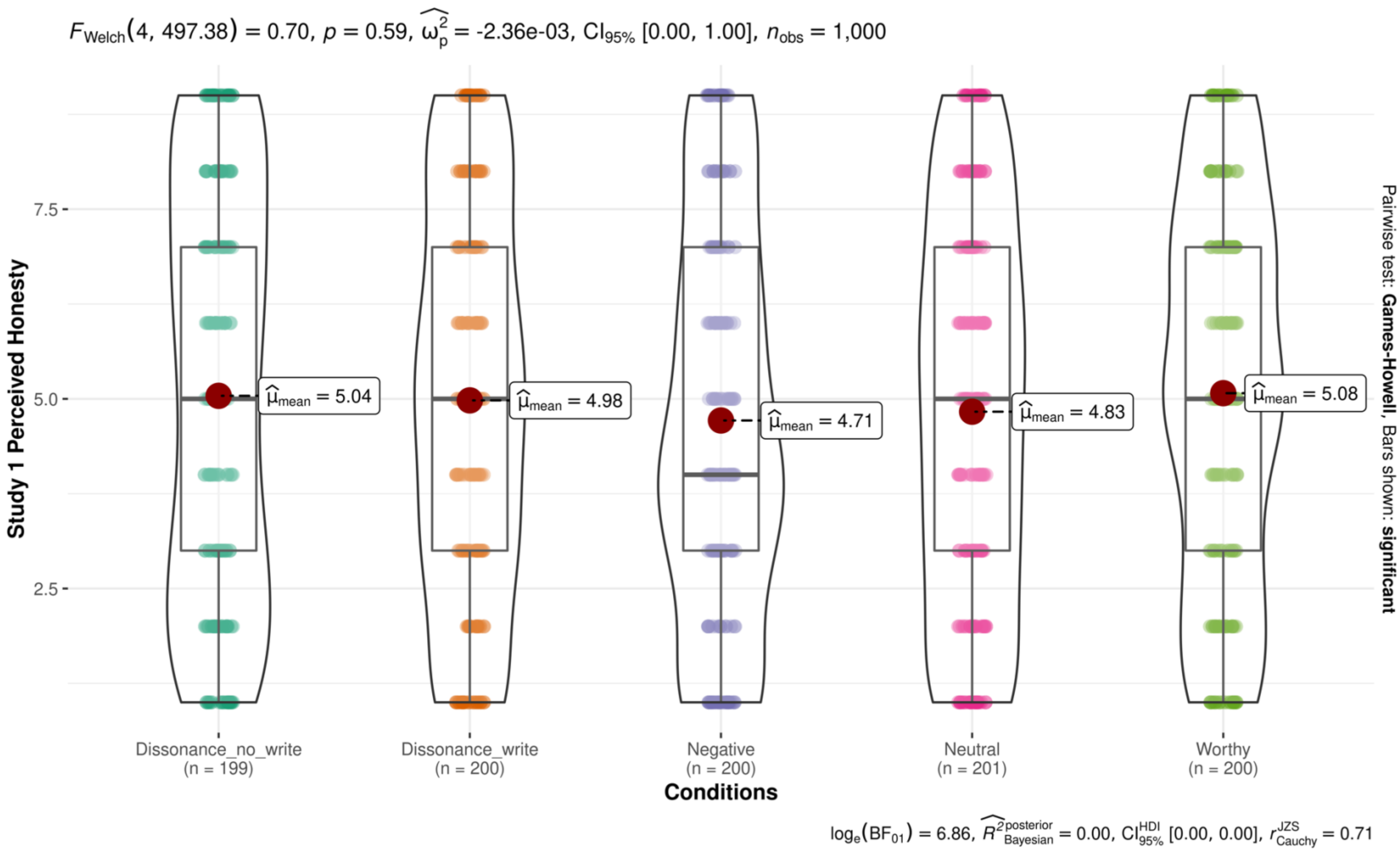
Study 1 DV3 - Perceived honesty of the candidate.

```
jmv::ANOVA(
    formula = Exp1_honesty ~ condition,
    data = cleaned_df,
    effectSize = "eta",
    modelTest = TRUE,
    homo = TRUE,
    postHocES = "d",
    postHocEsCi = TRUE,
    emmTables = TRUE)


##  ANOVA - Exp1_honesty
##  ─────────────────────────────────────────────────────────────────────────────────────────────
##                        Sum of Squares    df     Mean Square    F          p          η²
##  ─────────────────────────────────────────────────────────────────────────────────────────────
##    Overall model               18.339      4         4.5847    0.70090    0.59141
##    condition                   18.339      4         4.5847    0.70090    0.59141    0.00281
##    Residuals                 6508.477    995         6.5412
##  ─────────────────────────────────────────────────────────────────────────────────────────────
##
##
##  ASSUMPTION CHECKS
##
##  Homogeneity of Variances Test (Levene's)
##  ────────────────────────────────────────
##    F         df1    df2    p
##  ────────────────────────────────────────
##    1.2563      4    995    0.28548
##  ────────────────────────────────────────

ANOVA_exp1_DV3 <- lm(Exp1_honesty ~ condition, data = cleaned_df)
```

```r
# plot ggstatsplot and save
ggstatsplot::ggbetweenstats(
    data = cleaned_df, y = Exp1_honesty, x = condition,
    originaltheme = TRUE,
    ylab = "Study 1 Perceived Honesty", xlab = "Conditions")
```




```r
apa.aov.table(ANOVA_exp1_DV3, filename = "Exp1 DV3 ANOVA.doc",table.number = 4)
ggsave(
  "Study1DV3Honesty.png", plot = last_plot(),
  width = 9, height = 5.5, dpi = 600)
```

Study 2 - Repeated ANOVA

Pivot to long format for ggstatsplot.

```
# add a column of unique participant ID
cleaned_df <- dplyr::mutate(cleaned_df, ID = row_number())

#pivot longer
df_s2DV1 <- pivot_longer(cleaned_df, cols = c(Exp2_S1_seen_wrong, Exp2_S2_seen_wrong_T2),names_to =
"scenario",values_to = "Exp2_seen_wrong")
df_s2DV2 <- pivot_longer(cleaned_df, cols = c(Exp2_S1_self_action, Exp2_S2_self_action_T2),names_to =
"scenario",values_to = "Exp2_self_action")
df_s2DV3<- pivot_longer(cleaned_df, cols = c(Exp2_S1_guide_other, Exp2_S2_guide_other_T2),names_to =
"scenario",values_to = "Exp2_guide_other")

# combine three DVs
df_s2long <- df_s2DV1 %>% dplyr::select("ID","condition","scenario","Exp2_seen_wrong") %>%
dplyr::mutate(Exp2_seen_wrong = as.numeric(Exp2_seen_wrong)) %>%
  cbind(Exp2_self_action = as.numeric(df_s2DV2$Exp2_self_action)) %>%
  cbind(Exp2_guide_other = as.numeric(df_s2DV3$Exp2_guide_other))

# rename the scenario variable for plotting
df_s2long <- df_s2long %>%
  mutate(scenario = case_when(
    scenario == "Exp2_S1_seen_wrong" ~ "Scenario 1 Leaking interview questions",
    scenario == "Exp2_S2_seen_wrong_T2" ~ "Scenario 2 Changing used product"))
```

Study 2 DV2 - Perception of suggested actions as wrong.

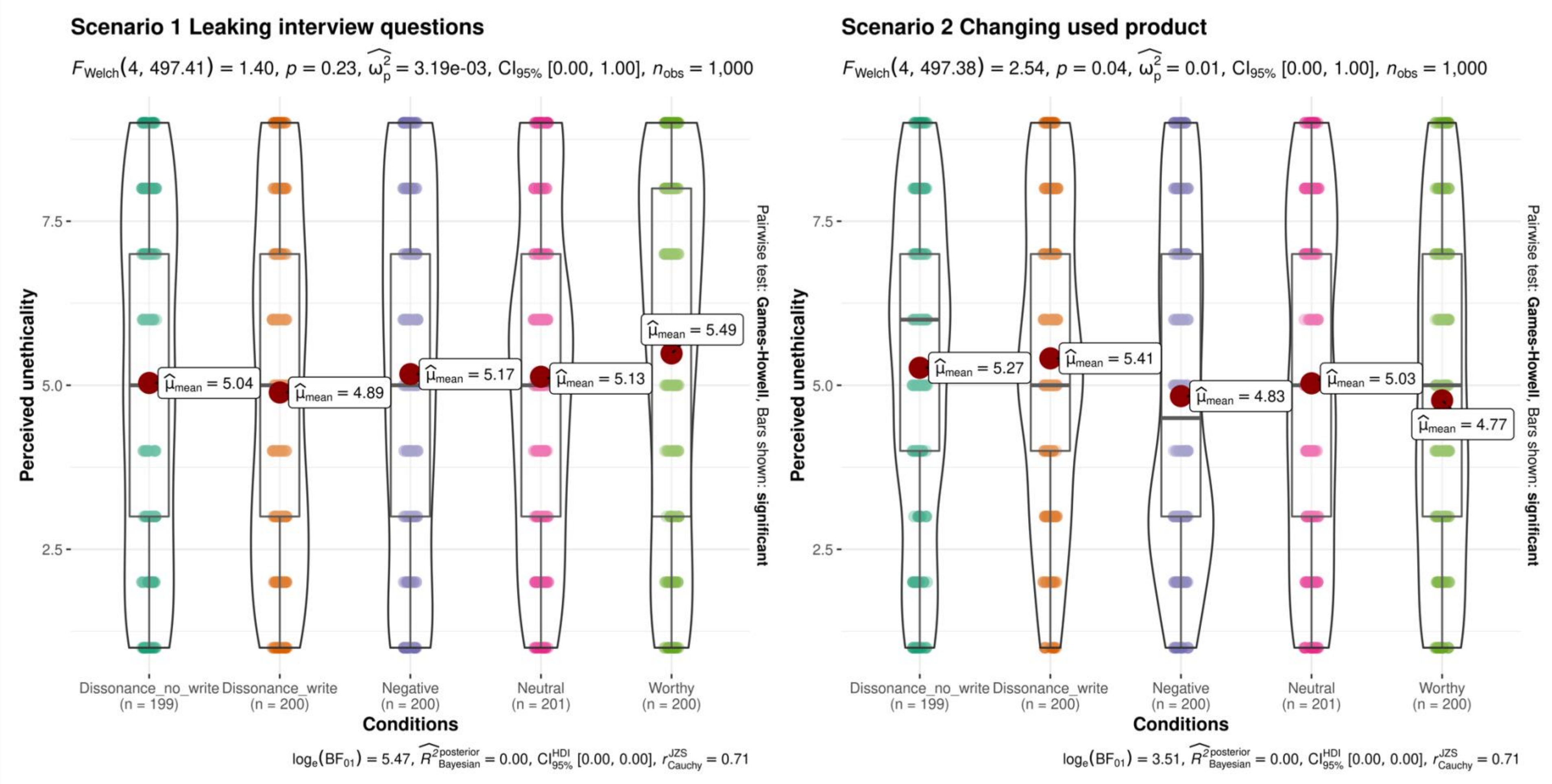
```
jmv::anovaRM(
    data = cleaned_df,
    rm = list(
        list(
            label="scenario",
            levels=c("S1", "S2"))),
    rmCells = list(
        list(
            measure="Exp2_S1_seen_wrong",
            cell="S1"),
        list(
            measure="Exp2_S2_seen_wrong_T2",
            cell="S2")),
    bs = condition,
    effectSize = "eta",
    rmTerms = ~ scenario,
    bsTerms = ~ condition,
    leveneTest = TRUE,
    #emMeans = ~ scenario:condition,
    emmTables = TRUE,
    groupSumm = TRUE)

##
##  REPEATED MEASURES ANOVA
##
##  Within Subjects Effects
##  ───────────────────────────────────────────────────────────────────────────────────────────────
##                           Sum of Squares    df     Mean Square    F          p          η²
##  ───────────────────────────────────────────────────────────────────────────────────────────────
##    scenario                       3.1736      1          3.1736    0.50144    0.47904    0.00025
##    scenario:condition            92.4966      4         23.1242    3.65371    0.00580    0.00716
##    Residual                    6297.3034    995          6.3289
##  ───────────────────────────────────────────────────────────────────────────────────────────────
##    Note. Type 3 Sums of Squares
##
##
```

```
##  Between Subjects Effects
##  ─────────────────────────────────────────────────────────────────────────────────────
##                    Sum of Squares    df     Mean Square    F          p          η²
##  ─────────────────────────────────────────────────────────────────────────────────────
##    condition              6.2895      4          1.5724    0.23981    0.91584    0.00049
##    Residual            6523.9025    995          6.5567
##  ─────────────────────────────────────────────────────────────────────────────────────
##    Note. Type 3 Sums of Squares
##
##
##  ASSUMPTIONS
##
##  Homogeneity of Variances Test (Levene's)
##  ─────────────────────────────────────────────────────────────
##                                F          df1    df2    p
##  ─────────────────────────────────────────────────────────────
##    Exp2_S1_seen_wrong       0.66907      4    995    0.61353
##    Exp2_S2_seen_wrong_T2    1.58287      4    995    0.17664
##  ─────────────────────────────────────────────────────────────
##
##
##  Group Summary
##  ──────────────────────────────────────────
##    condition               N      Excluded
##  ──────────────────────────────────────────
##    Dissonance_no_write    199            0
##    Dissonance_write       200            0
##    Negative               200            0
##    Neutral                201            0
##    Worthy                 200            0
##  ──────────────────────────────────────────

# ggstatsplot for condition comparisons in between-subjects designs repeated across all levels of a grouping variable.
# link to tutorial: https://indrajeetpatil.github.io/ggstatsplot/reference/grouped_ggbetweenstats.html
```

```
ggstatsplot::grouped_ggbetweenstats(
  data = df_s2long, y = Exp2_seen_wrong, x = condition,
  grouping.var = scenario,
  ylab = "Perceived unethicality",xlab = "Conditions")
```




```
ggsave(
  "Study2DV1SeenWrong.png", plot = last_plot(),
  width = 11.8, height = 6, dpi = 600)
```

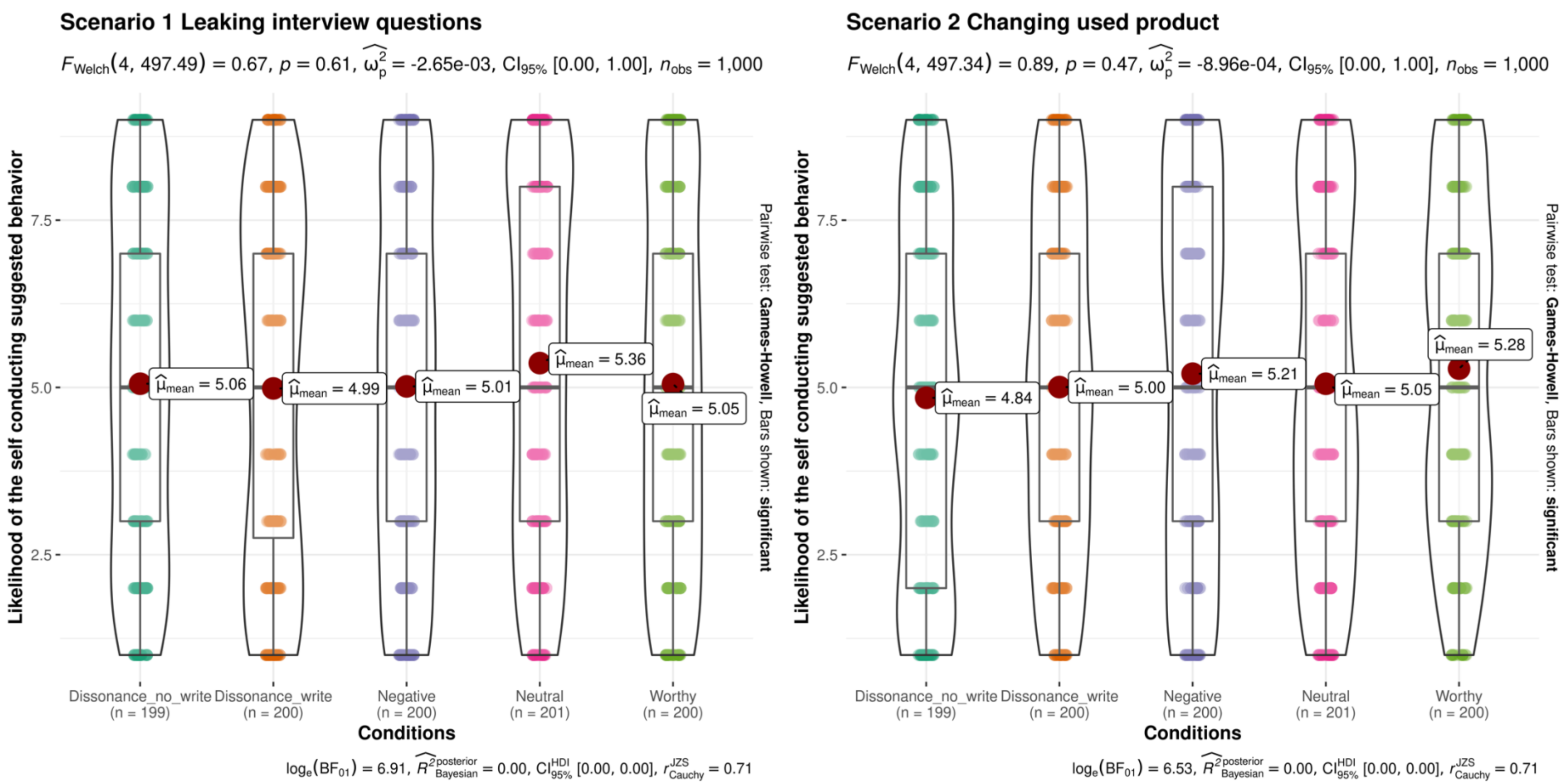
Study 2 DV2 - Likelihood of the self conducting similar behavior.

```
jmv::anovaRM(
    data = cleaned_df,
    rm = list(
        list(
            label="scenario",
            levels=c("S1", "S2"))),
    rmCells = list(
        list(
            measure="Exp2_S1_self_action",
            cell="S1"),
        list(
            measure="Exp2_S2_self_action_T2",
            cell="S2")),
    bs = condition,
    effectSize = "eta",
    rmTerms = ~ scenario,
    bsTerms = ~ condition,
    leveneTest = TRUE,
    #emMeans = ~ scenario:condition,
    emmTables = TRUE,
    groupSumm = TRUE)

##
##  REPEATED MEASURES ANOVA
##
##  Within Subjects Effects
##  ────────────────────────────────────────────────────────────────────────────────────────────────
##                            Sum of Squares    df     Mean Square    F           p          η²
##  ────────────────────────────────────────────────────────────────────────────────────────────────
##    scenario                       0.12645      1        0.12645    0.017775    0.89396    0.00001
##    scenario:condition            22.80635      4        5.70159    0.801501    0.52427    0.00168
##    Residual                    7078.06565    995        7.11363
##  ────────────────────────────────────────────────────────────────────────────────────────────────
##    Note. Type 3 Sums of Squares
##
##
```

```
##  Between Subjects Effects
##  ─────────────────────────────────────────────────────────────────────────────────────────
##                    Sum of Squares    df     Mean Square    F          p          η²
##  ─────────────────────────────────────────────────────────────────────────────────────────
##    condition               19.505      4         4.8763    0.74798    0.55943    0.00143
##    Residual              6486.703    995         6.5193
##  ─────────────────────────────────────────────────────────────────────────────────────────
##    Note. Type 3 Sums of Squares
##
##
##  ASSUMPTIONS
##
##  Homogeneity of Variances Test (Levene's)
##  ──────────────────────────────────────────────────────────────
##                                 F          df1    df2    p
##  ──────────────────────────────────────────────────────────────
##    Exp2_S1_self_action       0.26660      4    995    0.89949
##    Exp2_S2_self_action_T2    1.47802      4    995    0.20670
##  ──────────────────────────────────────────────────────────────
##
##
##  Group Summary
##  ──────────────────────────────────────────
##    condition              N      Excluded
##  ──────────────────────────────────────────
##    Dissonance_no_write    199           0
##    Dissonance_write       200           0
##    Negative               200           0
##    Neutral                201           0
##    Worthy                 200           0
##  ──────────────────────────────────────────
```

```r
ggstatsplot::grouped_ggbetweenstats(
  data = df_s2long, y = Exp2_self_action, x = condition,
  grouping.var = scenario,
  ylab = "Likelihood of the self conducting suggested behavior", xlab = "Conditions")
```




```r
ggsave(
  "Study2DV2SelfAction.png", plot = last_plot(),
  width = 11.8, height = 6, dpi = 600)
```

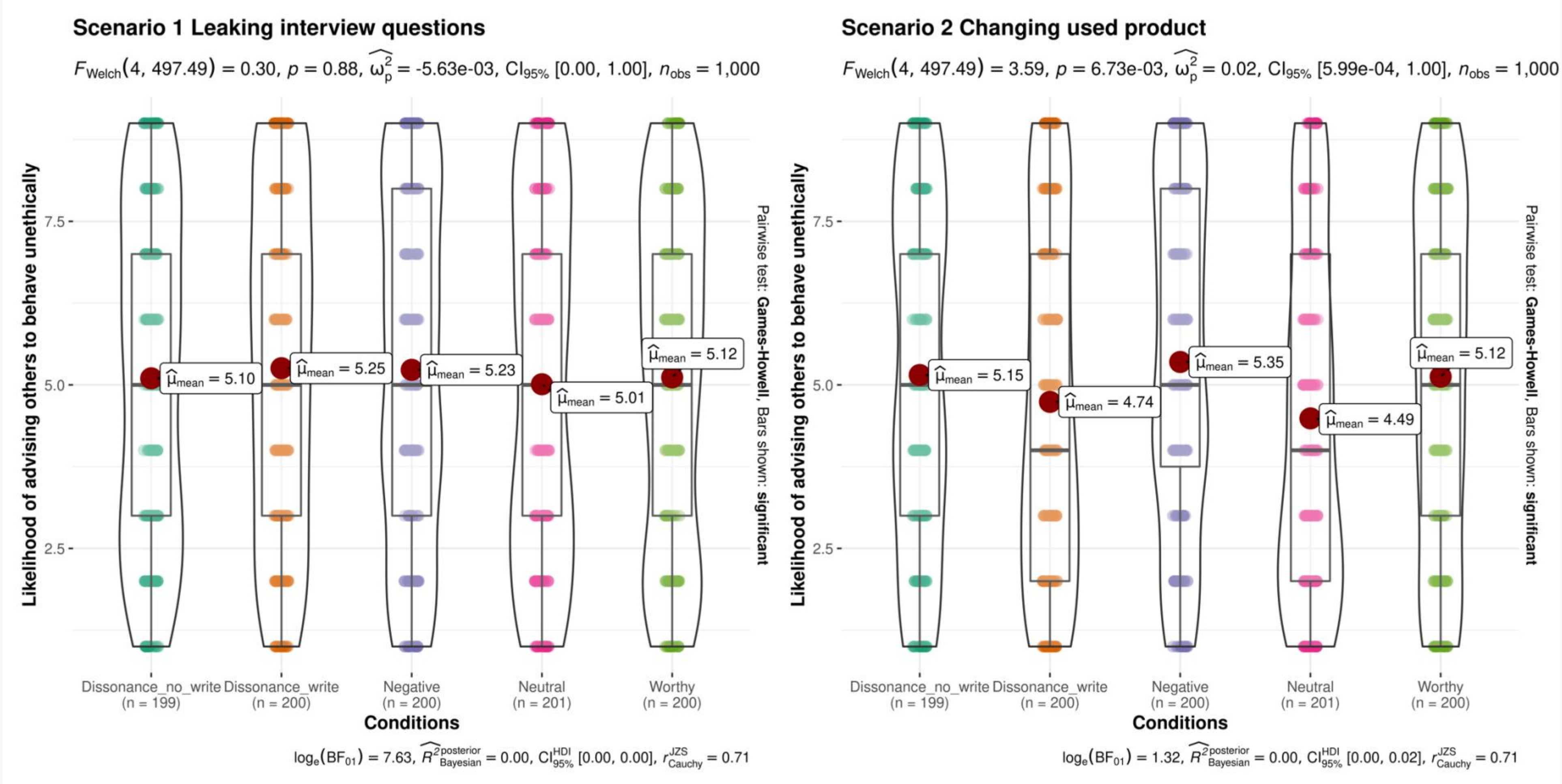
Study 2 DV3 - Likelihood of advising others to perform unethical but self-benefiting behavior.

```
jmv::anovaRM(
    data = cleaned_df,
    rm = list(
        list(
            label="scenario",
            levels=c("S1", "S2"))),
    rmCells = list(
        list(
            measure="Exp2_S1_guide_other",
            cell="S1"),
        list(
            measure="Exp2_S2_guide_other_T2",
            cell="S2")),
    bs = condition,
    effectSize = "eta",
    rmTerms = ~ scenario,
    bsTerms = ~ condition,
    leveneTest = TRUE,
    #emMeans = ~ scenario:condition,
    emmTables = TRUE,
    groupSumm = TRUE)

##
##  REPEATED MEASURES ANOVA
##
##  Within Subjects Effects
##  ──────────────────────────────────────────────────────────────────────────────────────────────
##                           Sum of Squares    df     Mean Square    F          p          η²
##  ──────────────────────────────────────────────────────────────────────────────────────────────
##    scenario                       14.694      1        14.6935    2.1604    0.14193    0.00109
##    scenario:condition             40.857      4        10.2143    1.5018    0.19951    0.00302
##    Residual                     6767.351    995         6.8014
##  ──────────────────────────────────────────────────────────────────────────────────────────────
##    Note. Type 3 Sums of Squares
##
##
```

```
##  Between Subjects Effects
##  ─────────────────────────────────────────────────────────────────────────────────────
##                  Sum of Squares    df     Mean Square    F         p          η²
##  ─────────────────────────────────────────────────────────────────────────────────────
##    condition             64.788      4        16.1969    2.4293    0.04618    0.00479
##    Residual            6633.940    995         6.6673
##  ─────────────────────────────────────────────────────────────────────────────────────
##    Note. Type 3 Sums of Squares
##
##
##  ASSUMPTIONS
##
##  Homogeneity of Variances Test (Levene's)
##  ───────────────────────────────────────────────────────────────
##                             F           df1    df2    p
##  ───────────────────────────────────────────────────────────────
##    Exp2_S1_guide_other       0.339167      4    995    0.85162
##    Exp2_S2_guide_other_T2    0.087681      4    995    0.98629
##  ───────────────────────────────────────────────────────────────
##
##
##  Group Summary
##  ──────────────────────────────────────────
##    condition              N      Excluded
##  ──────────────────────────────────────────
##    Dissonance_no_write    199           0
##    Dissonance_write       200           0
##    Negative               200           0
##    Neutral                201           0
##    Worthy                 200           0
##  ──────────────────────────────────────────
```

```
ggstatsplot::grouped_ggbetweenstats(
  data = df_s2long, y = Exp2_guide_other, x = condition,
  grouping.var = scenario,
  ylab = "Likelihood of advising others to behave unethically", xlab = "Conditions"
  )
```




```
ggsave(
  "Study2DV3AdviseOthers.png", plot = last_plot(),
  width = 11.8, height = 6, dpi = 600)
```

Study 3 - MASC

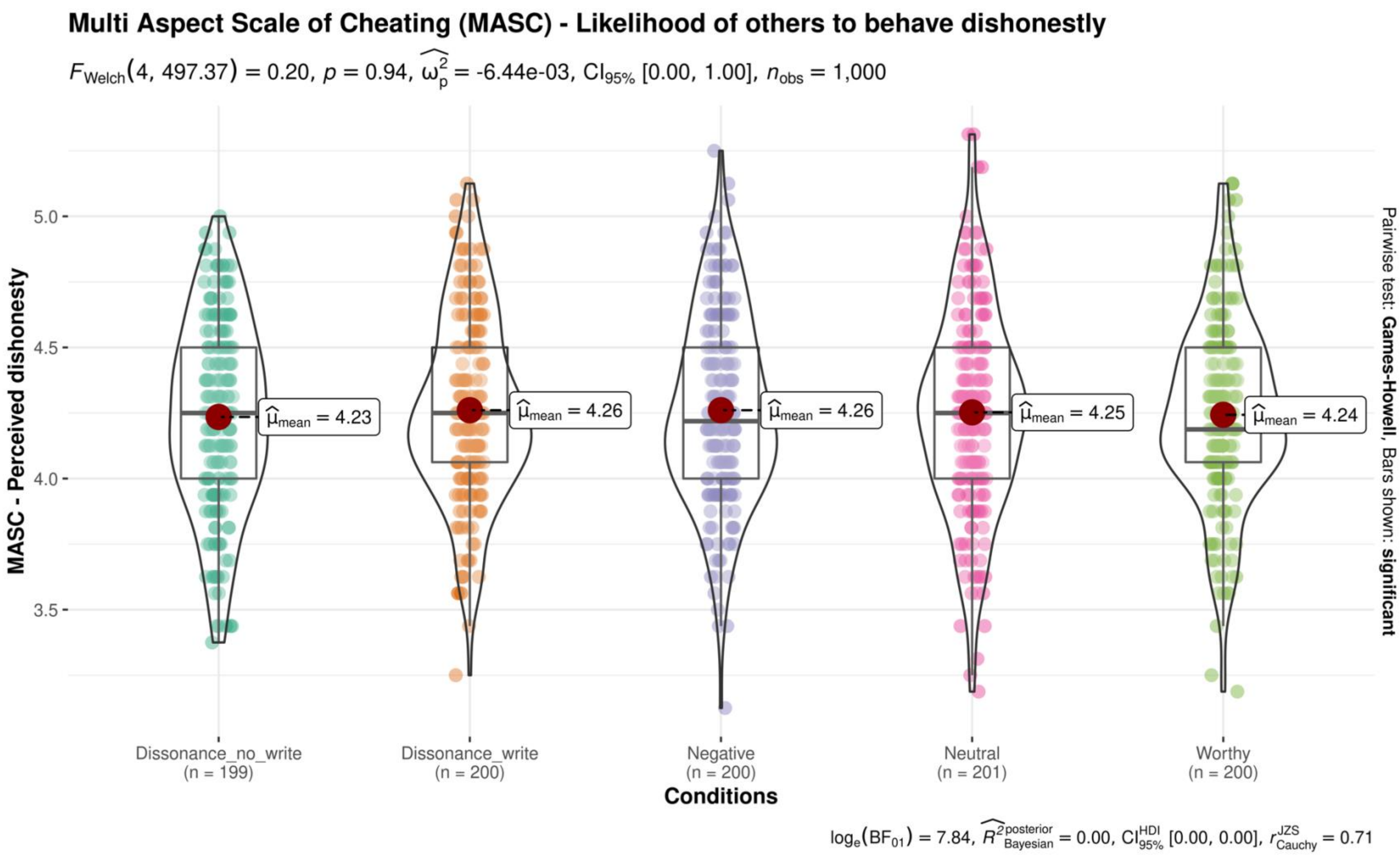
Calculate ANOVA, generate APA style ANOVA table, and plot ggstatsplot.

```
# Overall measurements for all participants.
## MASC set 1
jmv::ANOVA(
    formula = MASC_set1 ~ condition,
    data = cleaned_df,
    effectSize = "eta",
    modelTest = TRUE,
    homo = TRUE,
    postHocES = "d",
    postHocEsCi = TRUE,
    #emMeans = ~ condition,
    emmTables = TRUE)
```

```
##  ANOVA - MASC_set1
##  ───────────────────────────────────────────────────────────────────────────────────────────
##                         Sum of Squares    df     Mean Square    F          p          η²
##  ───────────────────────────────────────────────────────────────────────────────────────────
##    Overall model               0.10094      4       0.025235    0.19294    0.94213
##    condition                   0.10094      4       0.025235    0.19294    0.94213    0.00078
##    Residuals                 130.13330    995       0.130787
##  ───────────────────────────────────────────────────────────────────────────────────────────
##
##
##  ASSUMPTION CHECKS
##
##  Homogeneity of Variances Test (Levene's)
##  ────────────────────────────────────────
##    F          df1    df2    p
##  ────────────────────────────────────────
##    0.60309      4    995    0.66049
##  ────────────────────────────────────────
```

```
ANOVA_study3_MASC1 <- lm(MASC_set1 ~ condition, data = cleaned_df)
```

```
ggstatsplot::ggbetweenstats(
    data = cleaned_df, y = MASC_set1, x = condition,
    originaltheme = TRUE,
    ylab = "MASC - Perceived dishonesty", xlab = "Conditions",
    title = "Multi Aspect Scale of Cheating (MASC) - Likelihood of others to behave dishonestly")
```




```
apa.aov.table(ANOVA_study3_MASC1, filename = "Exp3 MASC set1 ANOVA.doc",table.number = 5)
ggsave(
  "MASC1_Dishonesty_plot.png", plot = last_plot(),
  width = 9, height = 5.5, dpi = 600)
```

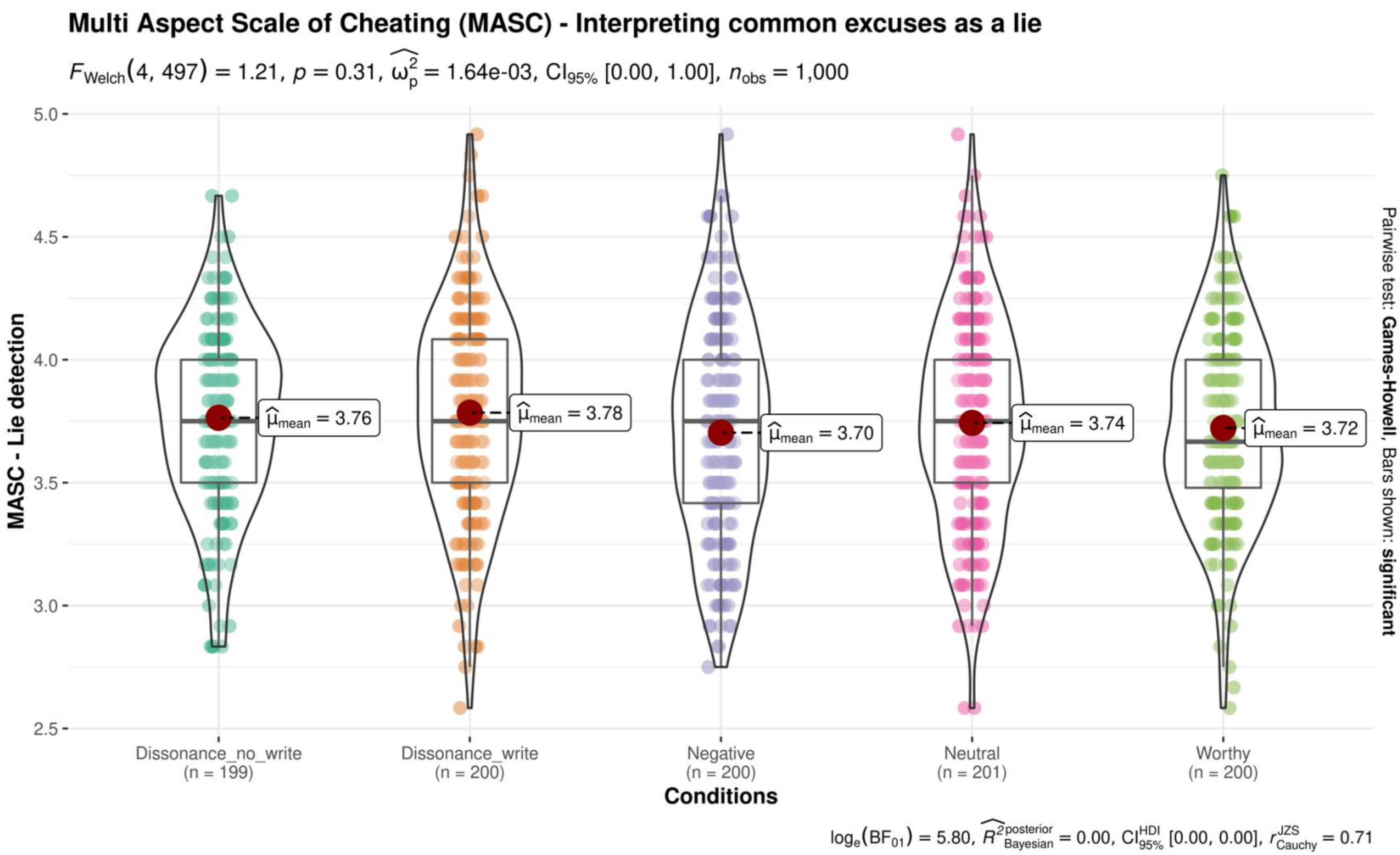
```r
## MASC set 2
jmv::ANOVA(
    formula = MASC_set2 ~ condition,
    data = cleaned_df,
    effectSize = "eta",
    modelTest = TRUE,
    homo = TRUE,
    postHocES = "d",
    postHocEsCi = TRUE,
    #emMeans = ~ condition,
    emmTables = TRUE)

##  ANOVA - MASC_set2
##  ───────────────────────────────────────────────────────────────────────────────────────────
##                        Sum of Squares    df     Mean Square    F         p          η²
##  ───────────────────────────────────────────────────────────────────────────────────────────
##    Overall model             0.83417      4         0.20854    1.2545    0.28622
##    condition                 0.83417      4         0.20854    1.2545    0.28622    0.00502
##    Residuals               165.39917    995         0.16623
##  ───────────────────────────────────────────────────────────────────────────────────────────

##  ASSUMPTION CHECKS
##  Homogeneity of Variances Test (Levene's)
##  ────────────────────────────────────────
##    F         df1    df2    p
##  ────────────────────────────────────────
##    2.4402      4    995    0.04536
##  ────────────────────────────────────────

ANOVA_study3_MASC2 <- lm(MASC_set2 ~ condition, data = cleaned_df)
```

```
ggstatsplot::ggbetweenstats(
    data = cleaned_df,y = MASC_set2,x = condition,
    originaltheme = TRUE,
    ylab = "MASC - Lie detection", xlab = "Conditions",
    title = "Multi Aspect Scale of Cheating (MASC) - Interpreting common excuses as a lie")
```



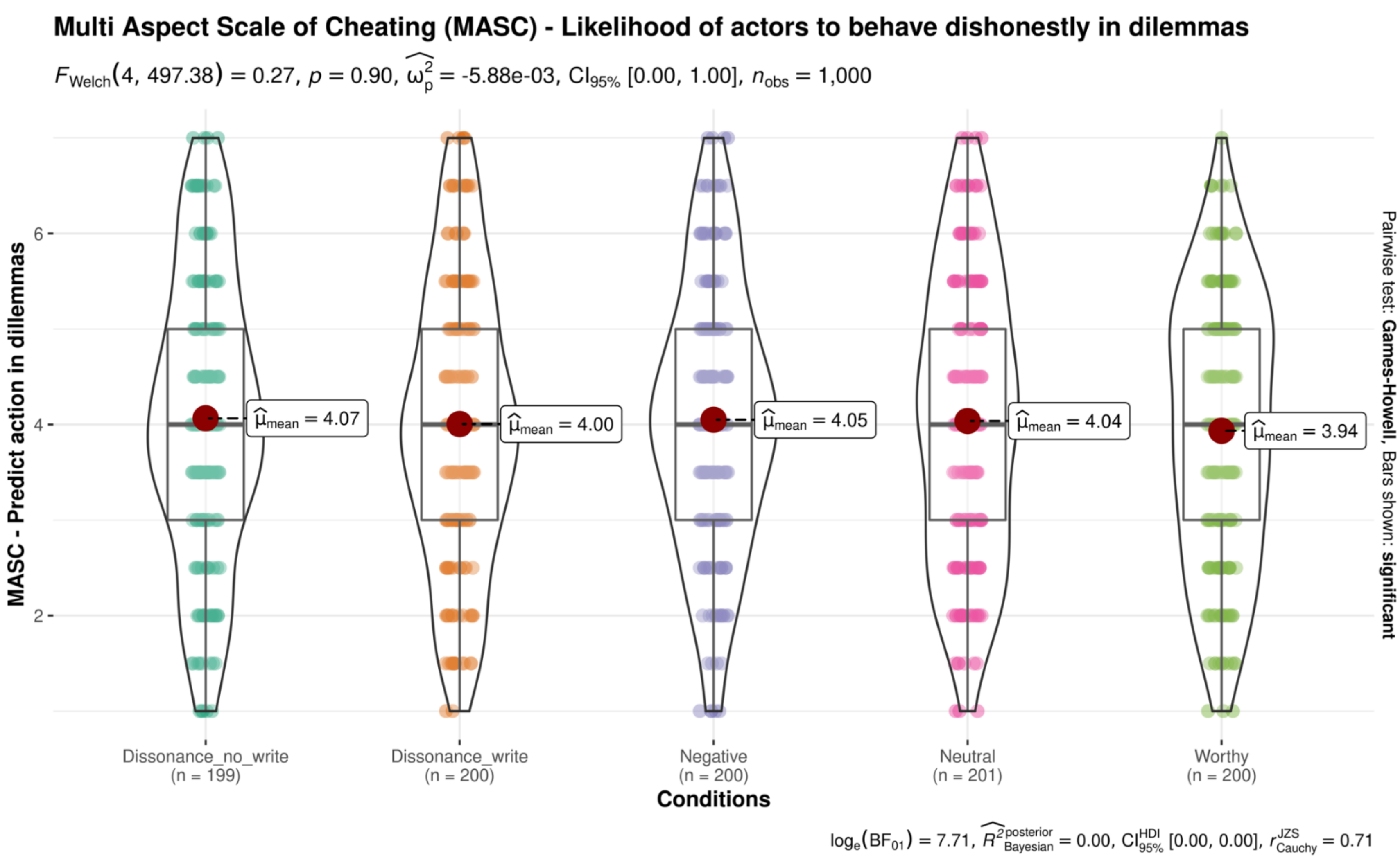

```
apa.aov.table(ANOVA_study3_MASC2, filename = "Exp3 MASC set2 ANOVA.doc",table.number = 6)
ggsave(
  "MASC2_Lie_plot.png", plot = last_plot(),
  width = 9, height = 5.5, dpi = 600)
```

```
## MASC set 3
jmv::ANOVA(
    formula = MASC_set3 ~ condition,
    data = cleaned_df,
    effectSize = "eta",
    modelTest = TRUE,
    homo = TRUE,
    postHocES = "d",
    postHocEsCi = TRUE,
    #emMeans = ~ condition,
    emmTables = TRUE)

##  ANOVA - MASC_set3
##  ───────────────────────────────────────────────────────────────────────────────────────────
##                     Sum of Squares    df     Mean Square    F          p          η²
##  ───────────────────────────────────────────────────────────────────────────────────────────
##    Overall model            2.1368      4        0.53421    0.25837    0.90460
##    condition                2.1368      4        0.53421    0.25837    0.90460    0.00104
##    Residuals             2057.2709    995        2.06761
##  ───────────────────────────────────────────────────────────────────────────────────────────
##
##
##  ASSUMPTION CHECKS
##  Homogeneity of Variances Test (Levene's)
##  ────────────────────────────────────────
##    F          df1    df2    p
##  ────────────────────────────────────────
##    0.68175      4    995    0.60467
##  ────────────────────────────────────────

ANOVA_study3_MASC3 <- lm(MASC_set3 ~ condition, data = cleaned_df)
```

```r
ggstatsplot::ggbetweenstats(
    data = cleaned_df, y = MASC_set3, x = condition,
    originaltheme = TRUE,
    ylab = "MASC - Predict action in dillemmas", xlab = "Conditions",
    title = "Multi Aspect Scale of Cheating (MASC) - Likelihood of actors to behave dishonestly in dilemmas")
```




```r
apa.aov.table(ANOVA_study3_MASC3, filename = "Exp3 MASC set3 ANOVA.doc",table.number = 7)
ggsave(
  "MASC3_dilemmas_plot.png", plot = last_plot(),
  width = 9, height = 5.5, dpi = 600)
```

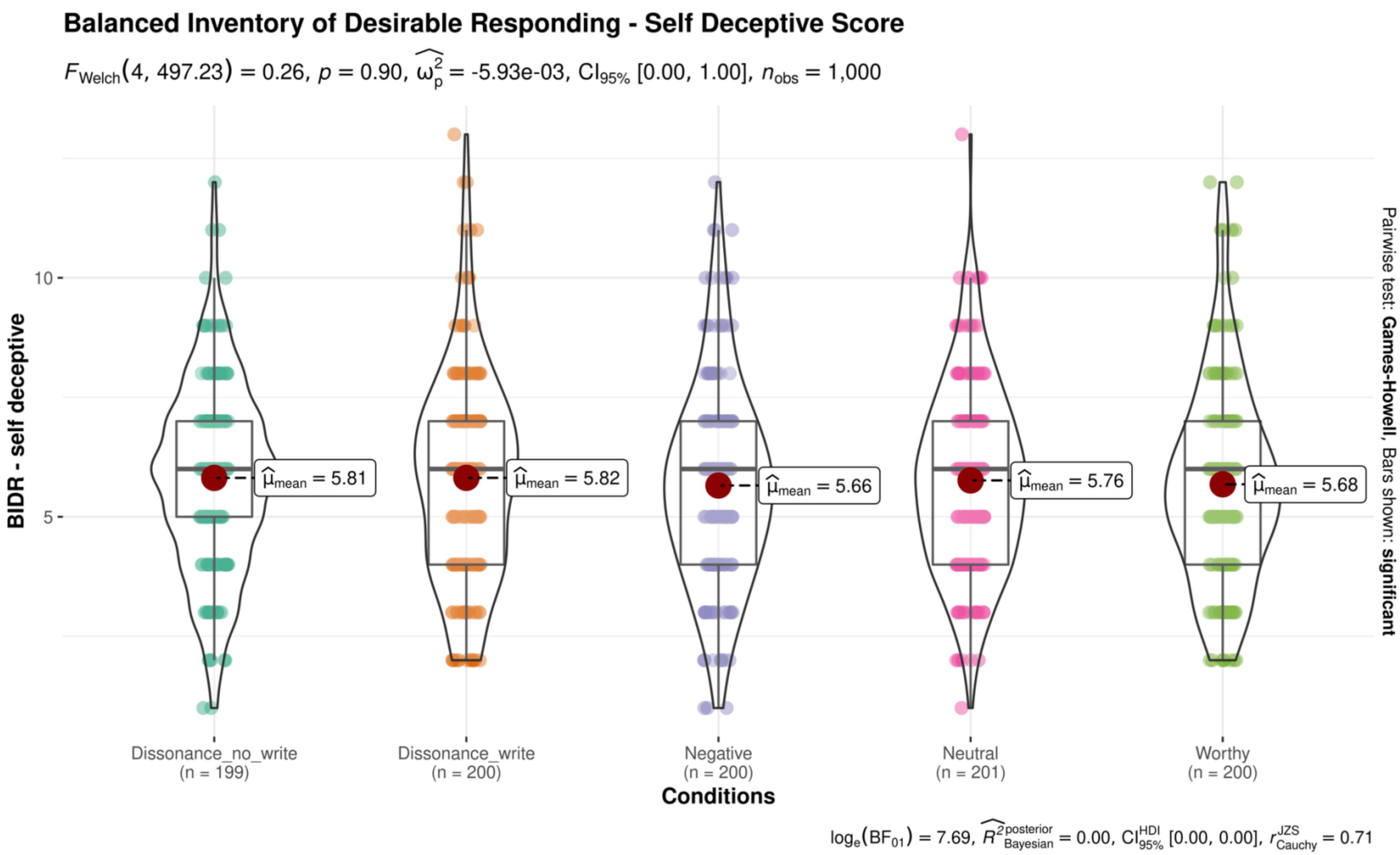
Study 3 - BIDR

Calculate ANOVA, generate APA style ANOVA table, and plot ggstatsplot.

```
## BIDR - self deceptive
jmv::ANOVA(
    formula = BIDR_self_deceptive ~ condition,
    data = cleaned_df,
    effectSize = "eta",
    modelTest = TRUE,
    homo = TRUE,
    postHocES = "d",
    postHocEsCi = TRUE,
    #emMeans = ~ condition,
    emmTables = TRUE)

##  ANOVA - BIDR_self_deceptive
##  ──────────────────────────────────────────────────────────────────────────────────────────
##                         Sum of Squares    df     Mean Square    F          p          η²
##  ──────────────────────────────────────────────────────────────────────────────────────────
##    Overall model                4.4471      4         1.1118    0.26840    0.89836
##    condition                    4.4471      4         1.1118    0.26840    0.89836    0.00108
##    Residuals                 4121.5279    995         4.1422
##  ──────────────────────────────────────────────────────────────────────────────────────────
##
##  ASSUMPTION CHECKS
##  Homogeneity of Variances Test (Levene's)
##  ────────────────────────────────────────
##    F          df1    df2    p
##  ────────────────────────────────────────
##    0.71281      4    995    0.58323
##  ────────────────────────────────────────
```

```r
ggstatsplot::ggbetweenstats(
    data = cleaned_df, y = BIDR_self_deceptive, x = condition,
    originaltheme = TRUE,
    ylab = "BIDR - self deceptive", xlab = "Conditions",
    title = "Balanced Inventory of Desirable Responding - Self Deceptive Score")
```



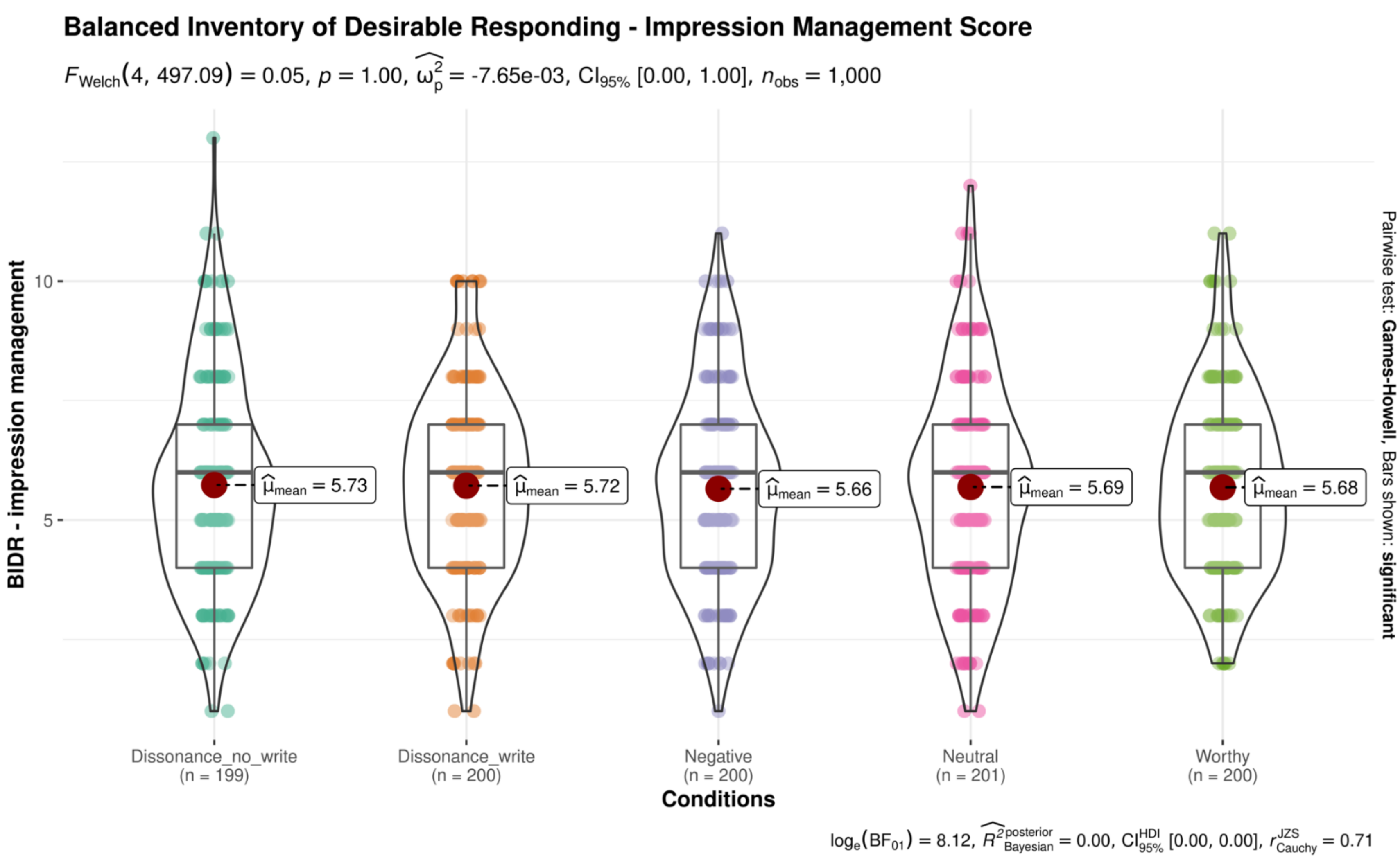

```r
apa.aov.table(ANOVA_study3_BIDR1, filename = "Exp3 BIDR1 ANOVA.doc",table.number = 8)
ggsave(
  "BIDR_SelfDeceptive_plot.png", plot = last_plot(),
  width = 9, height = 5.5, dpi = 600)
```

```
## BIDR - impression management
jmv::ANOVA(
    formula = BIDR_impre_manage ~ condition,
    data = cleaned_df,
    effectSize = "eta",
    modelTest = TRUE,
    homo = TRUE,
    postHocES = "d",
    postHocEsCi = TRUE,
    #emMeans = ~ condition,
    emmTables = TRUE)

##  ANOVA - BIDR_impre_manage
##  ───────────────────────────────────────────────────────────────────────────────────────────
##                        Sum of Squares    df     Mean Square    F           p           η²
##  ───────────────────────────────────────────────────────────────────────────────────────────
##    Overall model              0.76096      4        0.19024    0.047435    0.99577
##    condition                  0.76096      4        0.19024    0.047435    0.99577    0.00019
##    Residuals               3990.43004    995        4.01048
##  ───────────────────────────────────────────────────────────────────────────────────────────
##
##
##  ASSUMPTION CHECKS
##
##  Homogeneity of Variances Test (Levene's)
##  ────────────────────────────────────────
##    F         df1    df2    p
##  ────────────────────────────────────────
##    1.1472      4    995    0.33282
##  ────────────────────────────────────────

ANOVA_study3_BIDR2 <- lm(BIDR_impre_manage ~ condition, data = cleaned_df)
```

```
ggstatsplot::ggbetweenstats(
    data = cleaned_df, y = BIDR_impre_manage, x = condition,
    originaltheme = TRUE,
    ylab = "BIDR - impression management", xlab = "Conditions",
    title = "Balanced Inventory of Desirable Responding - Impression Management Score")
```




```
apa.aov.table(ANOVA_study3_BIDR2, filename = "Exp3 BIDR2 ANOVA.doc",table.number = 9)
ggsave(
  "BIDR_ImpressionManagement_plot.png", plot = last_plot(),
  width = 9, height = 5.5, dpi = 600)
```

Robustness check - planned contrasts for recall conditions

Study 1 - planned contrast for ANOVA

```
contrast1 = c(3, 3,-2,-2,-2)
contrast2 = c(1,-1, 0, 0, 0)
# comprehensive data
cleaned_df$condition=factor(cleaned_df$condition)
contrasts(cleaned_df$condition) = cbind(contrast1, contrast2)

#Check
contrasts(cleaned_df$condition)

##                      contrast1 contrast2
## Dissonance_no_write          3         1 -0.000000000000000041633
## Dissonance_write             3        -1 -0.000000000000000026743
## Negative                    -2         0 -0.577350269189625731059
## Neutral                     -2         0  0.788675134594812865529
## Worthy                      -2         0 -0.211324865405187106715
##
## Dissonance_no_write -0.000000000000000055511
## Dissonance_write    -0.000000000000000017154
## Negative            -0.577350269189625731059
## Neutral             -0.211324865405187134471
## Worthy               0.788675134594812865529

# ANOVA command
# result in the form of regression
#summary.lm(aov1)

ANOVA_mani_check <- lm(ManiCheck ~ condition, data = cleaned_df)
summary.lm(ANOVA_mani_check)

##
## Call:
## lm(formula = ManiCheck ~ condition, data = cleaned_df)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.5525 -0.3858  0.0025  0.3582  1.4765
##
## Coefficients:
```

```
##                      Estimate Std. Error t value            Pr(>|t|)
## (Intercept)           2.99471    0.01762  169.93 <0.0000000000000002 ***
## conditioncontrast1    0.00525    0.00720    0.73                0.466
## conditioncontrast2    0.01298    0.02790    0.47                0.642
## condition             0.01259    0.03935    0.32                0.749
## condition             0.08996    0.03940    2.28                0.023 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.557 on 995 degrees of freedom
## Multiple R-squared:  0.00606,    Adjusted R-squared:  0.00206
## F-statistic: 1.52 on 4 and 995 DF,  p-value: 0.195
```

```
ANOVA_exp1_DV1 <- lm(Exp1_prob_hiring ~ condition, data = cleaned_df)
summary.lm(ANOVA_exp1_DV1)
```

```
##
## Call:
## lm(formula = Exp1_prob_hiring ~ condition, data = cleaned_df)
##
## Residuals:
##    Min     1Q Median     3Q    Max
## -4.145 -2.040  0.015  2.055  4.120
##
## Coefficients:
##                      Estimate Std. Error t value            Pr(>|t|)
## (Intercept)            4.9989     0.0827   60.43 <0.0000000000000002 ***
## conditioncontrast1     0.0220     0.0338    0.65                 0.51
## conditioncontrast2    -0.0800     0.1310   -0.61                 0.54
## condition              0.0885     0.1847    0.48                 0.63
## condition             -0.0713     0.1850   -0.39                 0.70
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.62 on 995 degrees of freedom
## Multiple R-squared:  0.00118,    Adjusted R-squared:  -0.00283
## F-statistic: 0.294 on 4 and 995 DF,  p-value: 0.882
```

```
ANOVA_exp1_DV2 <- lm(Exp1_loyalty ~ condition, data = cleaned_df)
summary.lm(ANOVA_exp1_DV2)
```

```
##
## Call:
## lm(formula = Exp1_loyalty ~ condition, data = cleaned_df)
##
## Residuals:
##    Min     1Q Median     3Q    Max
## -4.240 -1.940  0.073  2.139  4.155
##
## Coefficients:
##                     Estimate Std. Error t value            Pr(>|t|)
## (Intercept)           4.9601     0.0822   60.32 <0.0000000000000002 ***
## conditioncontrast1   -0.0268     0.0336   -0.80                0.43
## conditioncontrast2    0.0348     0.1302    0.27                0.79
## condition            -0.2357     0.1836   -1.28                0.20
## condition            -0.1564     0.1838   -0.85                0.39
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.6 on 995 degrees of freedom
## Multiple R-squared:  0.00308,    Adjusted R-squared:  -0.000926
## F-statistic: 0.769 on 4 and 995 DF,  p-value: 0.545
```

```
ANOVA_exp1_DV3 <- lm(Exp1_honesty ~ condition, data = cleaned_df)
summary.lm(ANOVA_exp1_DV3)
```

```
##
## Call:
## lm(formula = Exp1_honesty ~ condition, data = cleaned_df)
##
## Residuals:
##    Min     1Q Median     3Q    Max
##  -4.08  -2.04  -0.04   2.02   4.29
##
## Coefficients:
##                     Estimate Std. Error t value            Pr(>|t|)
## (Intercept)           4.9282     0.0809   60.93 <0.0000000000000002 ***
## conditioncontrast1    0.0273     0.0330    0.83                0.41
## conditioncontrast2    0.0301     0.1280    0.24                0.81
## condition             0.0153     0.1806    0.08                0.93
## condition             0.2594     0.1808    1.43                0.15
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## Residual standard error: 2.56 on 995 degrees of freedom
## Multiple R-squared:  0.00281,    Adjusted R-squared:  -0.0012
## F-statistic: 0.701 on 4 and 995 DF,  p-value: 0.591
```

```
ANOVA_exp3_MASC1 <- lm(MASC_set1 ~ condition, data = cleaned_df)
summary.lm(ANOVA_exp3_MASC1)
```

```
##
## Call:
## lm(formula = MASC_set1 ~ condition, data = cleaned_df)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.1356 -0.2349 -0.0106  0.2475  1.0600
##
## Coefficients:
##                     Estimate Std. Error t value            Pr(>|t|)
## (Intercept)         4.250357   0.011436  371.66 <0.0000000000000002 ***
## conditioncontrast1 -0.000861   0.004671   -0.18                0.85
## conditioncontrast2 -0.012850   0.018105   -0.71                0.48
## condition          -0.002720   0.025533   -0.11                0.92
## condition          -0.012082   0.025569   -0.47                0.64
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.362 on 995 degrees of freedom
## Multiple R-squared:  0.000775,   Adjusted R-squared:  -0.00324
## F-statistic: 0.193 on 4 and 995 DF,  p-value: 0.942
```

```
ANOVA_exp3_MASC2 <- lm(MASC_set2 ~ condition, data = cleaned_df)
summary.lm(ANOVA_exp3_MASC2)
```

```
##
## Call:
## lm(formula = MASC_set2 ~ condition, data = cleaned_df)
##
## Residuals:
##    Min     1Q Median     3Q    Max
## -1.201 -0.285  0.007  0.278  1.213
##
## Coefficients:
```

```
##                      Estimate Std. Error t value            Pr(>|t|)    
## (Intercept)           3.74335    0.01289  290.34 <0.0000000000000002 ***
## conditioncontrast1  0.01028    0.00527    1.95               0.051 .  
## conditioncontrast2 -0.01038    0.02041   -0.51               0.611    
## condition           0.02728    0.02879    0.95               0.343    
## condition           0.00642    0.02883    0.22               0.824    
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.408 on 995 degrees of freedom
## Multiple R-squared:  0.00502,    Adjusted R-squared:  0.00102 
## F-statistic: 1.25 on 4 and 995 DF,  p-value: 0.286
```

```
ANOVA_exp3_MASC3 <- lm(MASC_set3 ~ condition, data = cleaned_df)
summary.lm(ANOVA_exp3_MASC3)
```

```
##
## Call:
## lm(formula = MASC_set3 ~ condition, data = cleaned_df)
##
## Residuals:
##     Min      1Q  Median      3Q     Max 
## -3.0653 -1.0373 -0.0373  0.9950  3.0650 
##
## Coefficients:
##                      Estimate Std. Error t value            Pr(>|t|)    
## (Intercept)           4.01853    0.04547   88.38 <0.0000000000000002 ***
## conditioncontrast1  0.00555    0.01857    0.30                0.77    
## conditioncontrast2  0.03016    0.07199    0.42                0.68    
## condition           0.01430    0.10152    0.14                0.89    
## condition          -0.08802    0.10166   -0.87                0.39    
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.44 on 995 degrees of freedom
## Multiple R-squared:  0.00104,    Adjusted R-squared:  -0.00298 
## F-statistic: 0.258 on 4 and 995 DF,  p-value: 0.905
```

```
ANOVA_exp3_BIDR1 <- lm(BIDR_self_deceptive ~ condition, data = cleaned_df)
summary.lm(ANOVA_exp3_BIDR1)
```

```
##
## Call:
## lm(formula = BIDR_self_deceptive ~ condition, data = cleaned_df)
##
## Residuals:
##    Min     1Q Median     3Q    Max
## -4.814 -1.655  0.186  1.239  7.239
##
## Coefficients:
##                     Estimate Std. Error t value            Pr(>|t|)
## (Intercept)         5.745053   0.064361   89.26 <0.0000000000000002 ***
## conditioncontrast1  0.023161   0.026286    0.88                0.38
## conditioncontrast2 -0.000465   0.101890    0.00                1.00
## condition           0.078469   0.143691    0.55                0.59
## condition          -0.002725   0.143898   -0.02                0.98
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.04 on 995 degrees of freedom
## Multiple R-squared:  0.00108,    Adjusted R-squared:  -0.00294
## F-statistic: 0.268 on 4 and 995 DF,  p-value: 0.898
```

```
ANOVA_exp3_BIDR2 <- lm(BIDR_impre_manage ~ condition, data = cleaned_df)
summary.lm(ANOVA_exp3_BIDR2)
```

```
##
## Call:
## lm(formula = BIDR_impre_manage ~ condition, data = cleaned_df)
##
## Residuals:
##    Min     1Q Median     3Q    Max
## -4.734 -1.685  0.266  1.308  7.266
##
## Coefficients:
##                    Estimate Std. Error t value            Pr(>|t|)
## (Intercept)         5.69704    0.06333   89.96 <0.0000000000000002 ***
## conditioncontrast1  0.00993    0.02586    0.38                0.70
## conditioncontrast2  0.00683    0.10026    0.07                0.95
## condition           0.02248    0.14139    0.16                0.87
## condition           0.01594    0.14159    0.11                0.91
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## Residual standard error: 2 on 995 degrees of freedom
## Multiple R-squared:  0.000191,   Adjusted R-squared:  -0.00383
## F-statistic: 0.0474 on 4 and 995 DF,  p-value: 0.996
```

Study 2 - planned contrast for repeated ANOVA

```
# Repeated-measures ANOVA with the afex package
library("afex")

## Loading required package: lme4

## Loading required package: Matrix

##
## Attaching package: 'Matrix'

## The following objects are masked from 'package:tidyr':
##
##     expand, pack, unpack

## ************
## Welcome to afex. For support visit: http://afex.singmann.science/

## - Functions for ANOVAs: aov_car(), aov_ez(), and aov_4()
## - Methods for calculating p-values with mixed(): 'S', 'KR', 'LRT', and 'PB'
## - 'afex_aov' and 'mixed' objects can be passed to emmeans() for follow-up tests
## - NEWS: emmeans() for ANOVA models now uses model = 'multivariate' as default.
## - Get and set global package options with: afex_options()
## - Set orthogonal sum-to-zero contrasts globally: set_sum_contrasts()
## - For example analyses see: browseVignettes("afex")
## ************

##
## Attaching package: 'afex'

## The following object is masked from 'package:lme4':
##
##     lmer

# using the long format "df_s2long" created in main analysis:

# planned contrast notation
contrast1 = c(3, 3,-2,-2,-2)
```

```
contrast2 = c(1,-1, 0, 0, 0)
df_s2long$condition <- as.factor(df_s2long$condition)
contrasts(df_s2long$condition) = cbind(contrast1, contrast2)

#Check
contrasts(df_s2long$condition)

##                        contrast1 contrast2
## Dissonance_no_write         3         1 -0.000000000000000041633
## Dissonance_write            3        -1 -0.000000000000000026743
## Negative                   -2         0 -0.577350269189625731059
## Neutral                    -2         0  0.788675134594812865529
## Worthy                     -2         0 -0.211324865405187106715
##
## Dissonance_no_write -0.000000000000000055511
## Dissonance_write    -0.000000000000000017154
## Negative            -0.577350269189625731059
## Neutral             -0.211324865405187134471
## Worthy               0.788675134594812865529

# ANOVA command
ANOVA_Exp2_DV1 <- afex::aov_car(Exp2_seen_wrong ~ condition*scenario + Error(ID/scenario), data=df_s2DV1)

## Converting to factor: condition

ANOVA_Exp2_DV2 <- afex::aov_car(Exp2_self_action ~ condition*scenario + Error(ID/scenario), data=df_s2DV2)

## Converting to factor: condition

ANOVA_Exp2_DV3 <- afex::aov_car(Exp2_guide_other ~ condition*scenario + Error(ID/scenario), data=df_s2DV3)

## Converting to factor: condition

summary(ANOVA_Exp2_DV1)
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity
##
##                     Sum Sq num Df Error SS den Df F value              Pr(>F)
## (Intercept)          52062      1     6524    995 7940.25 <0.0000000000000002
## condition                6      4     6524    995    0.24              0.9158
## scenario                 3      1     6297    995    0.50              0.4790
## condition:scenario      92      4     6297    995    3.65              0.0058
##
## (Intercept)         ***
```

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

```
summary(ANOVA_Exp2_DV2)
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity
##
##                     Sum Sq num Df Error SS den Df F value              Pr(>F)
## (Intercept)          51729      1     6487    995 7934.75 <0.0000000000000002
## condition               20      4     6487    995    0.75                0.56
## scenario                 0      1     7078    995    0.02                0.89
## condition:scenario      23      4     7078    995    0.80                0.52
##
## (Intercept)         ***
## condition
## scenario
## condition:scenario
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
summary(ANOVA_Exp2_DV3)
```

```
##
## Univariate Type III Repeated-Measures ANOVA Assuming Sphericity
##
##                     Sum Sq num Df Error SS den Df F value              Pr(>F)
## (Intercept)          51133      1     6634    995 7669.31 <0.0000000000000002
## condition               65      4     6634    995    2.43               0.046
## scenario                15      1     6767    995    2.16               0.142
## condition:scenario      41      4     6767    995    1.50               0.200
##
## (Intercept)         ***
## condition           *
## scenario
## condition:scenario
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Planned Additional Analysis

Investigate the order effect if we fail to find support for the original's analyses.

Study 1 - ANOVA

Only include participants that saw study 1 before study 2.

```
df_s1 <- cleaned_df %>% filter(study_order == "Exp1First")
#write.csv(df_s1, "stimulated_cleaned_study1.csv",fileEncoding = "UTF-8")

# DV1 Probability of hiring the candicate
jmv::ANOVA(
    formula = Exp1_prob_hiring ~ condition,
    data = df_s1,
    effectSize = "eta",
    modelTest = TRUE,
    homo = TRUE,
    postHocES = "d",
    postHocEsCi = TRUE,
    #emMeans = ~ condition, # using ggstatsplot instead
    emmTables = TRUE)

##  ANOVA - Exp1_prob_hiring
##  ─────────────────────────────────────────────────────────────────────────────────────────
##                         Sum of Squares    df     Mean Square    F          p          η²
##  ─────────────────────────────────────────────────────────────────────────────────────────
##    Overall model                4.9239      4         1.2310    0.18405    0.94668
##    condition                    4.9239      4         1.2310    0.18405    0.94668    0.00141
##    Residuals                 3498.0288    523         6.6884
##  ─────────────────────────────────────────────────────────────────────────────────────────
##
##  ASSUMPTION CHECKS
##  Homogeneity of Variances Test (Levene's)
##  ────────────────────────────────────────
##    F         df1    df2    p
##  ────────────────────────────────────────
##    1.1999      4    523    0.30986
##  ────────────────────────────────────────

ANOVA_exp1_DV1 <- lm(Exp1_prob_hiring ~ condition, data = df_s1)
#apa.aov.table(ANOVA_exp1_DV1, filename = "Exp1 DV1 ANOVA.doc",table.number = 10)
```

```r
# DV2 Perceived loyalty of the candidate
jmv::ANOVA(
    formula = Exp1_loyalty ~ condition,
    data = df_s1,
    effectSize = "eta",
    modelTest = TRUE,
    homo = TRUE,
    postHocES = "d",
    postHocEsCi = TRUE,
    #emMeans = ~ condition,
    emmTables = TRUE)

##  ANOVA - Exp1_loyalty
##  ───────────────────────────────────────────────────────────────────────────────────────────
##                        Sum of Squares    df     Mean Square    F         p          η²
##  ───────────────────────────────────────────────────────────────────────────────────────────
##    Overall model               34.495      4         8.6237    1.2792    0.27703
##    condition                   34.495      4         8.6237    1.2792    0.27703    0.00969
##    Residuals                 3525.839    523         6.7416
##  ───────────────────────────────────────────────────────────────────────────────────────────
##
##
##  ASSUMPTION CHECKS
##
##  Homogeneity of Variances Test (Levene's)
##  ────────────────────────────────────────
##    F          df1    df2    p
##  ────────────────────────────────────────
##    0.32806      4    523    0.85915
##  ────────────────────────────────────────

ANOVA_exp1_DV2 <- lm(Exp1_loyalty ~ condition, data = df_s1)
#apa.aov.table(ANOVA_exp1_DV2, filename = "Exp1 DV2 ANOVA.doc",table.number = 11)
```

```
# DV3 Perceived honesty of the candidate
jmv::ANOVA(
    formula = Exp1_honesty ~ condition,
    data = df_s1,
    effectSize = "eta",
    modelTest = TRUE,
    homo = TRUE,
    postHocES = "d",
    postHocEsCi = TRUE,
    #emMeans = ~ condition,
    emmTables = TRUE)

##  ANOVA - Exp1_honesty
##  ──────────────────────────────────────────────────────────────────────────────────────────
##                     Sum of Squares    df     Mean Square    F          p          η²
##  ──────────────────────────────────────────────────────────────────────────────────────────
##    Overall model            9.6951      4         2.4238    0.34810    0.84537
##    condition                9.6951      4         2.4238    0.34810    0.84537    0.00266
##    Residuals             3641.5700    523         6.9628
##  ──────────────────────────────────────────────────────────────────────────────────────────
##
##
##  ASSUMPTION CHECKS
##
##  Homogeneity of Variances Test (Levene's)
##  ────────────────────────────────────────
##    F           df1    df2    p
##  ────────────────────────────────────────
##    0.083724      4    523    0.98741
##  ────────────────────────────────────────

ANOVA_exp1_DV3 <- lm(Exp1_honesty ~ condition, data = df_s1)
#apa.aov.table(ANOVA_exp1_DV3, filename = "Exp1 DV3 ANOVA.doc",table.number = 12)
```

Study 2 - Repeated ANOVA

Only include participants that saw study 2 before study 1.

```
df_s2 <- cleaned_df %>% filter(study_order == "Exp2First")
#write.csv(df_s2, "stimulated_cleaned_study2.csv",fileEncoding = "UTF-8")

jmv::anovaRM(
    data = df_s2,
    rm = list(
        list(
            label="scenario",
            levels=c("S1", "S2"))),
    rmCells = list(
        list(
            measure="Exp2_S1_seen_wrong",
            cell="S1"),
        list(
            measure="Exp2_S2_seen_wrong_T2",
            cell="S2")),
    bs = condition,
    effectSize = "eta",
    rmTerms = ~ scenario,
    bsTerms = ~ condition,
    leveneTest = TRUE,
    #emMeans = ~ scenario:condition,
    emmTables = TRUE,
    groupSumm = TRUE)

##
##  REPEATED MEASURES ANOVA
##
##  Within Subjects Effects
##  ────────────────────────────────────────────────────────────────────────────────────────────────
##                          Sum of Squares    df     Mean Square    F           p          η²
##  ────────────────────────────────────────────────────────────────────────────────────────────────
##    scenario                     0.30127      1        0.30127    0.048624    0.82557    0.00005
##    scenario:condition          60.67590      4       15.16897    2.448200    0.04556    0.01002
##    Residual                  2893.51796    467        6.19597
##  ────────────────────────────────────────────────────────────────────────────────────────────────
##    Note. Type 3 Sums of Squares
##
```

```
##
##  Between Subjects Effects
##  ────────────────────────────────────────────────────────────────────────────────────────
##                  Sum of Squares    df     Mean Square    F          p          η²
##  ────────────────────────────────────────────────────────────────────────────────────────
##    condition             15.040      4         3.7600    0.56914    0.68516    0.00248
##    Residual            3085.205    467         6.6064
##  ────────────────────────────────────────────────────────────────────────────────────────
##    Note. Type 3 Sums of Squares
##
##
##  ASSUMPTIONS
##
##  Homogeneity of Variances Test (Levene's)
##  ──────────────────────────────────────────────────────────────
##                               F          df1    df2    p
##  ──────────────────────────────────────────────────────────────
##    Exp2_S1_seen_wrong       0.11592      4    467    0.97687
##    Exp2_S2_seen_wrong_T2    1.47146      4    467    0.20973
##  ──────────────────────────────────────────────────────────────
##
##
##  Group Summary
##  ──────────────────────────────────────────
##    condition               N     Excluded
##  ──────────────────────────────────────────
##    Dissonance_no_write    97            0
##    Dissonance_write       94            0
##    Negative               87            0
##    Neutral                95            0
##    Worthy                 99            0
##  ──────────────────────────────────────────
```

Study 2 DV2

```
jmv::anovaRM(
    data = df_s2,
    rm = list(
        list(
            label="scenario",
            levels=c("S1", "S2"))),
    rmCells = list(
        list(
            measure="Exp2_S1_self_action",
            cell="S1"),
        list(
            measure="Exp2_S2_self_action_T2",
            cell="S2")),
    bs = condition,
    effectSize = "eta",
    rmTerms = ~ scenario,
    bsTerms = ~ condition,
    leveneTest = TRUE,
    #emMeans = ~ scenario:condition,
    emmTables = TRUE,
    groupSumm = TRUE)

##
##  REPEATED MEASURES ANOVA
##
##  Within Subjects Effects
##  ────────────────────────────────────────────────────────────────────────────────────────────────
##                           Sum of Squares    df     Mean Square    F          p          η²
##  ────────────────────────────────────────────────────────────────────────────────────────────────
##    scenario                      0.79792      1        0.79792    0.11871    0.73059    0.00013
##    scenario:condition           24.80868      4        6.20217    0.92274    0.45041    0.00400
##    Residual                   3138.91908    467        6.72145
##  ────────────────────────────────────────────────────────────────────────────────────────────────
##    Note. Type 3 Sums of Squares
##
##
```

```
##  Between Subjects Effects
##  ───────────────────────────────────────────────────────────────────────────────────────
##                     Sum of Squares    df     Mean Square    F         p          η²
##  ───────────────────────────────────────────────────────────────────────────────────────
##    condition                30.109      4         7.5273    1.1667    0.32472    0.00485
##    Residual               3012.941    467         6.4517
##  ───────────────────────────────────────────────────────────────────────────────────────
##    Note. Type 3 Sums of Squares
##
##
##  ASSUMPTIONS
##
##  Homogeneity of Variances Test (Levene's)
##  ───────────────────────────────────────────────────────────────
##                                F          df1    df2    p
##  ───────────────────────────────────────────────────────────────
##    Exp2_S1_self_action       0.35370      4    467    0.84146
##    Exp2_S2_self_action_T2    0.65821      4    467    0.62133
##  ───────────────────────────────────────────────────────────────
##
##
##  Group Summary
##  ──────────────────────────────────────────
##    condition              N     Excluded
##  ──────────────────────────────────────────
##    Dissonance_no_write    97           0
##    Dissonance_write       94           0
##    Negative               87           0
##    Neutral                95           0
##    Worthy                 99           0
##  ──────────────────────────────────────────
```

Study 2 DV3

```
jmv::anovaRM(
    data = df_s2,
    rm = list(
        list(
            label="scenario",
            levels=c("S1", "S2"))),
    rmCells = list(
        list(
            measure="Exp2_S1_guide_other",
            cell="S1"),
        list(
            measure="Exp2_S2_guide_other_T2",
            cell="S2")),
    bs = condition,
    effectSize = "eta",
    rmTerms = ~ scenario,
    bsTerms = ~ condition,
    leveneTest = TRUE,
    #emMeans = ~ scenario:condition,
    emmTables = TRUE,
    groupSumm = TRUE)

##
##  REPEATED MEASURES ANOVA
##
##  Within Subjects Effects
##  ───────────────────────────────────────────────────────────────────────────────────────────────
##                               Sum of Squares    df     Mean Square    F          p          η²
##  ───────────────────────────────────────────────────────────────────────────────────────────────
##    scenario                           1.4952      1         1.4952    0.21350    0.64425    0.00024
##    scenario:condition                20.1721      4         5.0430    0.72011    0.57849    0.00318
##    Residual                        3270.4550    467         7.0031
##  ───────────────────────────────────────────────────────────────────────────────────────────────
##    Note. Type 3 Sums of Squares
##
```

```
##
##  Between Subjects Effects
##  ─────────────────────────────────────────────────────────────────────────────────────
##                    Sum of Squares    df     Mean Square    F         p          η²
##  ─────────────────────────────────────────────────────────────────────────────────────
##    condition               37.779      4         9.4448    1.4629    0.21241    0.00595
##    Residual              3015.136    467         6.4564
##  ─────────────────────────────────────────────────────────────────────────────────────
##    Note. Type 3 Sums of Squares
##
##
##  ASSUMPTIONS
##
##  Homogeneity of Variances Test (Levene's)
##  ──────────────────────────────────────────────────────────────
##                                F          df1    df2    p
##  ──────────────────────────────────────────────────────────────
##    Exp2_S1_guide_other       0.58391      4    467    0.67444
##    Exp2_S2_guide_other_T2    0.90514      4    467    0.46071
##  ──────────────────────────────────────────────────────────────
##
##
##  Group Summary
##  ─────────────────────────────────────────
##    condition              N     Excluded
##  ─────────────────────────────────────────
##    Dissonance_no_write    97           0
##    Dissonance_write       94           0
##    Negative               87           0
##    Neutral                95           0
##    Worthy                 99           0
##  ─────────────────────────────────────────
```

Testing order effect as a moderator

note: the moderator pacakge is not yet available for the current version of R, hence we pasted all code on running moderation analysis from JAMOVI, but will provide the analysis and result in a separate .omv file.

study 1

```
install.packages("medmod")
library(medmod)
medmod::mod(
    data = cleaned_df,
    dep = Exp1_prob_hiring,
    mod = study_order_n,
    pred = Condition_n,
    ci = TRUE,
    simpleSlopeEst = TRUE,
    simpleSlopePlot = TRUE)

medmod::mod(
    data = cleaned_df,
    dep = Exp1_honesty,
    mod = study_order_n,
    pred = Condition_n,
    ci = TRUE,
    simpleSlopeEst = TRUE,
    simpleSlopePlot = TRUE,
    duplicate = 2)

medmod::mod(
    data = cleaned_df,
    dep = Exp1_loyalty,
    mod = study_order_n,
    pred = Condition_n,
    ci = TRUE,
    simpleSlopeEst = TRUE,
    simpleSlopePlot = TRUE,
    duplicate = 2)
```

study 2

```
medmod::mod(
    data = cleaned_df,
    dep = Exp2_S1_seen_wrong,
    mod = study_order_n,
    pred = Condition_n,
    ci = TRUE,
    simpleSlopeEst = TRUE,
    simpleSlopePlot = TRUE,
    duplicate = 2)

medmod::mod(
    data = cleaned_df,
    dep = Exp2_S1_self_action,
    mod = study_order_n,
    pred = Condition_n,
```

```r
    ci = TRUE,
    simpleSlopeEst = TRUE,
    simpleSlopePlot = TRUE,
    duplicate = 2)

medmod::mod(
    data = cleaned_df,
    dep = Exp2_S1_guide_other,
    mod = study_order_n,
    pred = Condition_n,
    ci = TRUE,
    simpleSlopeEst = TRUE,
    simpleSlopePlot = TRUE,
    duplicate = 2)

medmod::mod(
    data = cleaned_df,
    dep = Exp2_S2_seen_wrong_T2,
    mod = study_order_n,
    pred = Condition_n,
    ci = TRUE,
    simpleSlopeEst = TRUE,
    simpleSlopePlot = TRUE,
    duplicate = 2)

medmod::mod(
    data = cleaned_df,
    dep = Exp2_S2_self_action_T2,
    mod = study_order_n,
    pred = Condition_n,
    ci = TRUE,
    simpleSlopeEst = TRUE,
    simpleSlopePlot = TRUE,
    duplicate = 2)

medmod::mod(
    data = cleaned_df,
    dep = Exp2_S2_guide_other_T2,
    mod = study_order_n,
    pred = Condition_n,
    ci = TRUE,
    simpleSlopeEst = TRUE,
    simpleSlopePlot = TRUE,
    duplicate = 2)
```