

# Can Exposure to Moral Foundations Affect Our Reactions to Policy Proposals?

W241 Experiments and Causality (submitted December X, 2019)

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## Abstract

TBD

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# 1 Background

[[TBD]]

## 2 Data

[[TBD]]

```
results_panel1_raw = read.xlsx("./data/study/MF Framing Pilot - Full Recruitment - Panel 1_November 20,
results_panel2_raw = read.xlsx("./data/study/MF Framing Pilot - Full Recruitment - Panel 2_November 20,
results_10femctrl_raw = read.xlsx("./data/study/MF Framing Pilot - Full Recruitment - Panel 2 - 10 Fema
participant_detail_panel1 = read.csv("./data/study/prolific_export_5dd4a350108b6748b25b5de1.csv", string
participant_detail_panel2 = read.csv("./data/study/prolific_export_5dd4a34135582248315dfdca.csv", string
participant_detail_10femctrl = read.csv("./data/study/prolific_export_5dd86d9f8f45b98265115ada.csv", st
```

### 2.0.1 Data Cleaning

[[TBD]]<sup>1</sup>

```
# Stack panel data
results_stacked = bind_rows(results_panel1_raw %>% mutate(panel = 1)
                           , results_panel2_raw %>% mutate(panel = 2)
                           , results_10femctrl_raw %>% mutate(panel = 2)) %>%
  merge(bind_rows(participant_detail_panel1
                  , participant_detail_panel2
                  , participant_detail_10femctrl) %>%
    select(-session_id, -status, -age)
    , by.x = "PROLIFIC_PID"
    , by.y = "participant_id"
    , all.x = TRUE)

# Adjust all variable names to remove '-' and '.' + lowercase
names(results_stacked) = tolower(gsub(x = names(results_stacked), pattern = "\\-|\\.", replacement = "_"))

# Discrete variables as factors (manual ordering for plotting)
ideology_levels = c("Very Liberal", "Lean Liberal", "Liberal", "Moderate", "Conservative", "Lean Conserv
ubi_group_levels = c("Promoter", "Passive", "Detractor")
ubi_familiarity_levels = c("Extremely familiar", "Very familiar", "Moderately familiar", "Slightly famili

results_full = results_stacked %>%
  # Define arms and nodes
  mutate(arm = case_when(grepl('a', fc_b_1, ignore.case = TRUE) ~ "purity_base"
                        , grepl('a', fc_c_1, ignore.case = TRUE) ~ "purity_extension"
                        , grepl('a', fc_d_1, ignore.case = TRUE) ~ "fairness_base"
                        , grepl('a', fc_e_1, ignore.case = TRUE) ~ "fairness_extension"
                        , TRUE ~ "control") %>% factor(levels = c("control", "purity_base", "purity_ex
    , node = paste0(arm, "_panel_", panel)
    , arm_level = case_when(grepl('base', arm) ~ 'base'
                          , grepl('extension', arm) ~ 'extension'
```

---

<sup>1</sup>[[Example footnote]]

```

, TRUE ~ 'control') %>% factor(levels = c("control", "base", "extension"))
# Combine reaction vars from different arms
, purity_q1_self = case_when(grepl('a', fc_b_1, ignore.case = TRUE) ~ fc_b_1
, TRUE ~ fc_c_1)
, purity_q2_repulsed = case_when(grepl('a', fc_b_2, ignore.case = TRUE) ~ fc_b_2
, TRUE ~ fc_c_2)
, purity_q3_injustice = case_when(grepl('a', fc_b_3, ignore.case = TRUE) ~ fc_b_3
, TRUE ~ fc_c_3)
, purity_q4_relieved = fc_c_4
, fairness_q1_self = case_when(grepl('a', fc_d_1, ignore.case = TRUE) ~ fc_d_1
, TRUE ~ fc_e_1)
, fairness_q2_pain = case_when(grepl('a', fc_d_2, ignore.case = TRUE) ~ fc_d_2
, TRUE ~ fc_e_2)
, fairness_q3_injustice = case_when(grepl('a', fc_d_3, ignore.case = TRUE) ~ fc_d_3
, TRUE ~ fc_e_3)
, fairness_q4_relieved = fc_e_4
, open_text_reaction = q3_fc2
# Factor variables
, ideology = factor(polinspect, levels = ideology_levels)
, ideology_bin = case_when(is.na(ideology) ~ "missing"
, ideology == "Very Liberal" ~ "liberal"
, ideology == "Lean Liberal" ~ "liberal"
, ideology == "Liberal" ~ "liberal"
, ideology == "Very Conservative" ~ "conservative"
, ideology == "Lean Conservative" ~ "conservative"
, ideology == "Conservative" ~ "conservative"
, TRUE ~ "moderate")
, ubi_group = factor(ubi_2_nps_group, levels = ubi_group_levels)
, ubi_familiarity = factor(ubi_f, levels = ubi_familiarity_levels)
, ubi_familiarity_bin = case_when(ubi_f == "Not familiar at all" ~ 0
, TRUE ~ 1)

# Numeric variables
, ubi_number = as.numeric(ubi_2))

results_clean = results_full %>%
  select(prolific_pid, panel, arm, node, arm_level
, ideology, ideology_bin, age, gender, urban, employment_status, student_status
, purity_q1_self, purity_q2_repulsed, purity_q3_injustice, purity_q4_relieved
, fairness_q1_self, fairness_q2_pain, fairness_q3_injustice, fairness_q4_relieved
, open_text_reaction
, ubi_number, ubi_group, ubi_familiarity, ubi_familiarity_bin)

results_clean = results_clean %>% mutate(
  purity_q2_repulsed_bin = case_when(is.na(purity_q2_repulsed) ~ NA_real_
, purity_q2_repulsed %in% c("None at all", "A little") ~ 0
, purity_q2_repulsed %in% c("A moderate amount", "A great deal", "A
, TRUE ~ NA_real_)
, purity_q4_relieved_bin = case_when(is.na(purity_q4_relieved) ~ NA_real_
, purity_q4_relieved %in% c("None at all", "A little") ~ 0
, purity_q4_relieved %in% c("A moderate amount", "A great deal", "A
, TRUE ~ NA_real_)
, fairness_q2_pain_bin = case_when(is.na(fairness_q2_pain) ~ NA_real_
, fairness_q2_pain %in% c("None at all", "A little") ~ 0

```

```

, fairness_q2_pain %in% c("A moderate amount", "A great deal", "A
, TRUE ~ NA_real_)
, fairness_q4_relieved_bin = case_when(is.na(fairness_q4_relieved) ~ NA_real_
, fairness_q4_relieved %in% c("None at all", "A little") ~ 0
, fairness_q4_relieved %in% c("A moderate amount", "A great de
, TRUE ~ NA_real_)
)

```

## 2.1 Exploratory Analysis

[[TBD]]

### 2.1.1 Study Setup

```

arm_counts_bypanel = results_clean %>%
  group_by(arm, panel, node) %>%
  summarise(count = n())

nodes = data.frame(
  id = 1:8
  , group = c("ideology", "ideology"
    , "fairness", "fairness"
    , "purity", "purity"
    , "control"
    , "treatment"
  )
  , label = c("All Liberals", "All Conservatives"
    , "Fairness Base"
    , "Fairness Extension"
    , "Purity Base"
    , "Purity Extension"
    , "Control"
    , "Treatment"
  )
  , level = c(1, 1, 3, 4, 3, 4, 2, 2)
  # , mass = c(sum(arm_counts_bypanel$count[arm_counts_bypanel$panel==1])
  #           , sum(arm_counts_bypanel$count[arm_counts_bypanel$panel==2]), arm_counts_all$count)
  , shape = rep("box", 8)
)

edges = data.frame(
  from = c(1, 2, 1, 2, 8, 8, 3, 5)
  , to = c(7, 7, 8, 8, 3, 5, 4, 6)
  , dashes = c(rep(FALSE, 6), rep(TRUE, 2))
)

visNetwork(nodes, edges) %>%
  visEdges(arrows = "to") %>%
  visHierarchicalLayout(direction = "LR")

```

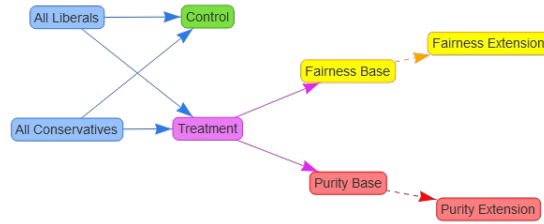


Figure 1: Study Setup

### 2.1.2 Demographics

```

grpstackbar_plot = ggplot() +
  facet_grid( ~ panel) +
  scale_fill_brewer(type = "div", palette = 5, direction = -1, aesthetics = "fill") +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))

# Ideology
plot_ideology = grpstackbar_plot +
  geom_bar(data = results_clean %>% group_by(ideology, panel) %>% summarise(count = n())
    , aes(x = ideology, y = count, fill = ideology)
    , stat = "identity") +
  theme(legend.position = "left", axis.text.x=element_blank(), legend.text=element_text(size = 8))

# Age
plot_age = grpstackbar_plot +
  geom_bar(data = results_clean %>% group_by(age, ideology, panel) %>% summarise(count = n())
    , aes(x = age, y = count, fill = ideology)
    , stat = "identity", show.legend = FALSE)

# Gender
plot_gender = grpstackbar_plot +
  geom_bar(data = results_clean %>% group_by(gender, ideology, panel) %>% summarise(count = n())
    , aes(x = gender, y = count, fill = ideology)
    , stat = "identity", show.legend = FALSE)

# Urban

```

```

plot_urban = grpstackbar_plot +
  geom_bar(data = results_clean %>% group_by(urban, ideology, panel) %>% summarise(count = n())
    , aes(x = urban, y = count, fill = ideology)
    , stat = "identity", show.legend = FALSE)

grid.arrange(plot_ideology, plot_age
  , plot_gender, plot_urban
  , nrow = 2)

```

Example reference to r cell *Figure 2* shows *[[TBD]]*

### 2.1.3 Reactions

```

response_levels = c("A great deal", "A lot", "A moderate amount", "A little", "None at all")

results_response = results_clean %>%
  select(panel, arm
    , purity_q1_self, purity_q2_repulsed, purity_q3_injustice, purity_q4_relieved
    , fairness_q1_self, fairness_q2_pain, fairness_q3_injustice, fairness_q4_relieved) %>%
  gather(prompt, value, -panel, -arm) %>%
  filter(!is.na(value)) %>%
  group_by(panel, arm, prompt, value) %>% summarise(count = n()) %>%
  mutate(response = factor(value, levels = response_levels))

ggplot(data = results_response
  , aes(x = prompt, y = response, fill = count)) +
  geom_tile() +
  facet_grid(rows = vars(arm), cols = vars(panel)) +
  scale_fill_distiller(direction = 1) +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))

results_response_bin = results_clean %>%
  select(ideology_bin, arm
    , purity_q2_repulsed_bin, purity_q4_relieved_bin
    , fairness_q2_pain_bin, fairness_q4_relieved_bin) %>%
  gather(prompt, value, -ideology_bin, -arm) %>%
  filter(!is.na(value)) %>%
  group_by(ideology_bin, arm, prompt, value) %>% summarise(count = n())

ggplot(data = results_response_bin
  , aes(x = prompt, y = value, fill = count)) +
  geom_tile() +
  facet_grid(rows = vars(arm), cols = vars(ideology_bin)) +
  scale_fill_distiller(direction = 1) +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))

```

*# One for Libs/Cons*

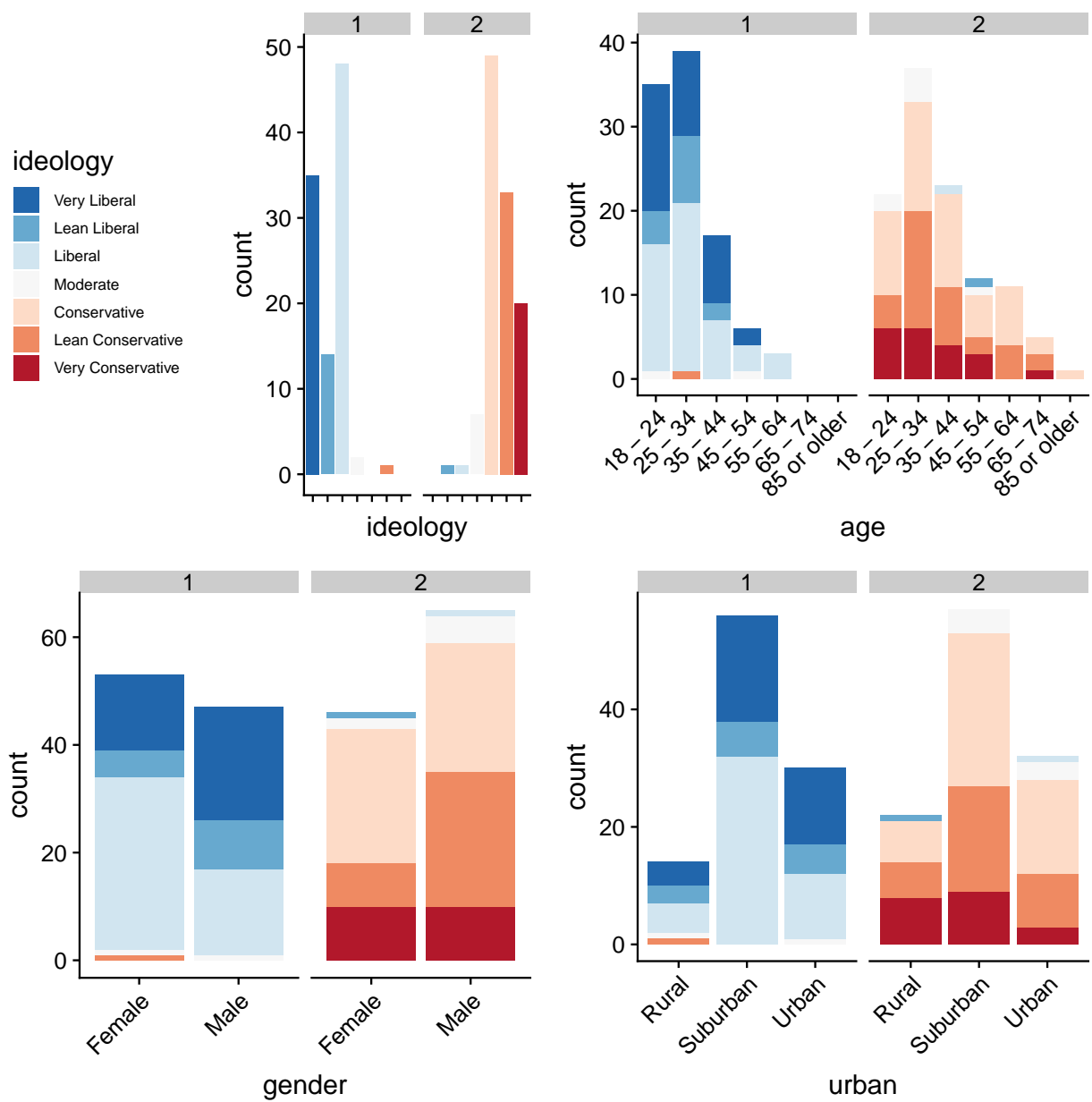


Figure 2: Demographics

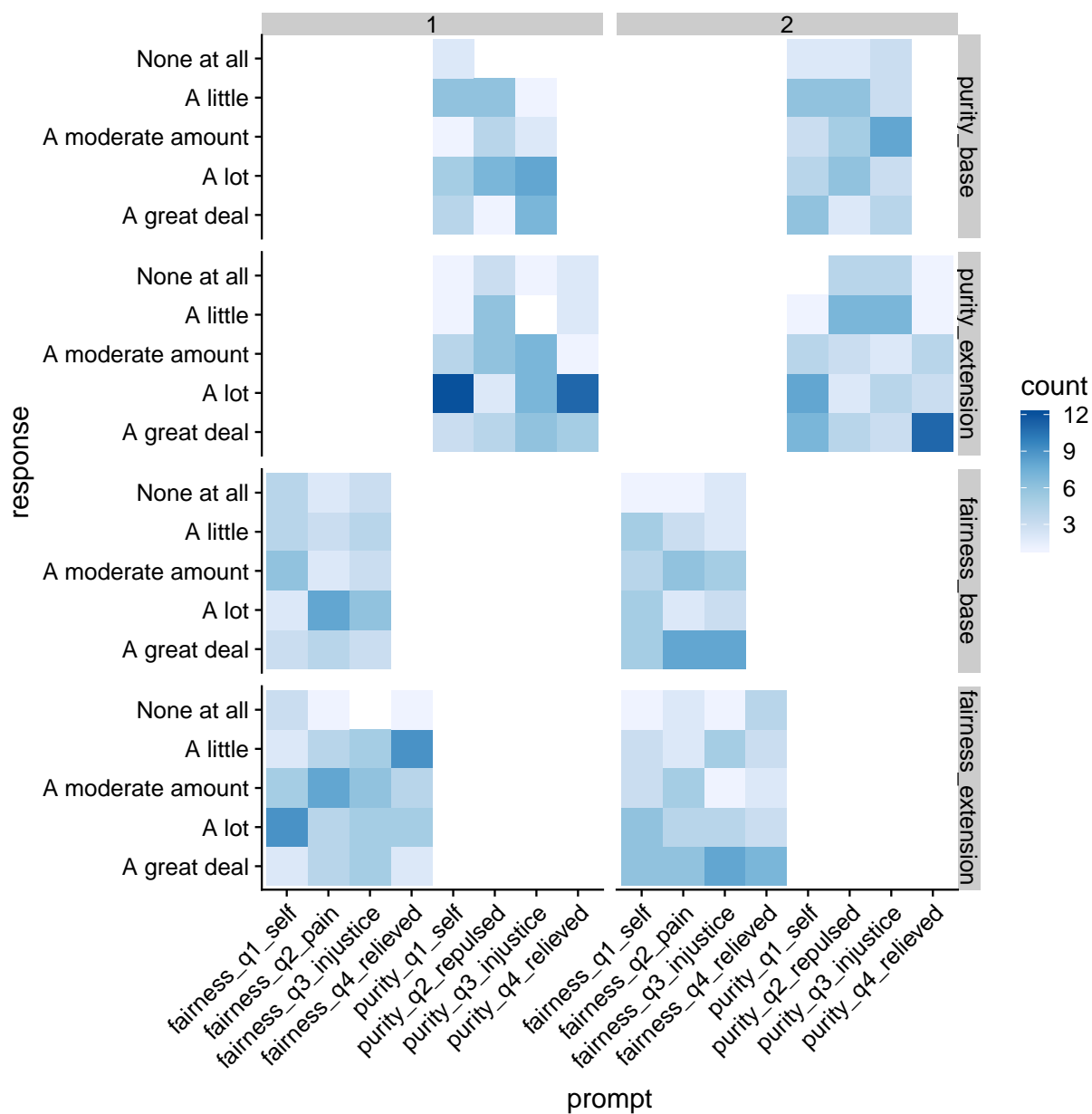


Figure 3: Reactions



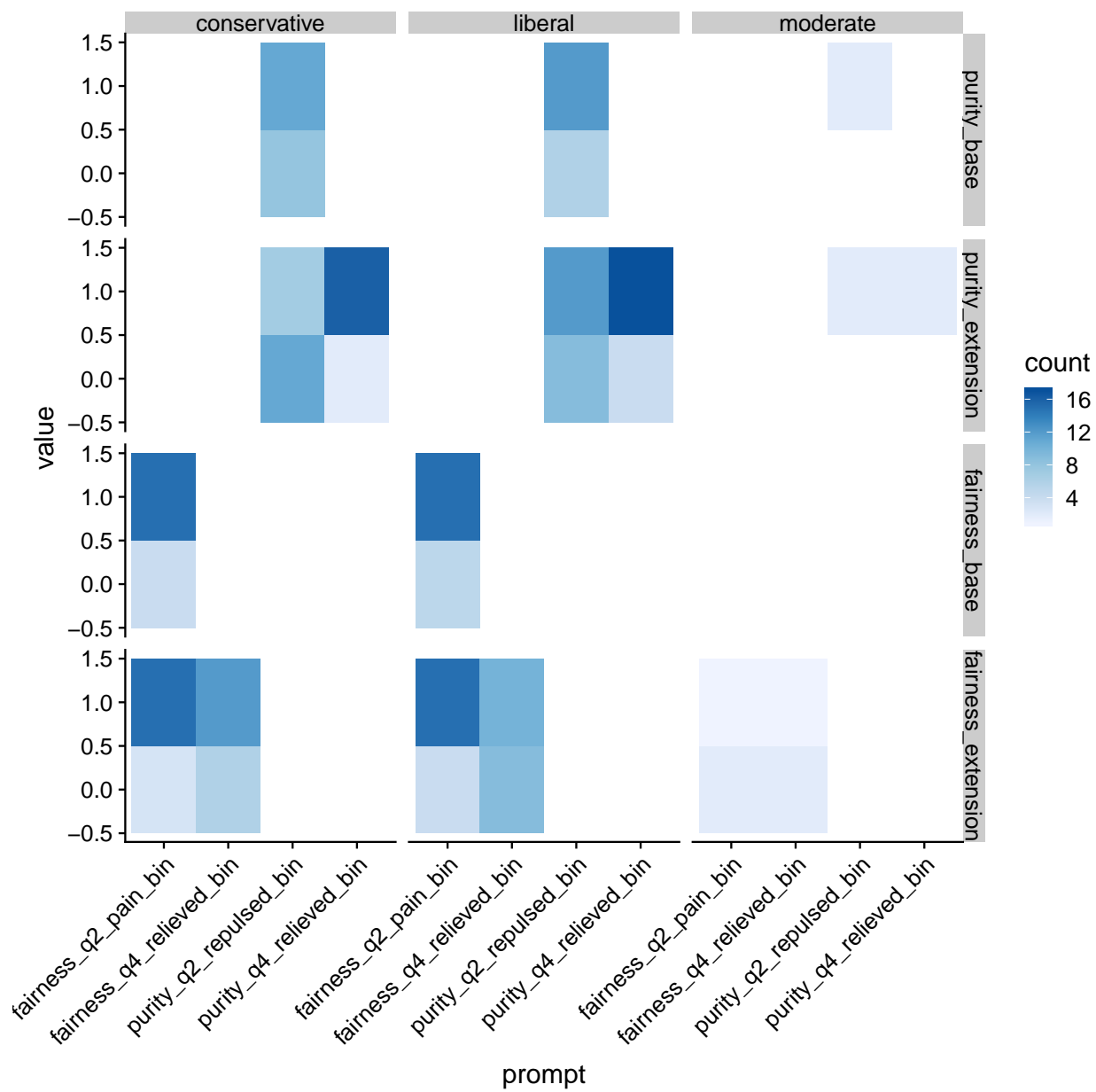


Figure 4: Reactions (Bin)

### 2.1.4 Outcome

```
# Histogram of familiarity
plot_familiarity = ggplot(data = results_clean %>% group_by(ubi_familiarity, ideology, panel) %>% summarise(count = count(ubi_familiarity))) +
  aes(x = ubi_familiarity, y = count, fill = ideology)) +
  geom_bar(stat="identity", show.legend = FALSE) +
  facet_grid( ~ panel) +
  scale_fill_brewer(type = "div", palette = 5, direction = -1, aesthetics = "fill") +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))

# Heat map of number UBI like
plot_ubi = ggplot(data = results_clean %>% group_by(ubi_familiarity, ideology) %>% summarise(ubi_number_avg = mean(ubi_number))) +
  aes(x = ideology, y = ubi_familiarity, fill = ubi_number_avg)) +
  geom_tile() +
  scale_fill_distiller(direction = 1) +
  theme(axis.text.x = element_text(angle = 45, hjust = 1)
        , legend.position = "right")

grid.arrange(plot_familiarity, plot_ubi
              , nrow = 2)
```

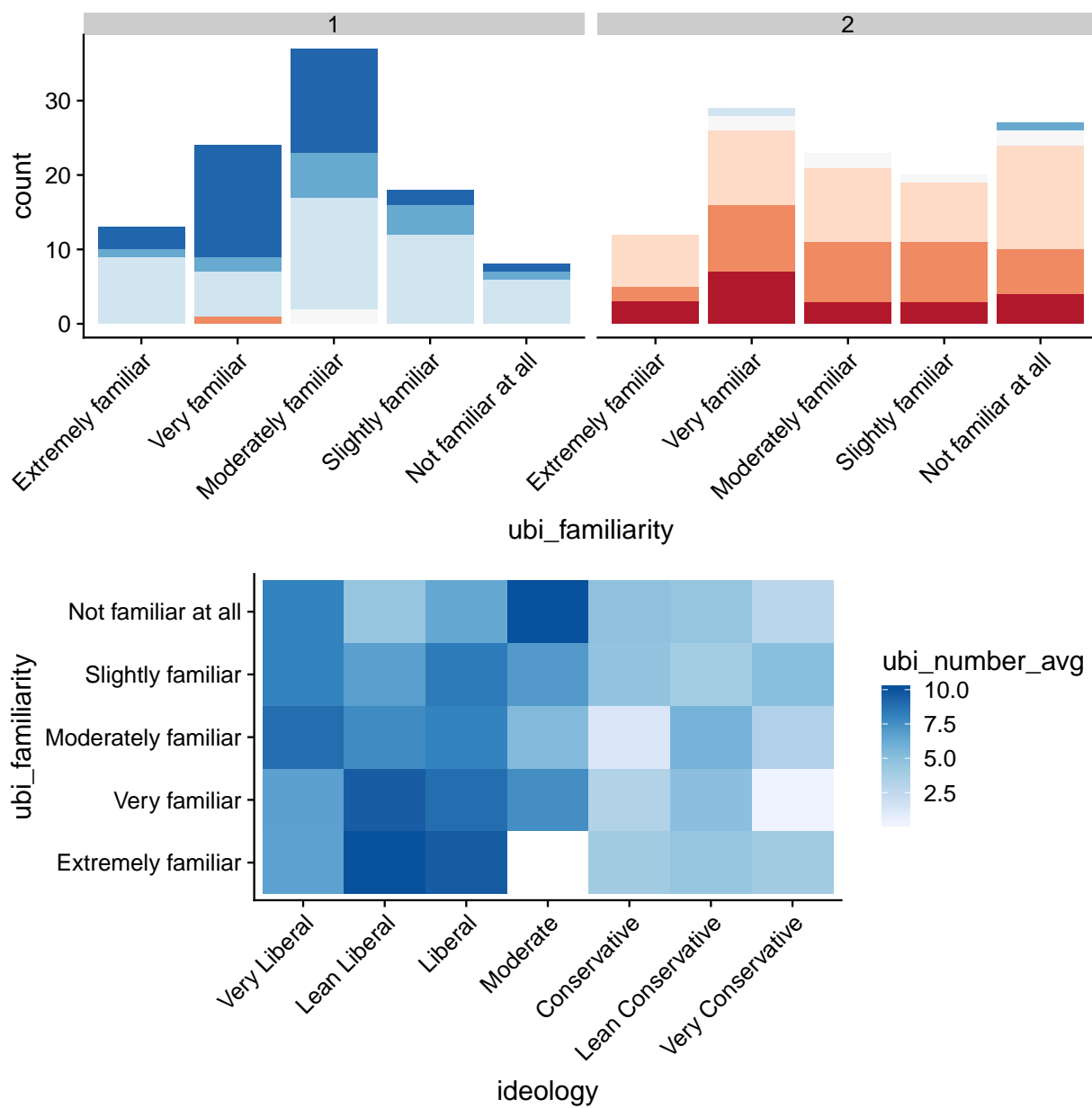


Figure 5: Outcomes

## 3 Methodology

### 3.1 Model 1

Independent variable

Dependent variable

Model specification

[[TBD]]. (see ??)

```
my_lm_calcs = function(lm_in, clusters_in){  
  # Robust  
  vcov_robust = vcovHC(lm_in)  
  se_robust = sqrt(diag(vcov_robust))  
  # Cluster  
  if(length(clusters_in) > 1){  
    vcov_cluster = cluster.vcov(lm_in, clusters_in)  
    se_cluster = sqrt(diag(vcov_cluster))  
  } else {  
    vcov_cluster = NA  
    se_cluster = NA  
  }  
  # Output  
  lm_out = list(lm = lm_in  
                , vcov_robust = vcov_robust  
                , se_robust = se_robust  
                , vcov_cluster = vcov_cluster  
                , se_cluster = se_cluster  
                )  
  return(lm_out)  
}
```

```
# Summaries  
all_data = data.table(results_full)  
all_data[, ideology_bin := case_when(is.na(ideology) ~ "missing",  
                                     ideology=="Very Liberal" ~ "liberal",  
                                     ideology=="Lean Liberal" ~ "liberal",  
                                     ideology=="Liberal" ~ "liberal",  
                                     ideology=="Very Conservative" ~ "conservative",  
                                     ideology=="Lean Conservative" ~ "conservative",  
                                     ideology=="Conservative" ~ "conservative",  
                                     TRUE ~ "moderate"), ]  
all_data[, story := case_when(is.na(arm) ~ "missing",  
                              arm=="control" ~ "",  
                              arm=="purity_base" ~ "homeless",  
                              arm=="purity_extension" ~ "homeless-cleaned",  
                              arm=="fairness_base" ~ "bullying",  
                              arm=="fairness_extension" ~ "bullying-addressed",  
                              TRUE ~ "others"), ]  
all_data[, FemaleReader := ifelse(gender!="Male", 1, 0), ]  
all_data[, ubi_familiarity_dummy := ifelse(ubi_familiarity_bin!="yes", 1, 0), ]  
all_data[, ubi := as.numeric(ubi_2), ]  
all_data[, .(ubi=mean(as.numeric(ubi_2)), .N), keyby=list(ideology_bin, story, FemaleReader) ]
```

##	ideology_bin	story	FemaleReader	ubi	N
## 1:	conservative		0	4.642857	14
## 2:	conservative		1	1.866667	15
## 3:	conservative	bullying	0	4.363636	11
## 4:	conservative	bullying	1	1.625000	8
## 5:	conservative	bullying-addressed	0	4.500000	10
## 6:	conservative	bullying-addressed	1	4.750000	8
## 7:	conservative	homeless	0	5.416667	12
## 8:	conservative	homeless	1	1.714286	7
## 9:	conservative	homeless-cleaned	0	4.666667	12
## 10:	conservative	homeless-cleaned	1	3.166667	6
## 11:	liberal		0	9.142857	7
## 12:	liberal		1	7.500000	14
## 13:	liberal	bullying	0	7.700000	10
## 14:	liberal	bullying	1	8.000000	10
## 15:	liberal	bullying-addressed	0	8.100000	10
## 16:	liberal	bullying-addressed	1	6.111111	9
## 17:	liberal	homeless	0	7.909091	11
## 18:	liberal	homeless	1	9.428571	7
## 19:	liberal	homeless-cleaned	0	7.444444	9
## 20:	liberal	homeless-cleaned	1	8.666667	12
## 21:	moderate		0	7.000000	1
## 22:	moderate		1	8.000000	1
## 23:	moderate	bullying-addressed	0	4.333333	3
## 24:	moderate	homeless	0	7.500000	2
## 25:	moderate	homeless-cleaned	1	10.000000	2
##	ideology_bin	story	FemaleReader	ubi	N

```
# augment model with results from coefteest and coefci using
# the supplied variance/covariance matrix
```

```
apply_robust_estimates = function(model, vcovmatrix) {
  model$robust.coefteest = coefteest(model, vcov. = vcovmatrix)
  model$robust.estimate = model$robust.coefteest[, 'Estimate']
  model$robust.std.error = model$robust.coefteest[, 'Std. Error']
  model$robust.statistic = model$robust.coefteest[, 't value']
  model$robust.p.value = model$robust.coefteest[, 'Pr(>|t|)']
  model$robust.coefci = coefci(model, vcov. = vcovmatrix)
  model$robust.ci.low = model$robust.coefci[, "2.5 %"]
  model$robust.ci.high = model$robust.coefci[, "97.5 %"]
  model
}
```

```
# liberals - homeless story
```

```
hom_lib_mod<-all_data[ ideology_bin=='liberal' & story != 'bullying' & story != 'bullying-addressed', ]
hom_lib_mod<-apply_robust_estimates(hom_lib_mod, vcovHC(hom_lib_mod))
```

```
# conservatives - homeless story
```

```
hom_con_mod<-all_data[ ideology_bin=='conservative' & story != 'bullying' & story != 'bullying-addressed', ]
hom_con_mod<-apply_robust_estimates(hom_con_mod, vcovHC(hom_con_mod))
```

```
# liberals - jacket story
```

```
jac_lib_mod<-all_data[ ideology_bin=='liberal' & story != 'homeless' & story != 'homeless-cleaned', ]
jac_lib_mod<-apply_robust_estimates(jac_lib_mod, vcovHC(jac_lib_mod))
```

```
# conservatives - jacket story
```

```
jac_con_mod<-all_data[ ideology_bin=='conservative' & story != 'homeless' & story != 'homeless-cleaned', ]
jac_con_mod<-apply_robust_estimates(jac_con_mod, vcovHC(jac_con_mod))
```

```
stargazer(hom_lib_mod, hom_con_mod,
```

```

type = 'text',
se = list(sqrt(diag(vcovHC(hom_lib_mod))),
          sqrt(diag(vcovHC(hom_con_mod)))),
header=F,
report=('v*c*sp'),
add.lines=list(c("Ideology", "Liberal", "Conservative")))

```

```

##
## =====
##                               Dependent variable:
##                               -----
##                               ubi
##                               (1)          (2)
## -----
## storyhomeless                -1.234**      0.774
##                               (0.616)      (1.605)
##                               p = 0.046      p = 0.630
##
## storyhomeless-cleaned         -1.698*      0.024
##                               (1.003)      (1.401)
##                               p = 0.091      p = 0.987
##
## FemaleReader                 -1.643**      -2.776**
##                               (0.813)      (1.227)
##                               p = 0.044      p = 0.024
##
## storyhomeless:FemaleReader     3.162***      -0.926
##                               (0.976)      (2.011)
##                               p = 0.002      p = 0.646
##
## storyhomeless-cleaned:FemaleReader 2.865**      1.276
##                               (1.271)      (1.891)
##                               p = 0.025      p = 0.500
##
## Constant                     9.143***      4.643***
##                               (0.436)      (0.983)
##                               p = 0.000      p = 0.00001
##
## -----
## Ideology                     Liberal      Conservative
## Observations                  60          66
## R2                           0.154        0.177
## Adjusted R2                   0.075        0.108
## Residual Std. Error          1.815 (df = 54)  3.278 (df = 60)
## F Statistic                   1.962* (df = 5; 54) 2.582** (df = 5; 60)
## =====
## Note:                        *p<0.1; **p<0.05; ***p<0.01

```

```

stargazer(jac_lib_mod, jac_con_mod,
type = 'text',
se = list(sqrt(diag(vcovHC(jac_lib_mod))),
          sqrt(diag(vcovHC(jac_con_mod)))),
header=F,

```

```
report=(v*c*sp'),
add.lines=list(c("Ideology", "Liberal", "Conservative"))))
```

```
##
## =====
##                               Dependent variable:
##                               -----
##                               ubi
##                               (1)          (2)
## -----
## storybullying                -1.443      -0.279
##                               (1.097)      (1.446)
##                               p = 0.189      p = 0.847
##
## storybullying-addressed       -1.043*     -0.143
##                               (0.612)      (1.673)
##                               p = 0.089      p = 0.932
##
## FemaleReader                 -1.643**     -2.776**
##                               (0.813)      (1.227)
##                               p = 0.044      p = 0.024
##
## storybullying:FemaleReader     1.943      0.038
##                               (1.538)      (2.004)
##                               p = 0.207      p = 0.986
##
## storybullying-addressed:FemaleReader -0.346      3.026
##                               (1.218)      (2.378)
##                               p = 0.777      p = 0.204
##
## Constant                     9.143***     4.643***
##                               (0.436)      (0.983)
##                               p = 0.000      p = 0.00001
##
## -----
## Ideology                     Liberal      Conservative
## Observations                  60          66
## R2                           0.126        0.141
## Adjusted R2                   0.045        0.069
## Residual Std. Error          2.278 (df = 54)  3.443 (df = 60)
## F Statistic                   1.555 (df = 5; 54) 1.967* (df = 5; 60)
## =====
## Note:                         *p<0.1; **p<0.05; ***p<0.01
```

```
# augment model with results from coeftest and coefci using
# the supplied variance/covariance matrix
# liberals - homeless story
hom_lib_mod_2<-all_data[ ideology_bin=='liberal' & story != 'bullying' & story != 'bullying-addressed',
hom_lib_mod_2<-apply_robust_estimates(hom_lib_mod_2, vcovHC(hom_lib_mod_2))
# conservatives - homeless story
hom_con_mod_2<-all_data[ ideology_bin=='conservative' & story != 'bullying' & story != 'bullying-addressed',
hom_con_mod_2<-apply_robust_estimates(hom_con_mod_2, vcovHC(hom_con_mod_2))
# liberals - jacket story
```

```

jac_lib_mod_2<-all_data[ ideology_bin=='liberal' & story != 'homeless' & story != 'homeless-cleaned', ]
jac_lib_mod_2<-apply_robust_estimates(jac_lib_mod_2, vcovHC(jac_lib_mod_2))
# conservatives - jacket story
jac_con_mod_2<-all_data[ ideology_bin=='conservative' & story != 'homeless' & story != 'homeless-cleaned', ]
jac_con_mod_2<-apply_robust_estimates(jac_con_mod_2, vcovHC(jac_con_mod_2))
stargazer(hom_lib_mod_2, hom_con_mod_2,
          type = 'text',
          se = list(sqrt(diag(vcovHC(hom_lib_mod_2))),
                    sqrt(diag(vcovHC(hom_con_mod_2)))),
          header=F,
          report=('v*c*sp'),
          add.lines=list(c("Ideology", "Liberal", "Conservative"))))

```

```

##
## =====
##                                     Dependent variable:
##                                     -----
##                                     ubi
##                                     (1)          (2)
## -----
## storyhomeless                    0.452          0.846
##                                (0.600)        (1.143)
##                                p = 0.451      p = 0.460
##
## storyhomeless-cleaned            0.095          0.960
##                                (0.662)        (0.978)
##                                p = 0.886      p = 0.327
##
## ubi_familiarity_dummy
##
##
## storyhomeless:ubi_familiarity_dummy
##
##
## storyhomeless-cleaned:ubi_familiarity_dummy
##
##
## Constant                        8.048***        3.207***
##                                (0.497)        (0.644)
##                                p = 0.000      p = 0.00000
##
## -----
## Ideology                        Liberal          Conservative
## Observations                     60              66
## R2                               0.010            0.017
## Adjusted R2                     -0.024           -0.014
## Residual Std. Error             1.910 (df = 57)    3.496 (df = 63)
## F Statistic                     0.296 (df = 2; 57)  0.545 (df = 2; 63)
## =====
## Note:                            *p<0.1; **p<0.05; ***p<0.01

```



```
stargazer(jac_lib_mod_2, jac_con_mod_2,
  type = 'text',
  se = list(sqrt(diag(vcovHC(jac_lib_mod_2))),
    sqrt(diag(vcovHC(jac_con_mod_2)))),
  header=F,
  report=('v*c*sp'),
  add.lines=list(c("Ideology", "Liberal", "Conservative")))
```

```
##
## =====
##                               Dependent variable:
##                               -----
##                               ubi
##                               (1)          (2)
## -----
## storybullying                -0.198      0.004
##                               (0.794)      (1.038)
##                               p = 0.804      p = 0.998
##
## storybullying-addressed       -0.890      1.404
##                               (0.691)      (1.150)
##                               p = 0.198      p = 0.222
##
## ubi_familiarity_dummy
##
##
## storybullying:ubi_familiarity_dummy
##
##
## storybullying-addressed:ubi_familiarity_dummy
##
##
## Constant                     8.048***      3.207***
##                               (0.497)      (0.644)
##                               p = 0.000      p = 0.00000
##
## -----
## Ideology                     Liberal      Conservative
## Observations                  60          66
## R2                           0.027        0.031
## Adjusted R2                  -0.007        0.0004
## Residual Std. Error          2.340 (df = 57)  3.568 (df = 63)
## F Statistic                   0.783 (df = 2; 57) 1.012 (df = 2; 63)
## =====
## Note:                         *p<0.1; **p<0.05; ***p<0.01
```

#### # Exploratory

```
results_armlibfair = results_clean %>% filter(ideology_bin == 'liberal' & grepl('fairness|control', arm))
results_armlibpure = results_clean %>% filter(ideology_bin == 'liberal' & grepl('purity|control', arm))
results_armconfair = results_clean %>% filter(ideology_bin == 'conservative' & grepl('fairness|control', arm))
```

```

results_armconpur = results_clean %>% filter(ideology_bin == 'conservative' & grepl('purity|control', a

modell1_libfair = my_lm_calcs(lm_in = lm(ubi_number ~ arm_level, data = results_armlibfair), clusters_in
modell1_libpure = my_lm_calcs(lm_in = lm(ubi_number ~ arm_level, data = results_armlibpure), clusters_in
modell1_confair = my_lm_calcs(lm_in = lm(ubi_number ~ arm_level, data = results_armconfair) , clusters_in
modell1_conpure = my_lm_calcs(lm_in = lm(ubi_number ~ arm_level, data = results_armconpur), clusters_in

stargazer(modell1_libfair$lm, modell1_libpure$lm
, modell1_confair$lm, modell1_conpure$lm
, type = stargazer_type, header = F
, se = list(modell1_libfair$se_robust, modell1_libpure$se_robust
, modell1_confair$se_robust, modell1_conpure$se_robust)
, title = "Moral Foundations Prelim Regression Specifications"
, column.labels = c("Lib + Fair", "Lib + Purity"
, "Con + Fair", "Con + Purity")
, notes = "HC Robust Standard Errors"
, report = ('v*c*sp')
)

```

Table 1: Moral Foundations Prelim Regression Specifications

	<i>Dependent variable:</i>			
	ubi_number			
	Lib + Fair	Lib + Purity	Con + Fair	Con + Purity
	(1)	(2)	(3)	(4)
arm_levelbase	−0.198 (0.794) p = 0.804	0.452 (0.600) p = 0.451	0.004 (1.038) p = 0.998	0.846 (1.143) p = 0.460
arm_levelextension	−0.890 (0.691) p = 0.198	0.095 (0.662) p = 0.886	1.404 (1.150) p = 0.222	0.960 (0.978) p = 0.327
Constant	8.048*** (0.497) p = 0.000	8.048*** (0.497) p = 0.000	3.207*** (0.644) p = 0.00000	3.207*** (0.644) p = 0.00000
Observations	60	60	66	66
R <sup>2</sup>	0.027	0.010	0.031	0.017
Adjusted R <sup>2</sup>	−0.007	−0.024	0.0004	−0.014
Residual Std. Error	2.340 (df = 57)	1.910 (df = 57)	3.568 (df = 63)	3.496 (df = 63)
F Statistic	0.783 (df = 2; 57)	0.296 (df = 2; 57)	1.012 (df = 2; 63)	0.545 (df = 2; 63)

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01  
HC Robust Standard Errors

```

par(mfrow=c(2,2))
which_in = 2
plot (modell1_libfair$lm, which = which_in)
plot (modell1_libpure$lm, which = which_in)
plot (modell1_confair$lm, which = which_in)

```

```
plot (model1_conpure$lm, which = which_in)
```

```
arm_plot_df = function(model_in, group_in){
  baseline_val = model_in$lm$coefficients[1]
```

```
  arm_plot_df = data.frame(group = rep(group_in, 3)
    , arm = c("control", "base", "extension")
    , coef = model_in$lm$coefficients
    , se = model_in$se_robust
```

```
  ) %>%
    mutate(baseline = baseline_val
      , ubi = case_when(arm == "control" ~ coef
        , TRUE ~ coef + baseline))
```

```
  return(arm_plot_df)
```

```
}
```

```
arm_plot_libpure = arm_plot_df(model_in = model1_libpure, group_in = "liberal_pure")
```

```
arm_plot_libfair = arm_plot_df(model_in = model1_libfair, group_in = "liberal_fair")
```

```
arm_plot_conpure = arm_plot_df(model_in = model1_conpure, group_in = "conservative_pure")
```

```
arm_plot_confair = arm_plot_df(model_in = model1_confair, group_in = "conservative_fair")
```

```
ggplot() +
```

```
  geom_point(data = arm_plot_libpure, aes(x = baseline, y = ubi, shape = group, color = arm, size = 10))
```

```
  geom_point(data = arm_plot_libfair, aes(x = baseline, y = ubi, shape = group, color = arm, size = 10))
```

```
  geom_point(data = arm_plot_conpure, aes(x = baseline, y = ubi, shape = group, color = arm, size = 10))
```

```
  geom_point(data = arm_plot_confair, aes(x = baseline, y = ubi, shape = group, color = arm, size = 10))
```

```
  geom_abline(slope = 1, intercept = 0)
```

```
model1_libfair_gender = my_lm_calcs(lm_in = lm(ubi_number ~ arm_level*gender, data = results_armlibfair)
```

```
model1_libpure_gender = my_lm_calcs(lm_in = lm(ubi_number ~ arm_level*gender, data = results_armlibpure)
```

```
model1_confair_gender = my_lm_calcs(lm_in = lm(ubi_number ~ arm_level*gender, data = results_armconfair)
```

```
model1_conpure_gender = my_lm_calcs(lm_in = lm(ubi_number ~ arm_level*gender, data = results_armconpure)
```

```
stargazer(model1_libfair_gender$lm, model1_libpure_gender$lm
```

```
  , model1_confair_gender$lm, model1_conpure_gender$lm
```

```
  , type = stargazer_type, header = F
```

```
  , se = list(model1_libfair_gender$se_robust, model1_libpure_gender$se_robust
```

```
    , model1_confair_gender$se_robust, model1_conpure_gender$se_robust)
```

```
  , title = "Moral Foundations Prelim Regression Specifications"
```

```
  , column.labels = c("Lib + Fair", "Lib + Purity"
```

```
    , "Con + Fair", "Con + Purity")
```

```
  , notes = "HC Robust Standard Errors"
```

```
  , report = ('v*c*sp')
```

```
)
```

```
model1_libfair_familiarity = my_lm_calcs(lm_in = lm(ubi_number ~ arm_level+ubi_familiarity_bin, data =
```

```
model1_libpure_familiarity = my_lm_calcs(lm_in = lm(ubi_number ~ arm_level+ubi_familiarity_bin, data =
```

```
model1_confair_familiarity = my_lm_calcs(lm_in = lm(ubi_number ~ arm_level+ubi_familiarity_bin, data =
```

```
model1_conpure_familiarity = my_lm_calcs(lm_in = lm(ubi_number ~ arm_level+ubi_familiarity_bin, data =
```

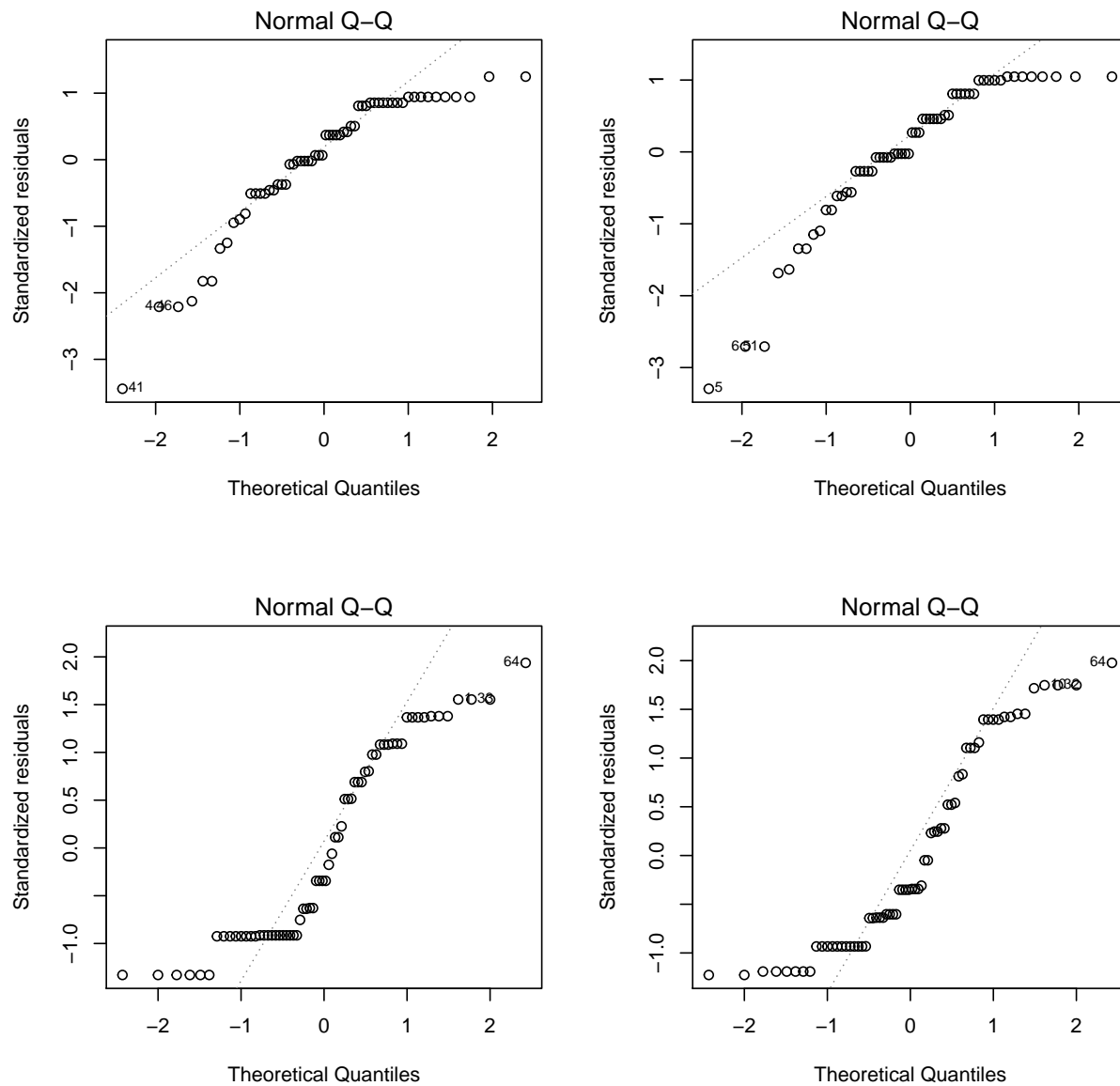


Figure 6: Model 1 Arms 1-4 - Residuals vs. Fitted

Table 2: Moral Foundations Prelim Regression Specifications

	<i>Dependent variable:</i>			
	ubi_number			
	Lib + Fair (1)	Lib + Purity (2)	Con + Fair (3)	Con + Purity (4)
arm_levelbase	0.500 (1.078) p = 0.643	1.929** (0.757) p = 0.011	-0.242 (1.387) p = 0.862	-0.152 (1.212) p = 0.900
arm_levelextension	-1.389 (1.053) p = 0.188	1.167 (0.780) p = 0.135	2.883* (1.690) p = 0.088	1.300 (1.270) p = 0.306
genderMale	1.643** (0.813) p = 0.044	1.643** (0.813) p = 0.044	2.776** (1.227) p = 0.024	2.776** (1.227) p = 0.024
arm_levelbase:genderMale	-1.943 (1.538) p = 0.207	-3.162*** (0.976) p = 0.002	-0.038 (2.004) p = 0.986	0.926 (2.011) p = 0.646
arm_levelextension:genderMale	0.346 (1.218) p = 0.777	-2.865** (1.271) p = 0.025	-3.026 (2.378) p = 0.204	-1.276 (1.891) p = 0.500
Constant	7.500*** (0.686) p = 0.000	7.500*** (0.686) p = 0.000	1.867** (0.734) p = 0.012	1.867** (0.734) p = 0.012
Observations	60	60	66	66
R <sup>2</sup>	0.126	0.154	0.141	0.177
Adjusted R <sup>2</sup>	0.045	0.075	0.069	0.108
Residual Std. Error	2.278 (df = 54)	1.815 (df = 54)	3.443 (df = 60)	3.278 (df = 60)
F Statistic	1.555 (df = 5; 54)	1.962* (df = 5; 54)	1.967* (df = 5; 60)	2.582** (df = 5; 60)

*Note:*\*p<0.1; \*\*p<0.05; \*\*\*p<0.01  
HC Robust Standard Errors

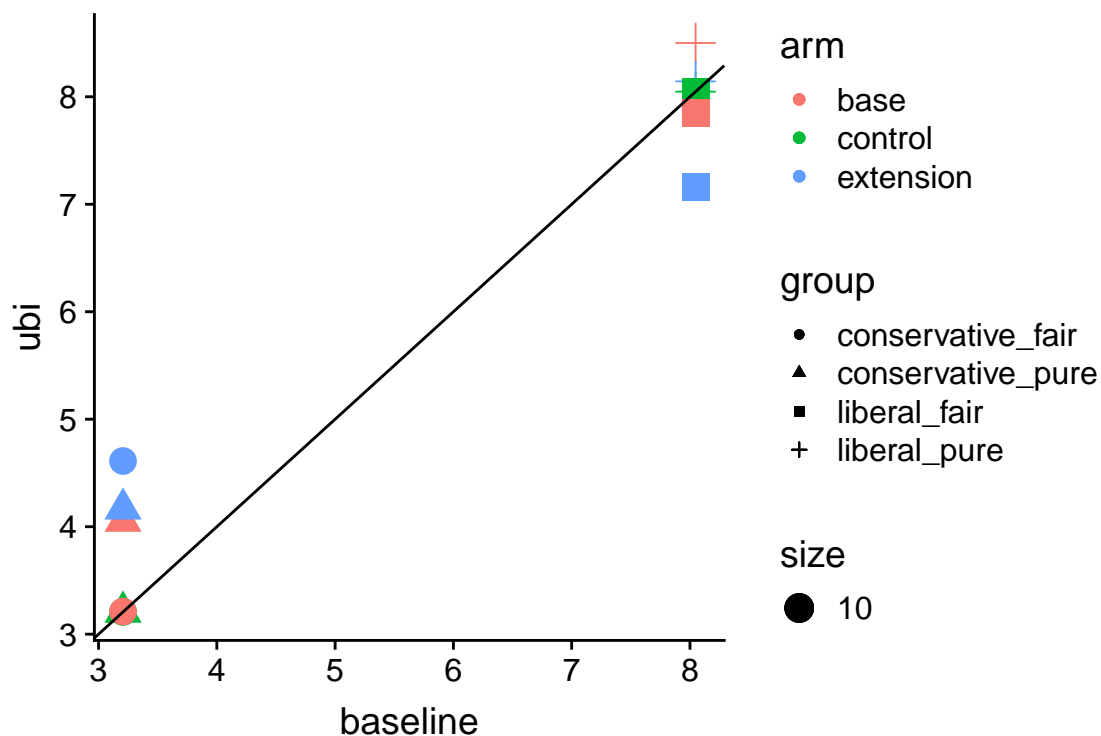


Figure 7: Model 1 Arms 1-4 - Coefficients

```
stargazer(model1_libfair_familiarity$lm, model1_libpure_familiarity$lm
, model1_confair_familiarity$lm, model1_conpure_familiarity$lm
, type = stargazer_type, header = F
, se = list(model1_libfair_familiarity$se_robust, model1_libpure_familiarity$se_robust
, model1_confair_familiarity$se_robust, model1_conpure_familiarity$se_robust)
, title = "Moral Foundations Prelim Regression Specifications"
, column.labels = c("Lib + Fair", "Lib + Purity"
, "Con + Fair", "Con + Purity")
, notes = "HC Robust Standard Errors"
, report = ('v*c*sp')
)
```

[[Example Table]]

Model	Specification	Interpretation	Figure
Model 1	$ubinumber \sim armlevel$	$\Delta armlevel = \beta_1 \Delta ubinumber$	??

# Stargazer

Table 3: Moral Foundations Prelim Regression Specifications

	<i>Dependent variable:</i>			
	ubi_number			
	Lib + Fair (1)	Lib + Purity (2)	Con + Fair (3)	Con + Purity (4)
arm_levelbase	−0.429 (0.759) p = 0.572	0.294 (0.584) p = 0.616	0.129 (1.019) p = 0.900	1.037 (1.197) p = 0.387
arm_levelextension	−1.115* (0.674) p = 0.099	0.095 (0.641) p = 0.882	1.445 (1.181) p = 0.222	1.042 (1.017) p = 0.306
ubi_familiarity_bin	2.495* (1.486) p = 0.094	1.819* (0.992) p = 0.067	−1.252 (1.018) p = 0.220	−0.933 (1.206) p = 0.439
Constant	5.909*** (1.525) p = 0.0002	6.489*** (1.113) p = 0.000	4.070*** (0.962) p = 0.00003	3.851*** (1.069) p = 0.0004
Observations	60	60	66	66
R <sup>2</sup>	0.114	0.106	0.056	0.029
Adjusted R <sup>2</sup>	0.066	0.058	0.010	−0.018
Residual Std. Error	2.253 (df = 56)	1.832 (df = 56)	3.551 (df = 62)	3.502 (df = 62)
F Statistic	2.390* (df = 3; 56)	2.215* (df = 3; 56)	1.218 (df = 3; 62)	0.625 (df = 3; 62)

*Note:*\*p<0.1; \*\*p<0.05; \*\*\*p<0.01  
HC Robust Standard Errors

## 4 Results

*[[TBD]]*



## 5 Conclusion

*[[TBD]]*

## 6 Discussion

*[[TBD]]*

### 6.1 Limitations

*[[TBD]]*

## 7 Technical Appendix

### 7.1 Data Dictionary

Variable Name	Variable	Values	Source	Notes
prolific_pid				
panel				
arm				
node				
arm_level				
ideology				
ideology_bin				
age				
gender				
urban				
employment_status				
student_status				
purity_q1_self				
purity_q2_repulsed				
purity_q3_injustice				
purity_q4_relieved				
fairness_q1_self				
fairness_q2_pain				
fairness_q3_injustice				
fairness_q4_relieved				
open_text_reaction				
ubi_number	UBI Number	Integer 0-10		
ubi_group				
ubi_familiarity				
ubi_familiarity_bin				

## 7.2 Exploratory Data Analysis

Additional steps taken not included in the body of the report

*[[TBD]]*