Data Analysis_HB_09052016

Hendrik Bruns

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Descriptive Statistics

Following are relevant aggregated statistics and statistics by each of the 11 treatments for each of three relevant dependent variables. These relevant dependent variables are 1. Donation, which is the amount the subject donated in order to retire emission rights 2. Donated, which is equal to 1 if the subject donated a positive amount, and 0 otherwise 3. Belief, which is the amount the subject thinks other participants in this experiment donated on average (not incentivized)

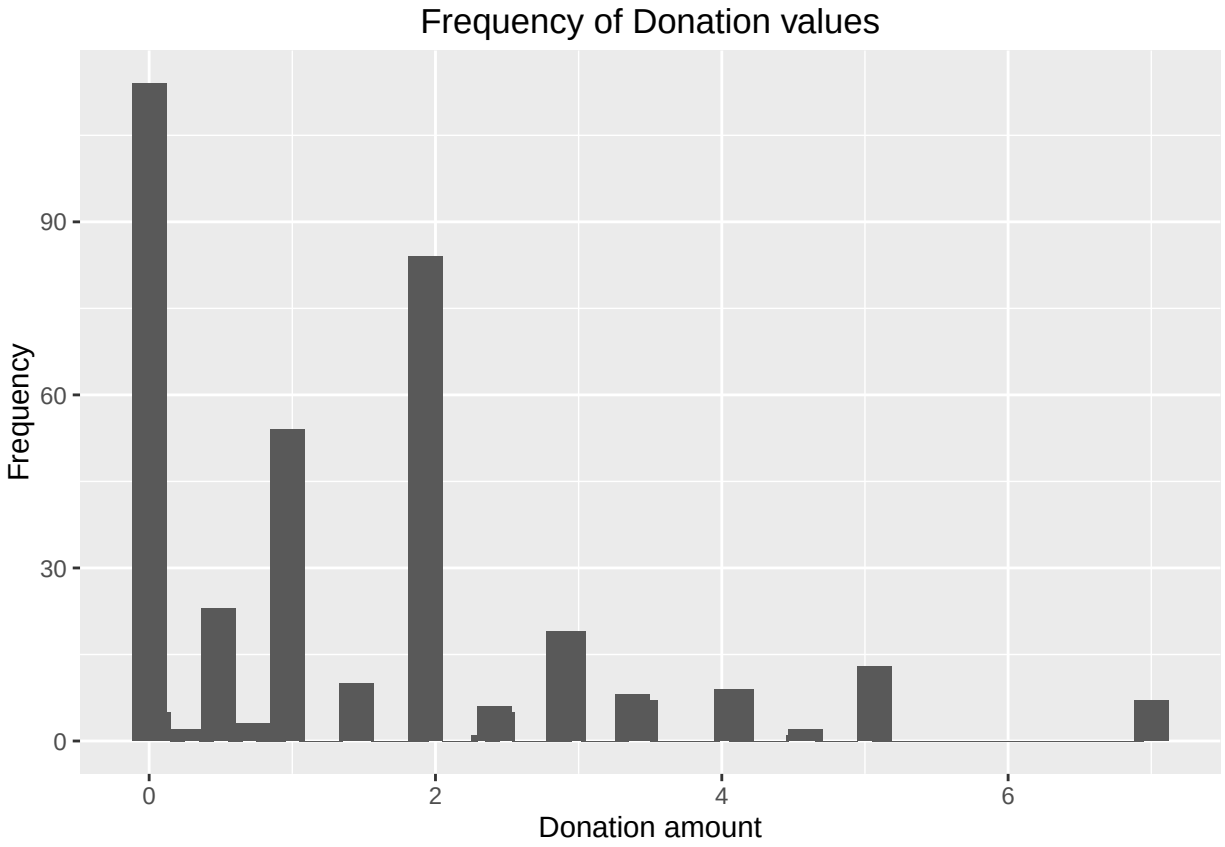
1. Variable: Donation to retire carbon licenses

Aggregated descriptive statistics

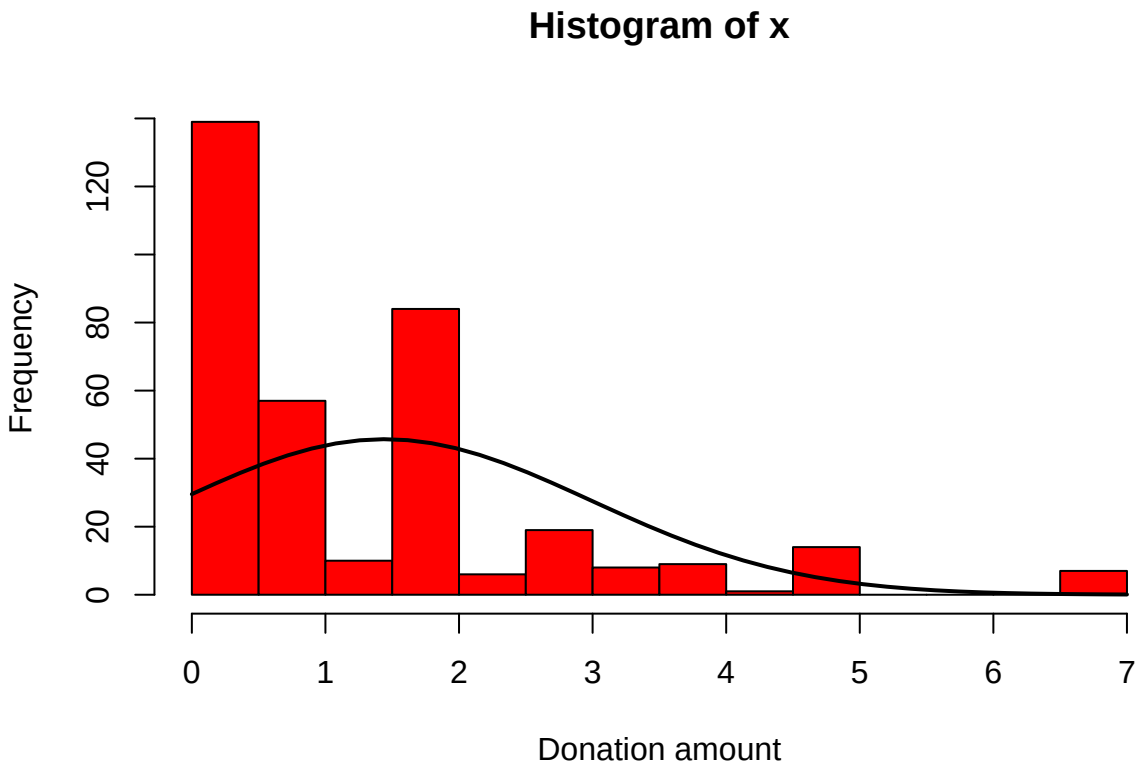
```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   0.000   1.000   1.442   2.000   7.000
```

```
## [1] 1.544451
```

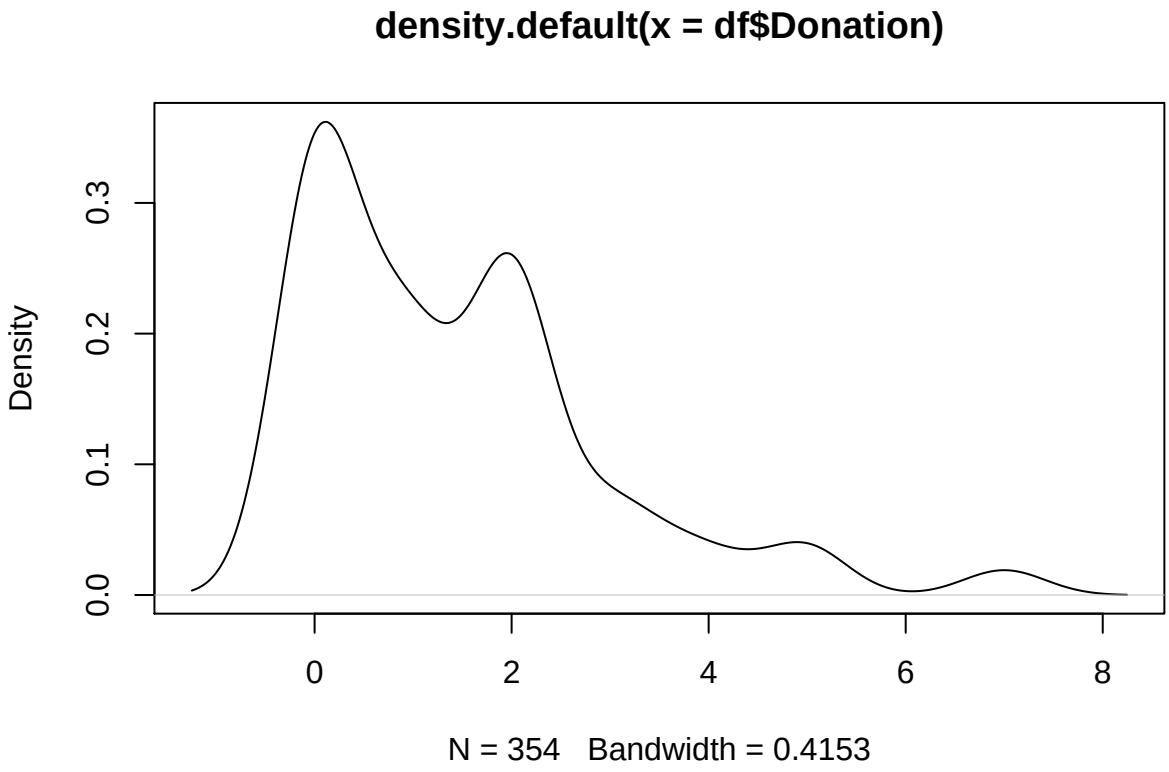
Distribution of aggregated donations



Distribution of aggregated donations with normal curve



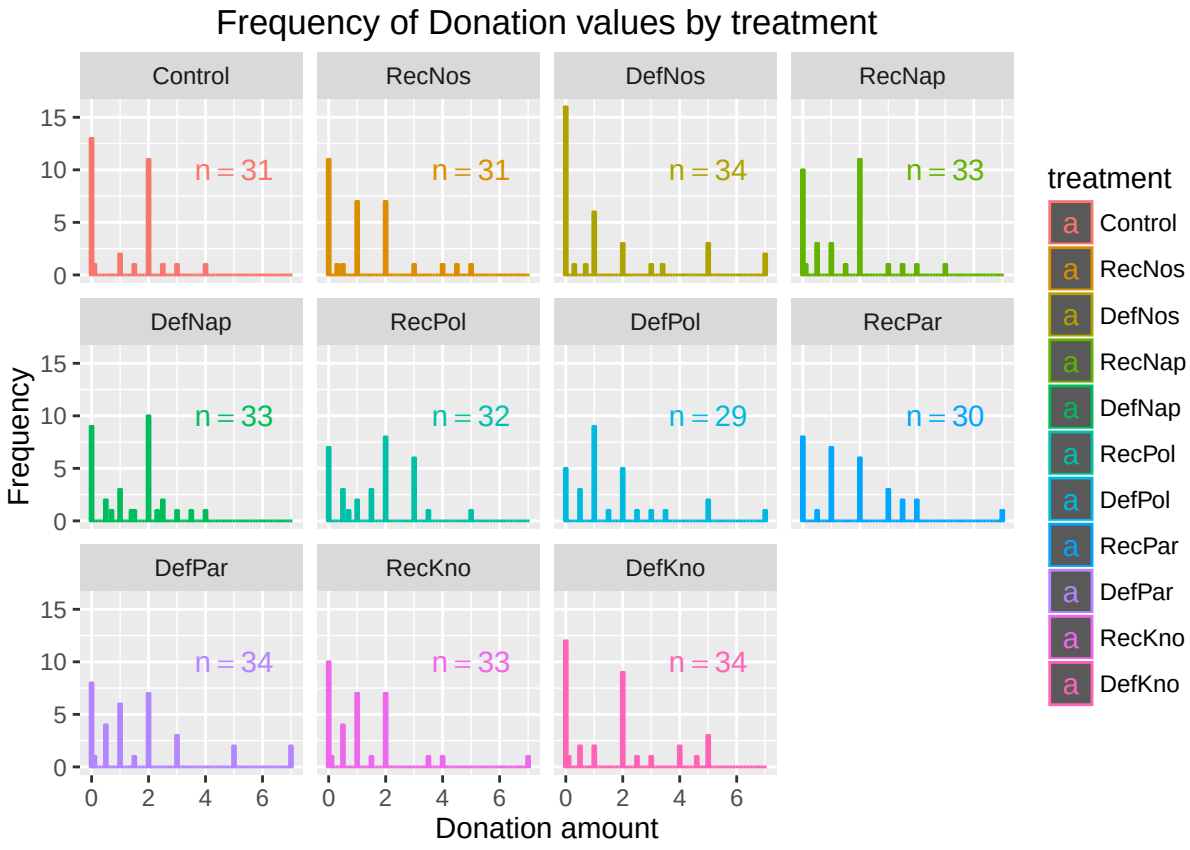
Kernel density plot of aggregated donations



Distribution of donations by treatment

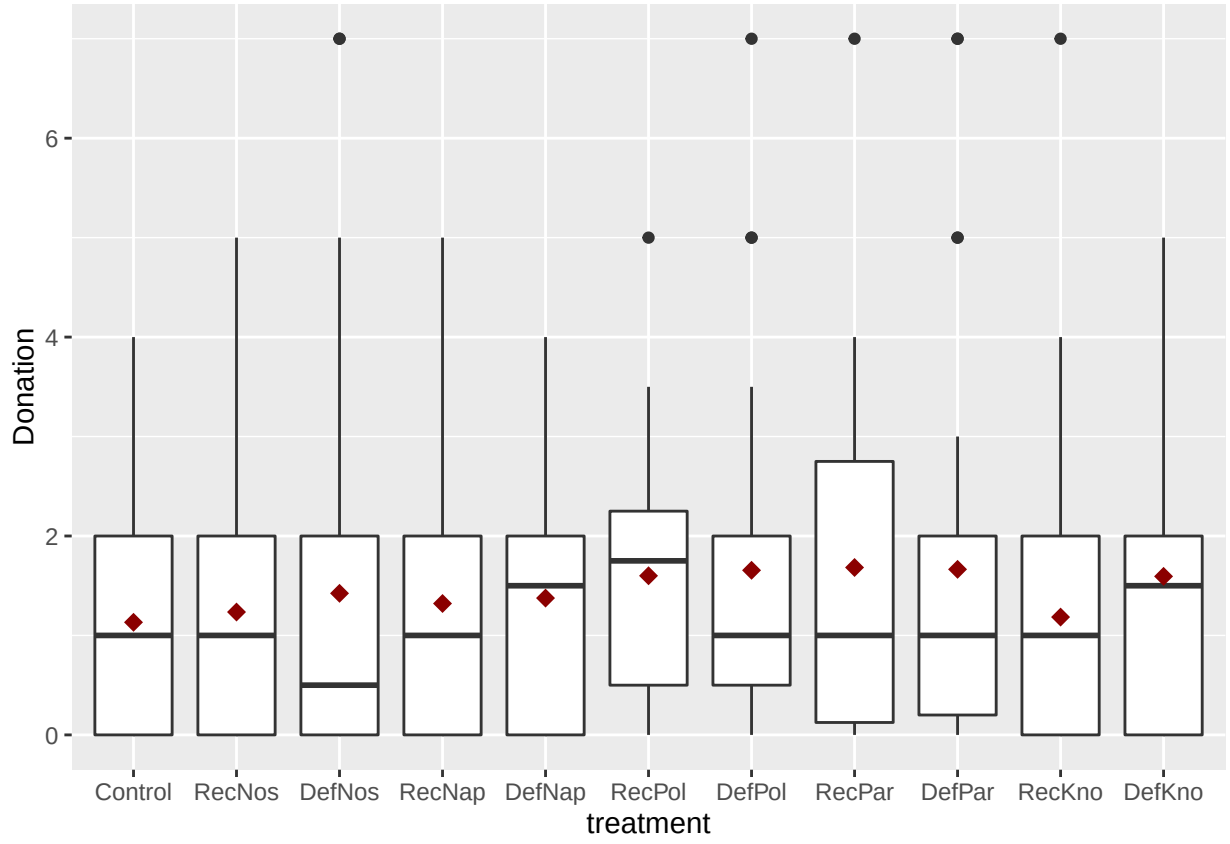
```
## group: Control
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 31 1.13 1.15      1    1.02 1.48   0   4     4 0.42    -0.94 0.21
## ------------------------------------------------------------
## group: RecNos
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 31 1.24 1.39      1    0.99 1.48   0   5     5 1.14     0.52 0.25
## ------------------------------------------------------------
## group: DefNos
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 34 1.42 2.08    0.5    1.05 0.74   0   7     7 1.46     0.93 0.36
## ------------------------------------------------------------
## group: RecNap
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 33 1.32 1.31      1    1.15 1.48   0   5     5 0.83     0.13 0.23
## ------------------------------------------------------------
## group: DefNap
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis  se
## 1    1 33 1.38 1.13    1.5    1.29 1.19   0   4     4 0.27    -0.88 0.2
## ------------------------------------------------------------
## group: RecPol
```

```
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 32  1.6 1.29   1.75    1.53 1.85   0   5     5 0.43    -0.48 0.23
## ------------------------------------------------------------
## group: DefPol
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 29 1.66 1.68      1    1.44 1.48   0   7     7 1.51     1.87 0.31
## ------------------------------------------------------------
## group: RecPar
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis  se
## 1    1 30 1.68 1.65      1    1.48 1.48   0   7     7 1.13     1.32 0.3
## ------------------------------------------------------------
## group: DefPar
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 34 1.66 1.89      1    1.34 1.48   0   7     7 1.46     1.49 0.32
## ------------------------------------------------------------
## group: RecKno
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 33 1.18 1.47      1    0.91 1.48   0   7     7 2.06     5.17 0.26
## ------------------------------------------------------------
## group: DefKno
##   vars  n mean  sd median trimmed  mad min max range skew kurtosis   se
## 1    1 34 1.59 1.7    1.5     1.4 2.22   0   5     5 0.73    -0.74 0.29
```



Donations by treatment (Boxplot)

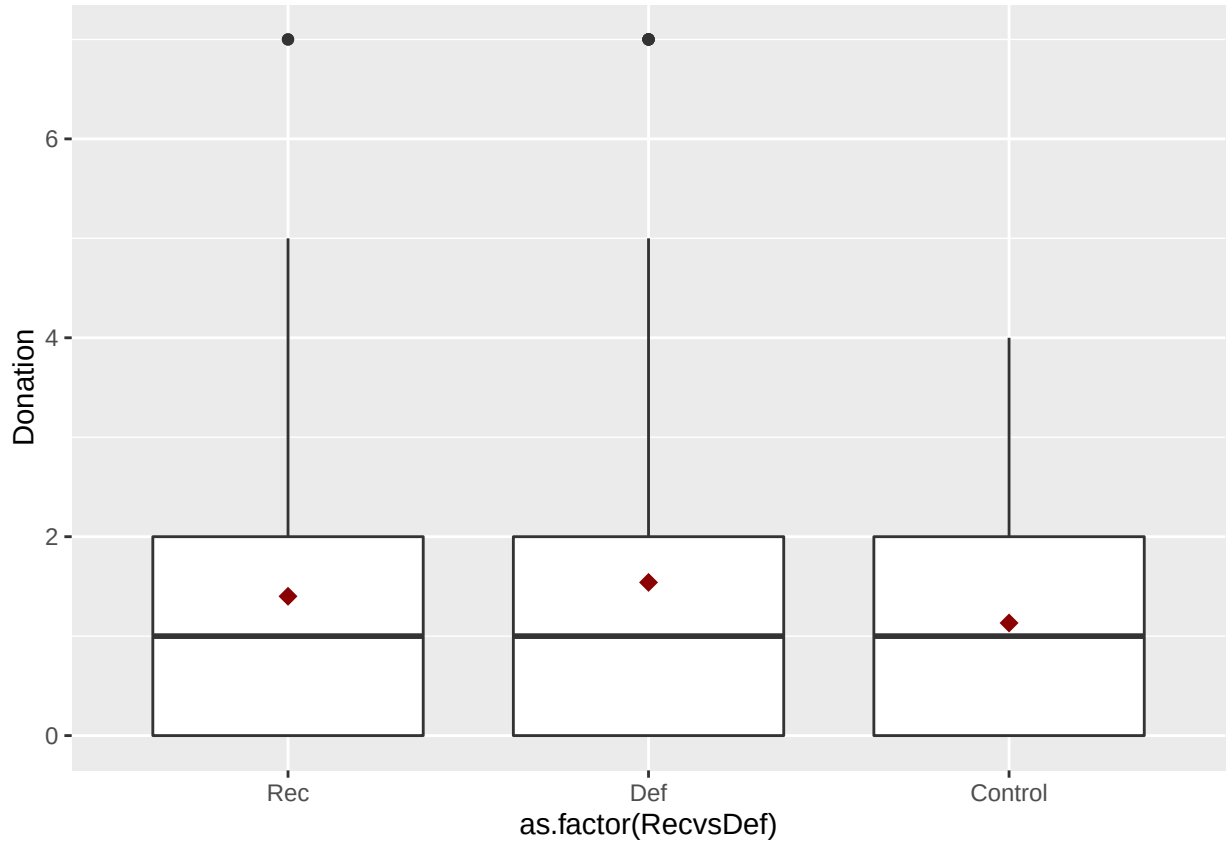
Red diamonds in boxplots represent the respective means



Donations by aggregated treatment (Boxplot), i.e. Def vs. Rec vs. Control

```
describeBy(df$Donation, df$RecvsDef)
```

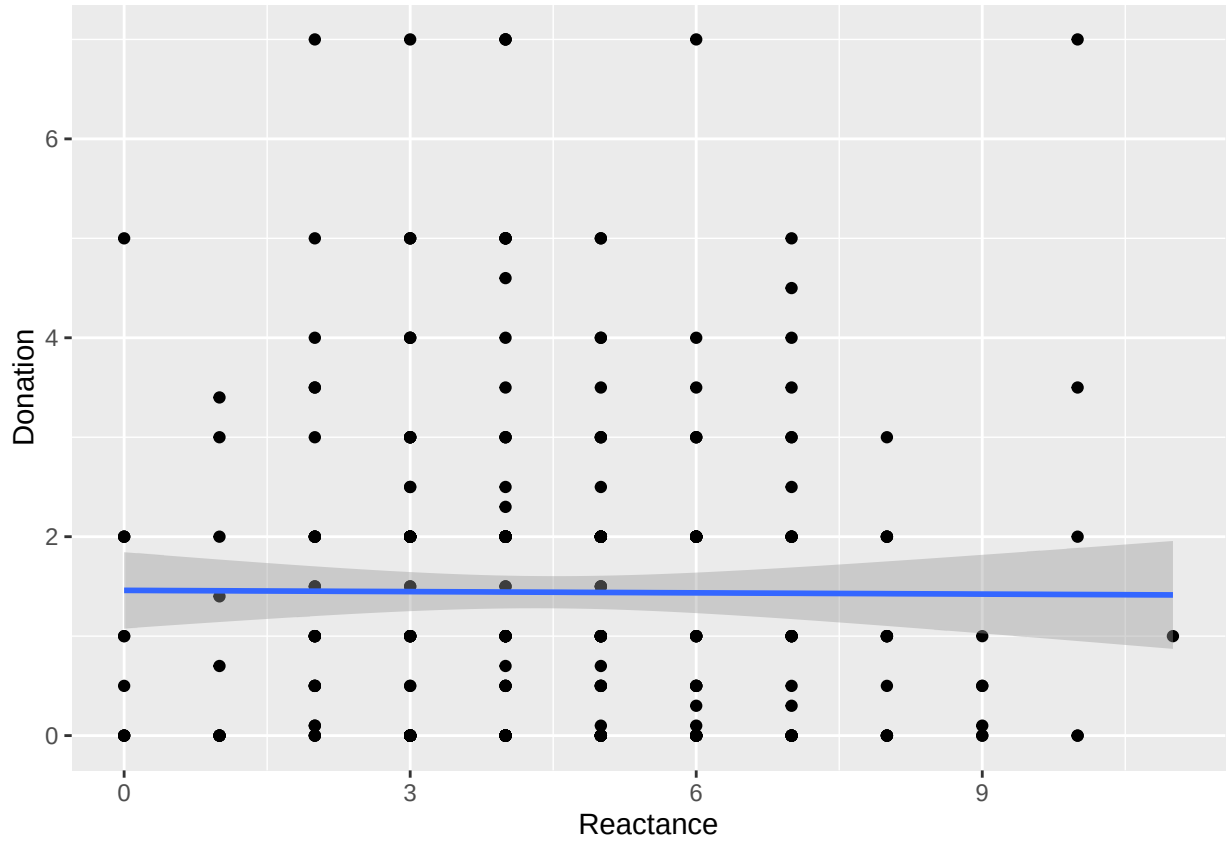
```
## group: Rec
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 159  1.4 1.42      1     1.2 1.48   0   7     7 1.24     1.89 0.11
## ------------------------------------------------------------
## group: Def
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 164 1.54 1.71      1    1.23 1.48   0   7     7 1.38     1.56 0.13
## ------------------------------------------------------------
## group: Control
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 31 1.13 1.15      1    1.02 1.48   0   4     4 0.42    -0.94 0.21
```



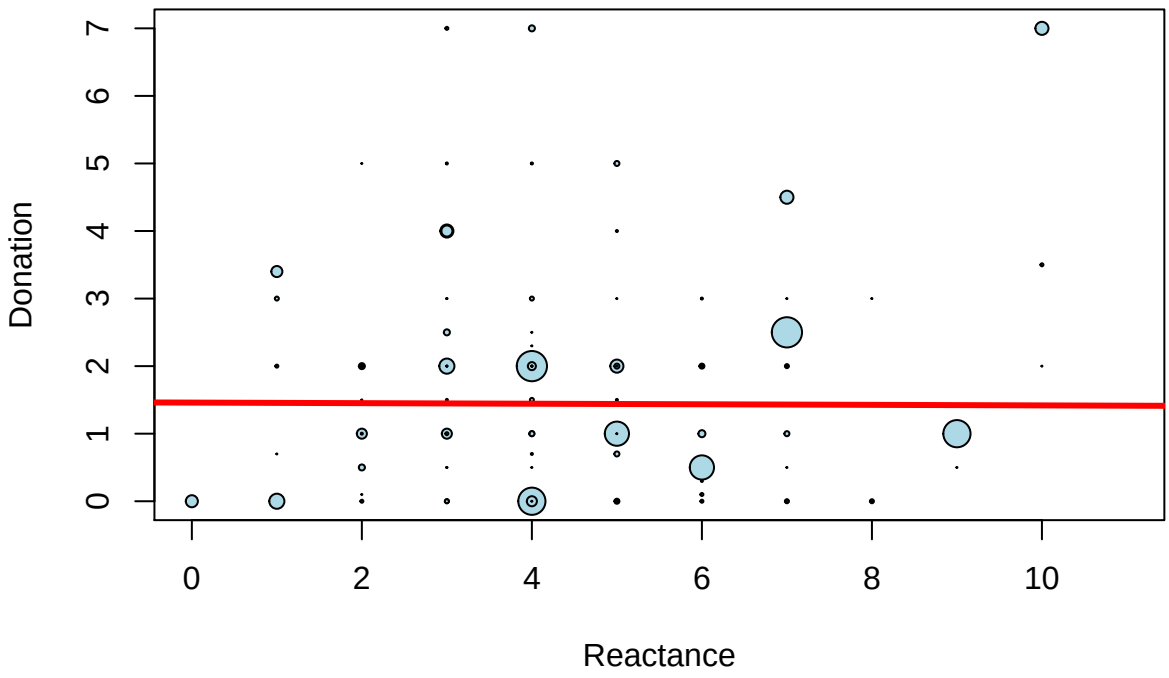
Donations by Reactance score

The reactance score was constructed by changing each of the 11 rectance-items to a dummy variable equal to 1 if the subject chose 3 or 4 on the respective item, and 0 otherwise. Afterwards, all 11 dummies were added to construct an ordinal Reactance score.

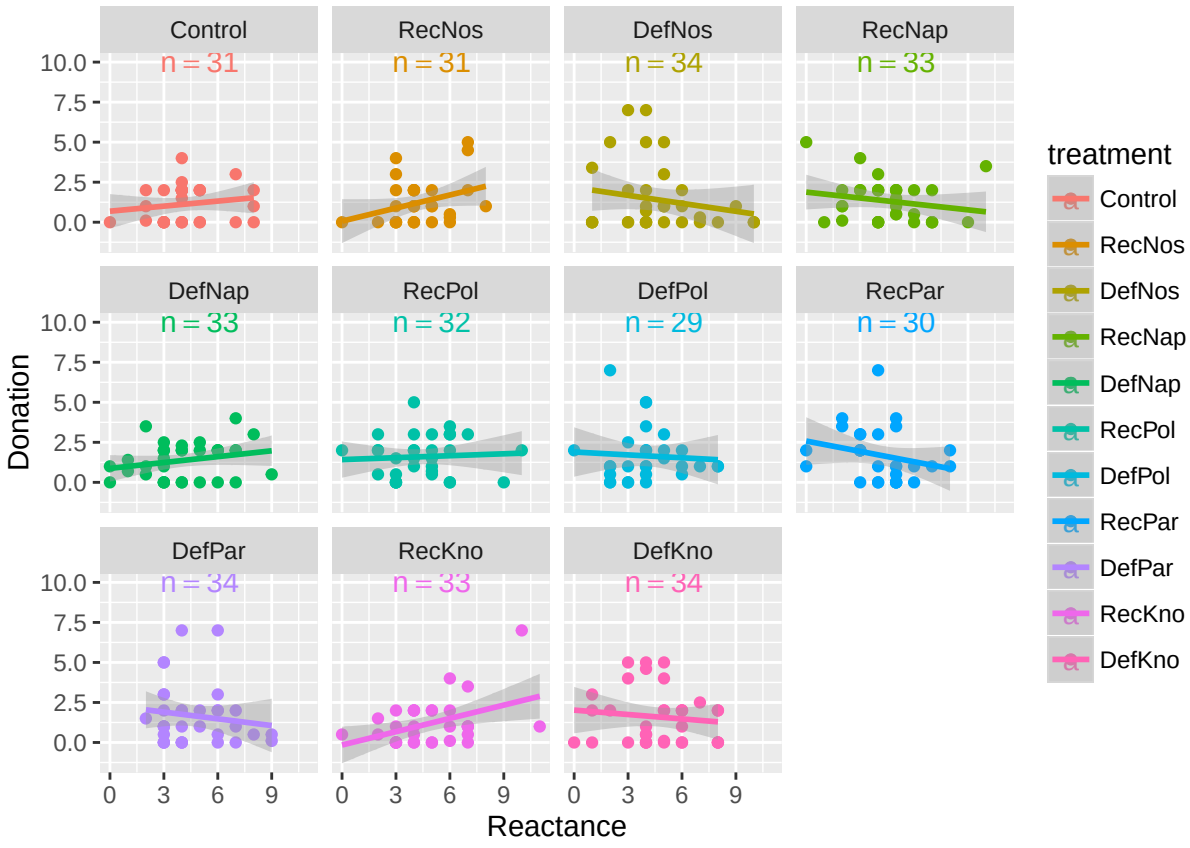
Shows a point plot (not jittered) with Donation amount and the respective Reactance score of each participant. Includes a linear regression line, including the 95% confidence region, of the Reactance score as a predictor for the Donation amount.



To see how often combinations of Reactance and Donation scores appeared



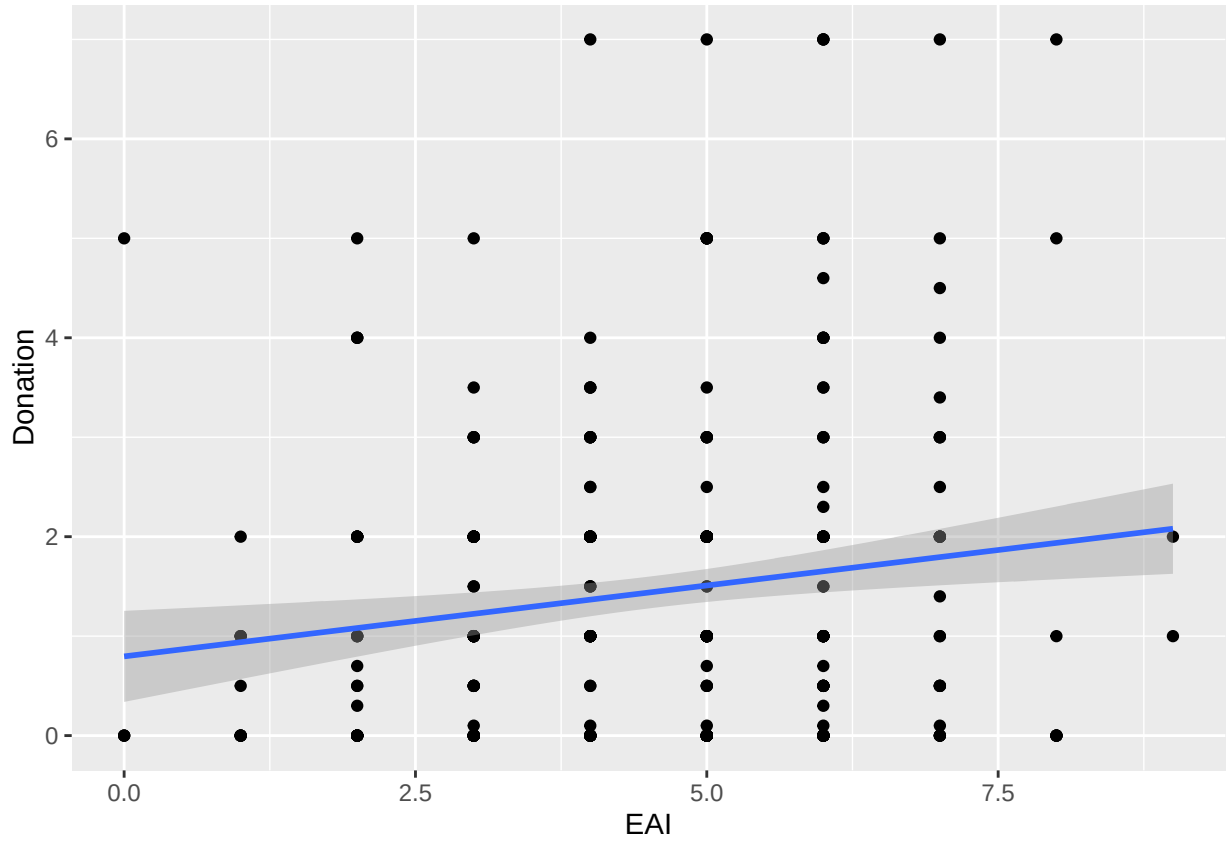
Donations by Reactance score per treatment Shows a point plot (not jittered) with Donation amount and the respective Reactance score of each participant, for each treatment. Includes a linear regression line, including the 95% confidence region, of the Reactance score as a predictor for the Donation amount, for each treatment.



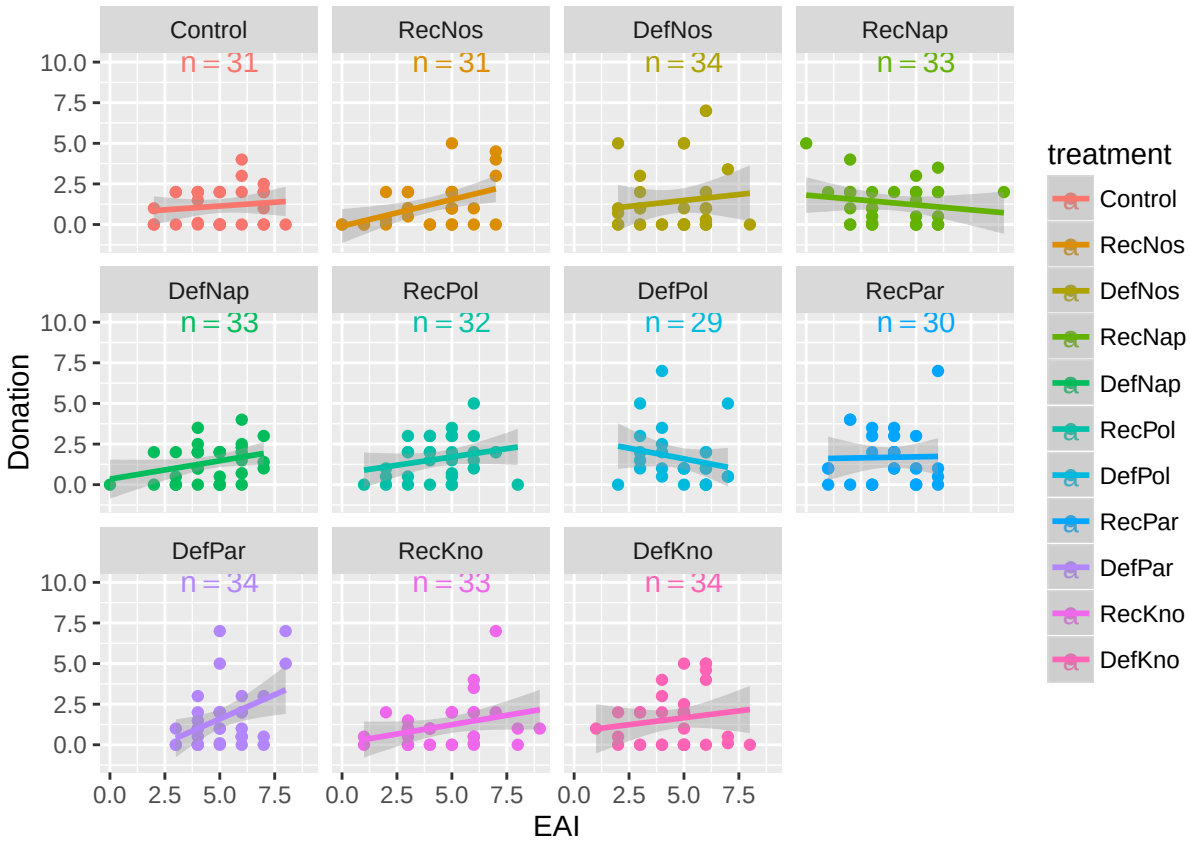
Donations by EAI score

The EAI score was constructed by changing each of the 12 EAI-items to a dummy variable equal to 1 if the subject chose 3 or 4 on the respective item, and 0 otherwise. Afterwards, all 12 dummies were added to construct an ordinal EAI score.

Shows a point plot (not jittered) with Donation amount and the respective EAI score of each participant. Includes a linear regression line, including the 95% confidence region, of the EAI score as a predictor for the Donation amount.



Donations by EAI score per treatment Shows a point plot (not jittered) with Donation amount and the respective EAI score of each participant, for each treatment. Includes a linear regression line, including the 95% confidence region, of the EAI score as a predictor for the Donation amount, for each treatment.



2. Variable: Donation dummy (1 if donated, 0 otherwise)

Aggregated descriptive statistics

```
summary(df$Donated)
```

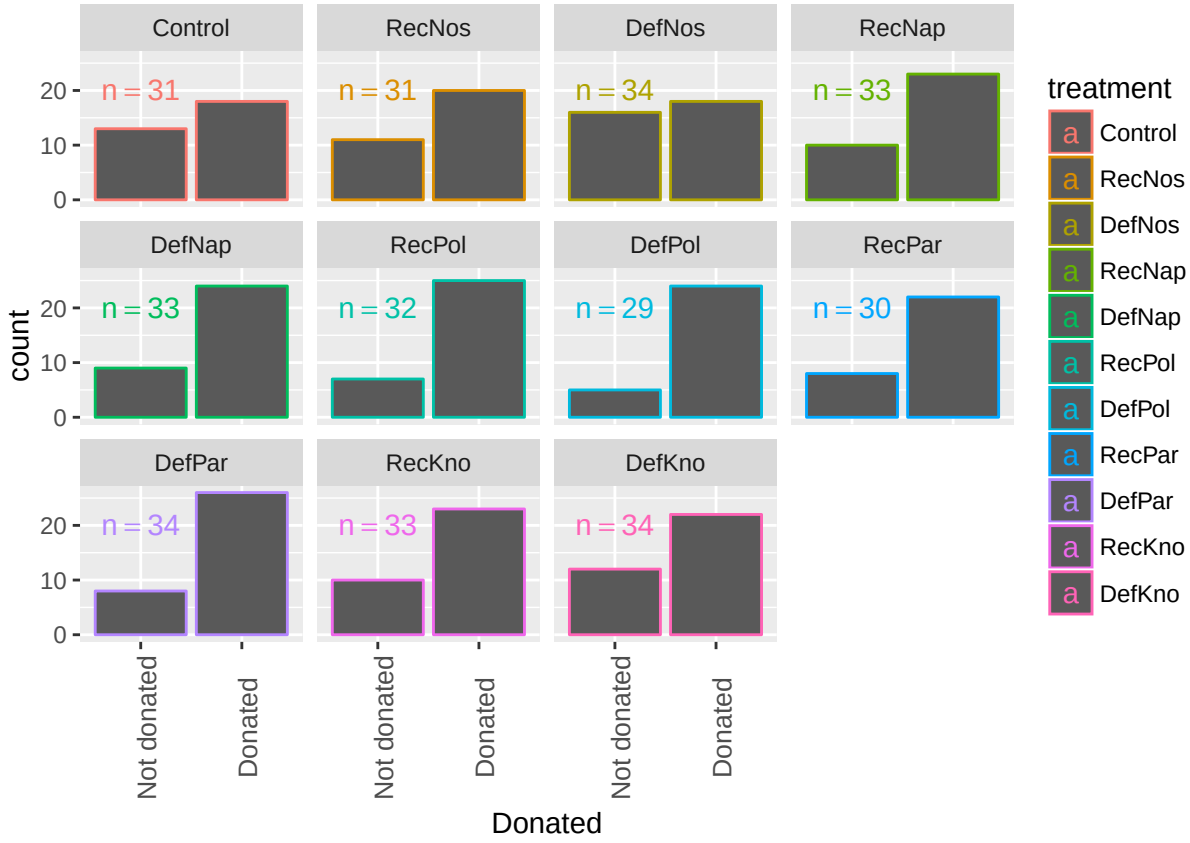
```
## Not donated     Donated
##         109         245
```

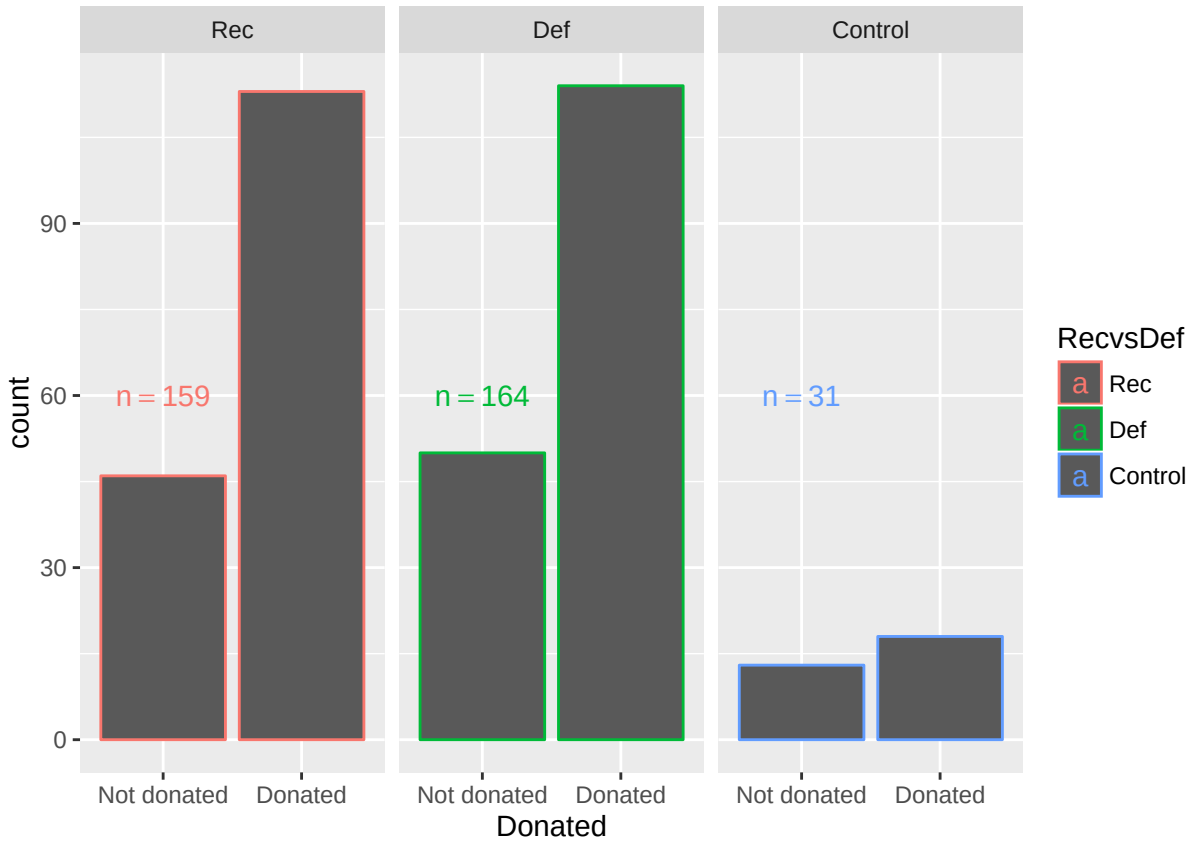
Distribution of donation dummy by treatment

```
table(df$Donated, df$treatment)
```

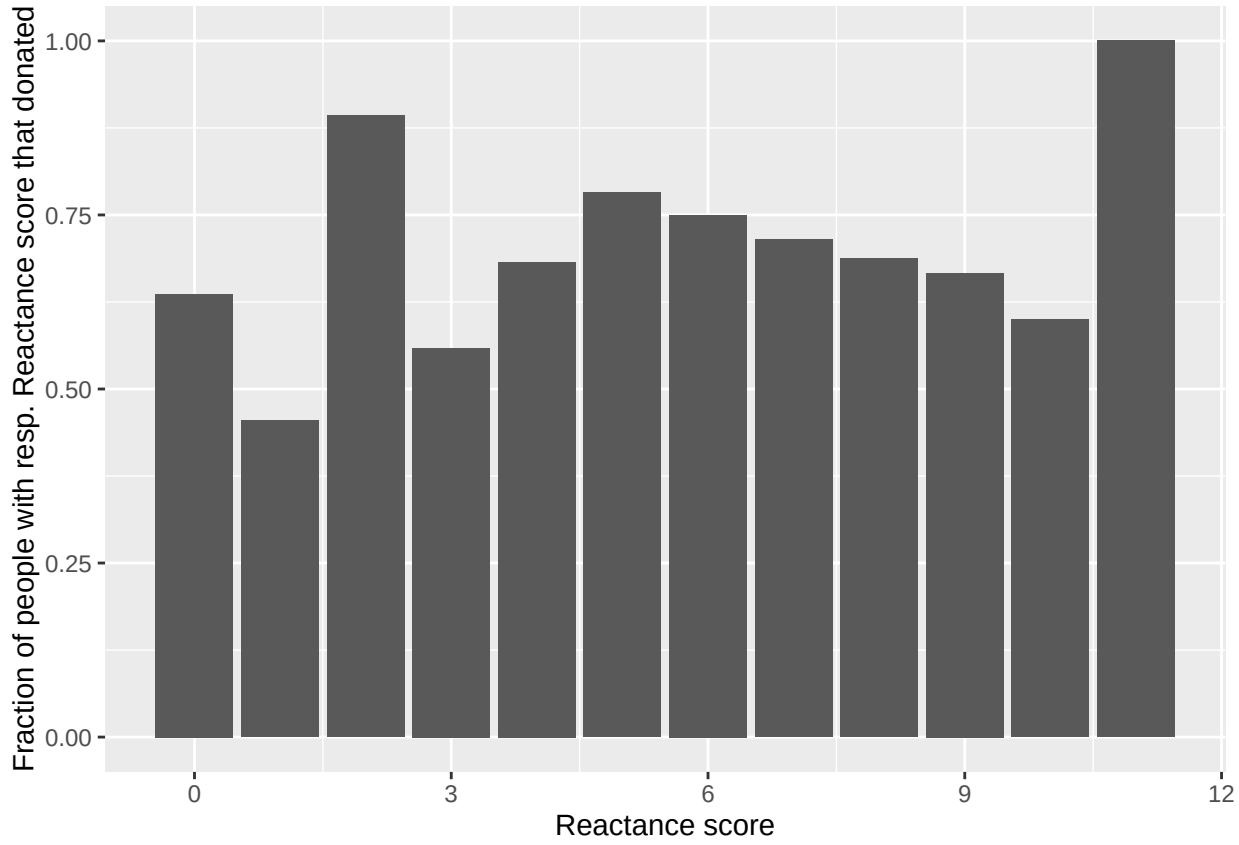
```
##
##                Control RecNos DefNos RecNap DefNap RecPol DefPol RecPar
##   Not donated       13      11      16      10       9       7       5       8
##   Donated           18      20      18      23      24      25      24      22
##
##                DefPar RecKno DefKno
##   Not donated       8      10      12
##   Donated          26      23      22
```

Decision to donate by treatment graph




Rec
Def
Control
90
60
30
0
count
n = 159
n = 164
n = 31
Not donated
Donated
Not donated
Donated
Not donated
Donated
Donated
RecvsDef
a
Rec
a
Def
a
Control

Decision to donate by Reactance score




```
chisq.test(table(df$Donated, df$Reactance), simulate.p.value = TRUE)
```

```
##
##  Pearson's Chi-squared test with simulated p-value (based on 2000
##  replicates)
##
## data:  table(df$Donated, df$Reactance)
## X-squared = 17.51, df = NA, p-value = 0.07646
```

```
summary(glm(Donated ~ Reactance, df, family = "binomial"))
```

```
##
## Call:
## glm(formula = Donated ~ Reactance, family = "binomial", data = df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6789  -1.4997   0.8253   0.8656   0.9500
##
## Coefficients:
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept)  0.56154    0.27135   2.069   0.0385 *
```

```
## Reactance    0.05678    0.05676   1.000   0.3171
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 437.13  on 353  degrees of freedom
## Residual deviance: 436.12  on 352  degrees of freedom
## AIC: 440.12
##
## Number of Fisher Scoring iterations: 4
```

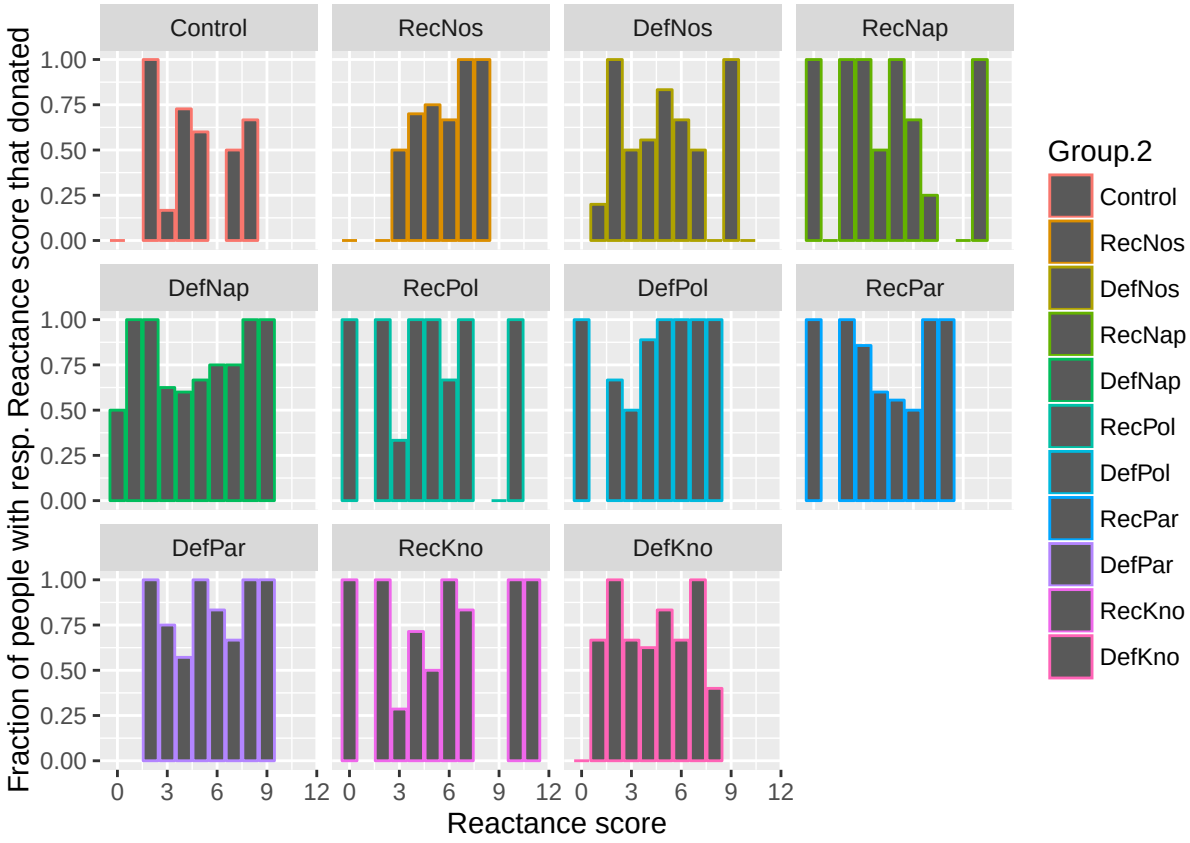
The decision of whether or not to donate depends on Reactance (based on the Chi? Test. However the test is only slightly significant ($p < .1$). The logistic regression model is not significant

```
##
## Call:
## glm(formula = Donated ~ RecvsDefD * Sourcetype * Reactance, family = "binomial",
##     data = df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0517  -1.2256   0.7042   0.8652   1.3754
##
## Coefficients:
##                                                    Estimate Std. Error
## (Intercept)                                         -2.2661     1.4148
## RecvsDefDDef                                         2.3394     1.5960
## SourcetypeNameAndPicture                             4.2609     1.7356
## SourcetypeKnowledgeable                              1.8156     1.7108
## SourcetypePolitical                                  3.9211     1.7620
## SourcetypePartisan                                   4.0801     1.8000
## Reactance                                            0.7068     0.3495
## RecvsDefDDef:SourcetypeNameAndPicture               -3.6135     2.0502
## RecvsDefDDef:SourcetypeKnowledgeable                -1.1643     2.0587
## RecvsDefDDef:SourcetypePolitical                    -4.2437     2.2493
## RecvsDefDDef:SourcetypePartisan                     -3.7545     2.2404
## RecvsDefDDef:Reactance                              -0.6970     0.3782
## SourcetypeNameAndPicture:Reactance                  -0.9517     0.3972
## SourcetypeKnowledgeable:Reactance                   -0.4263     0.4042
## SourcetypePolitical:Reactance                       -0.7910     0.4063
## SourcetypePartisan:Reactance                        -0.8928     0.4192
## RecvsDefDDef:SourcetypeNameAndPicture:Reactance      1.0061     0.4580
## RecvsDefDDef:SourcetypeKnowledgeable:Reactance       0.3912     0.4614
## RecvsDefDDef:SourcetypePolitical:Reactance           1.3030     0.5536
## RecvsDefDDef:SourcetypePartisan:Reactance            1.0556     0.5028
##                                                    z value Pr(>|z|)
## (Intercept)                                         -1.602   0.1092
## RecvsDefDDef                                         1.466   0.1427
## SourcetypeNameAndPicture                             2.455   0.0141 *
## SourcetypeKnowledgeable                              1.061   0.2886
## SourcetypePolitical                                  2.225   0.0261 *
## SourcetypePartisan                                   2.267   0.0234 *
## Reactance                                            2.022   0.0431 *
```

```
## RecvsDefDDef:SourcetypeNameAndPicture            -1.763   0.0780 .
## RecvsDefDDef:SourcetypeKnowledgeable             -0.566   0.5717
## RecvsDefDDef:SourcetypePolitical                 -1.887   0.0592 .
## RecvsDefDDef:SourcetypePartisan                  -1.676   0.0938 .
## RecvsDefDDef:Reactance                           -1.843   0.0653 .
## SourcetypeNameAndPicture:Reactance               -2.396   0.0166 *
## SourcetypeKnowledgeable:Reactance                -1.055   0.2916
## SourcetypePolitical:Reactance                    -1.947   0.0515 .
## SourcetypePartisan:Reactance                     -2.129   0.0332 *
## RecvsDefDDef:SourcetypeNameAndPicture:Reactance   2.197   0.0280 *
## RecvsDefDDef:SourcetypeKnowledgeable:Reactance    0.848   0.3965
## RecvsDefDDef:SourcetypePolitical:Reactance        2.354   0.0186 *
## RecvsDefDDef:SourcetypePartisan:Reactance         2.099   0.0358 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 393.08  on 322  degrees of freedom
## Residual deviance: 368.68  on 303  degrees of freedom
##   (31 observations deleted due to missingness)
## AIC: 408.68
##
## Number of Fisher Scoring iterations: 5


##
## Call:
## glm(formula = Donated ~ RecvsDefD * NosvsSomeD * Reactance, family = "binomial",
##     data = df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0517  -1.2256   0.7593   0.8170   1.2399
##
## Coefficients:
##                                              Estimate Std. Error z value
## (Intercept)                                   -2.2661     1.4146  -1.602
## RecvsDefDDef                                   2.3394     1.5959   1.466
## NosvsSomeDSome Source                          3.4557     1.4927   2.315
## Reactance                                      0.7068     0.3495   2.023
## RecvsDefDDef:NosvsSomeDSome Source            -2.8628     1.7281  -1.657
## RecvsDefDDef:Reactance                        -0.6970     0.3782  -1.843
## NosvsSomeDSome Source:Reactance               -0.7534     0.3619  -2.082
## RecvsDefDDef:NosvsSomeDSome Source:Reactance   0.8301     0.4020   2.065
##                                              Pr(>|z|)
## (Intercept)                                    0.1092
## RecvsDefDDef                                   0.1427
## NosvsSomeDSome Source                          0.0206 *
## Reactance                                      0.0431 *
## RecvsDefDDef:NosvsSomeDSome Source             0.0976 .
## RecvsDefDDef:Reactance                         0.0653 .
## NosvsSomeDSome Source:Reactance                0.0374 *
## RecvsDefDDef:NosvsSomeDSome Source:Reactance   0.0389 *
## ---
```

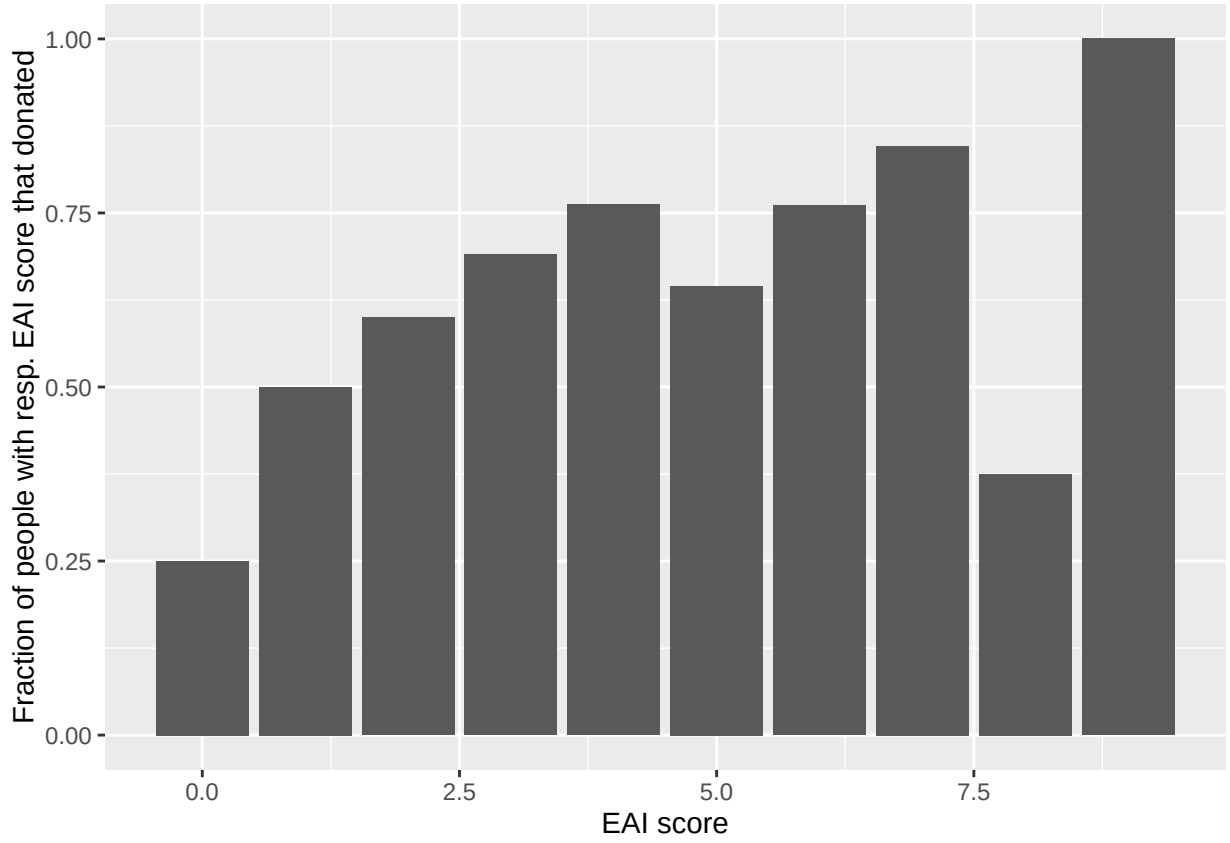
```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 393.08  on 322  degrees of freedom
## Residual deviance: 379.73  on 315  degrees of freedom
##   (31 observations deleted due to missingness)
## AIC: 395.73
##
## Number of Fisher Scoring iterations: 4
```

Decision to donate by Reactance score and treatment



At least visually there does not seem to be a relationship of Reactance score and Donation broken down by treatment.

Decision to donate by EAI score



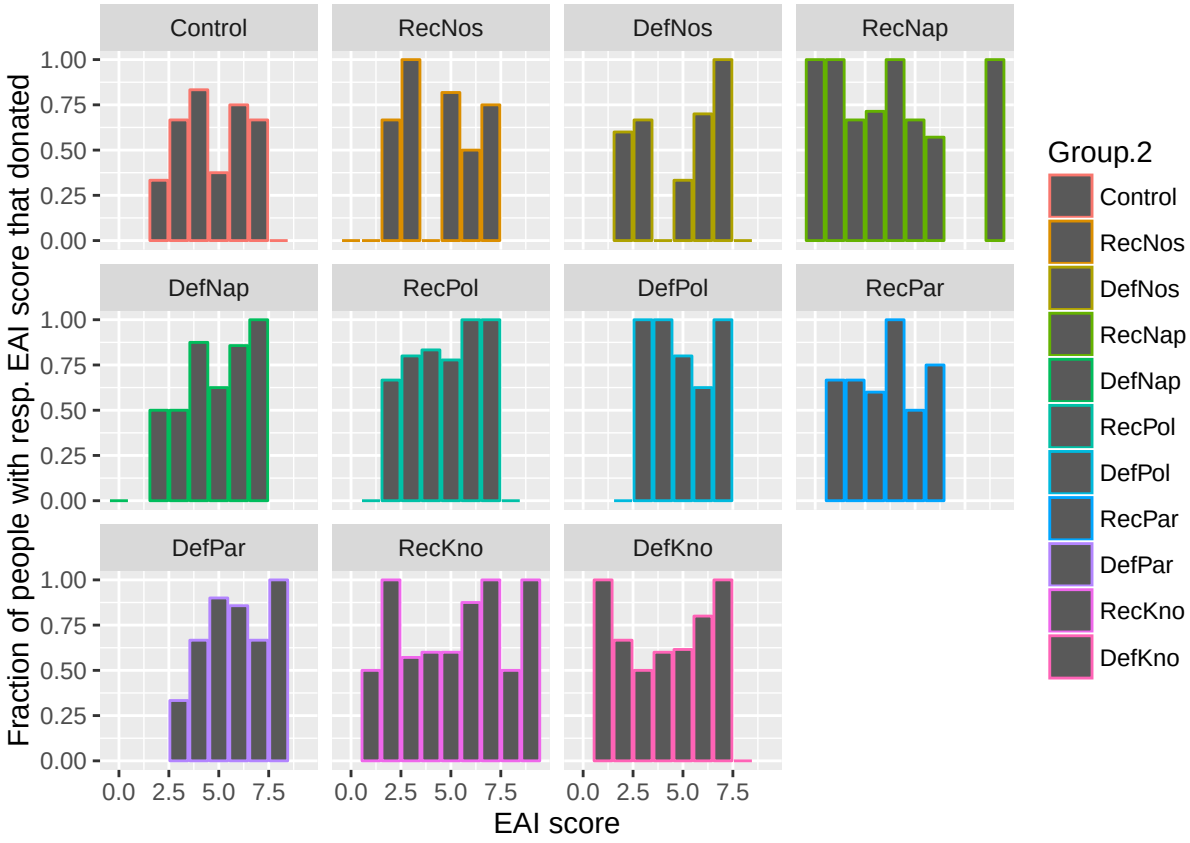

```
chisq.test(table(df$Donated, df$EAI))
```

```
## Warning in chisq.test(table(df$Donated, df$EAI)): Chi-squared approximation
## may be incorrect
```

```
##
##  Pearson's Chi-squared test
##
## data:  table(df$Donated, df$EAI)
## X-squared = 17.998, df = 9, p-value = 0.0352
```

The Chi?-test statistic is not significant, indicating that the decision whether or not to donate anything does not depend on the EAI.

Decision to donate by EAI score and treatment



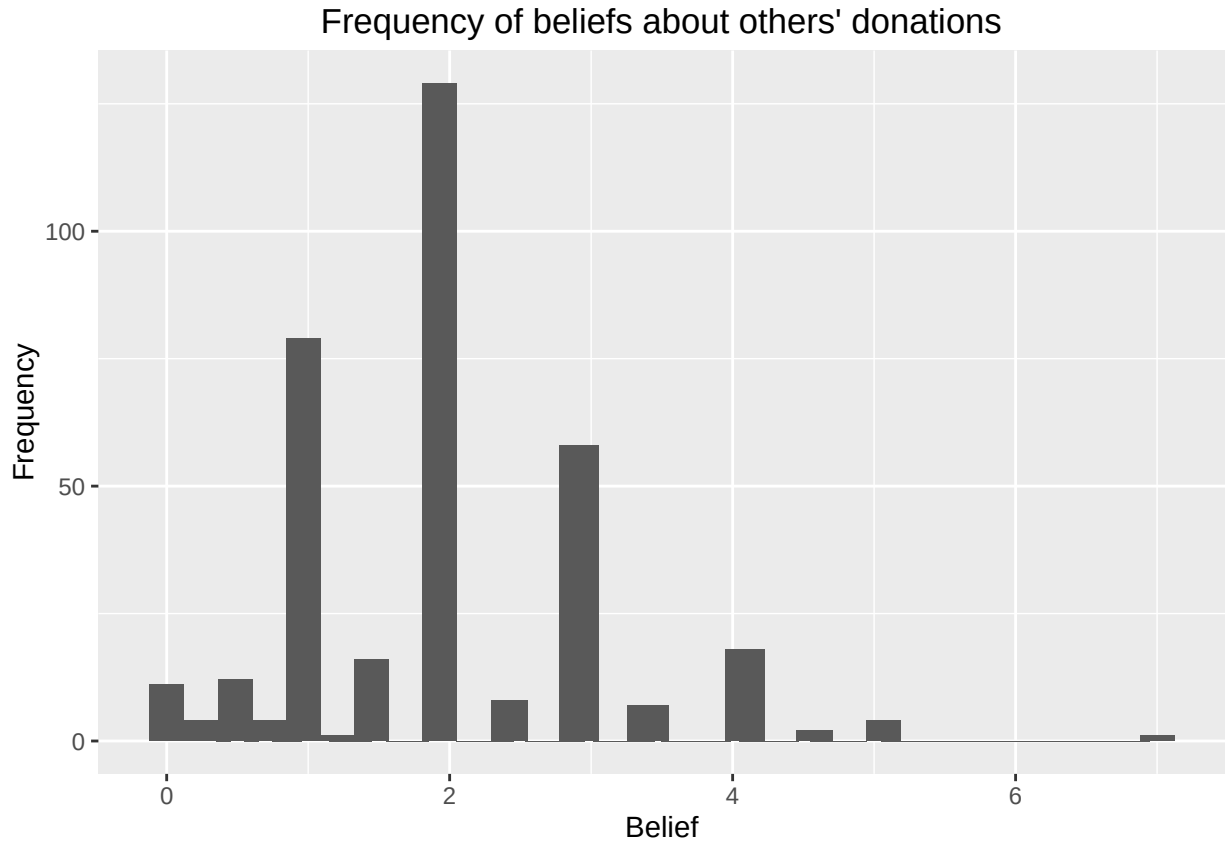
3. Variable: Beliefs about other participants donations

Aggregated descriptive statistics

```
summary(df$belief)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   1.000   2.000   1.973   3.000   7.000
```

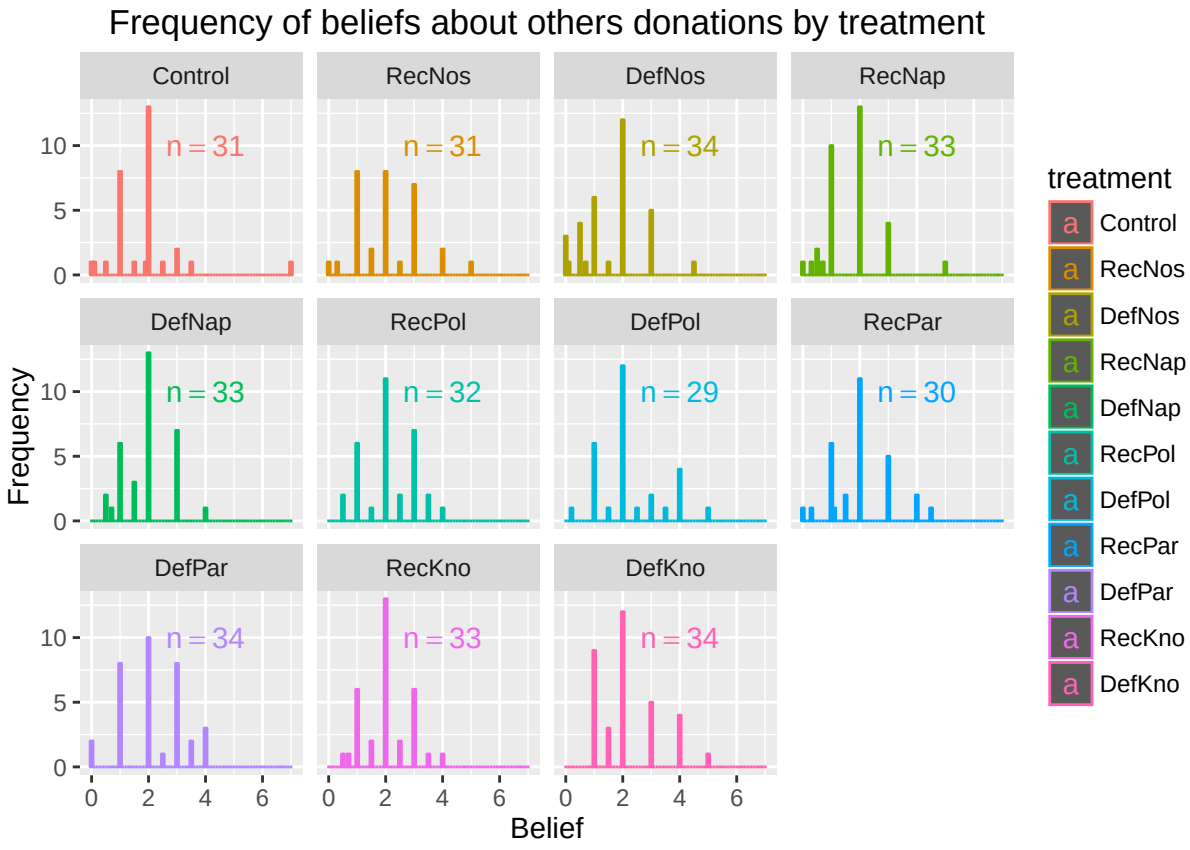
Distribution of aggregated beliefs about donations



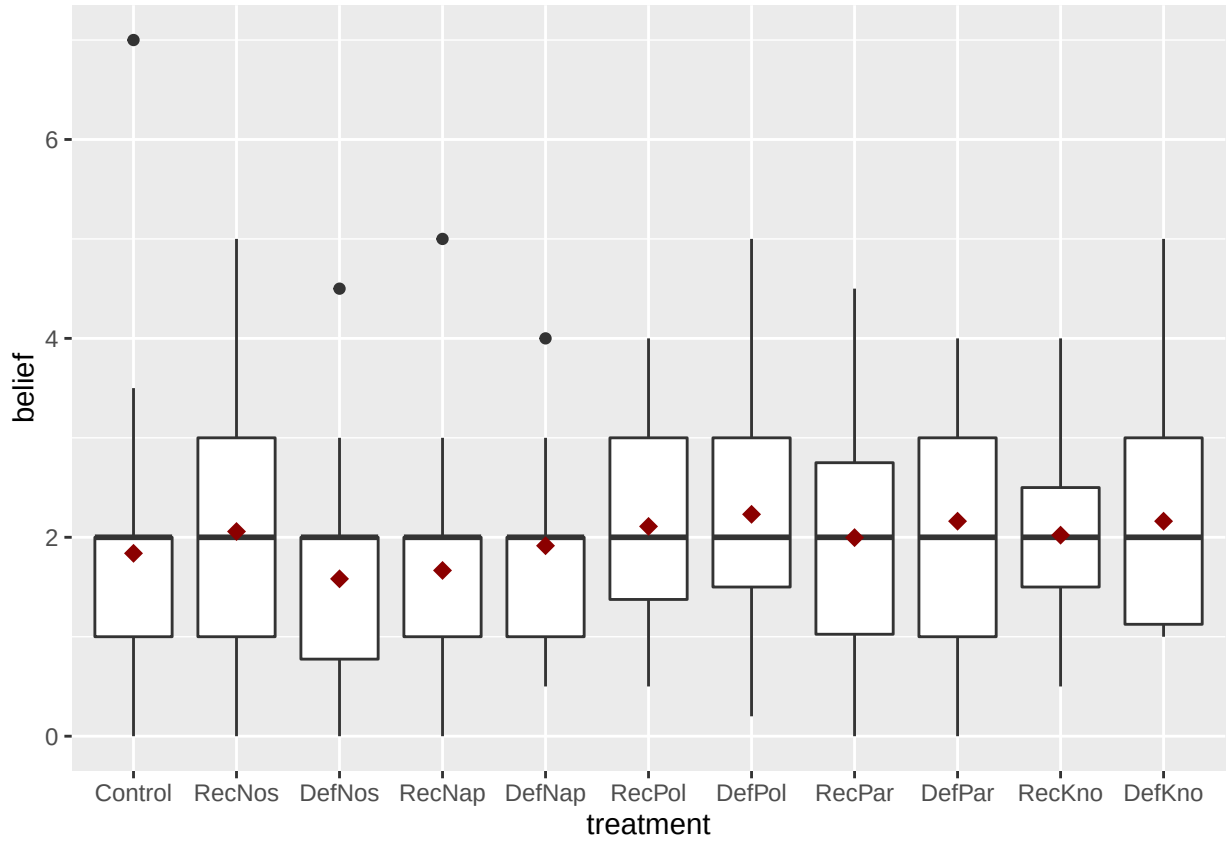
Distribution of beliefs by treatment

```
## group: Control
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 31 1.84 1.25      2    1.72 0.74   0   7     7  2.1     6.92 0.22
## ------------------------------------------------------------
## group: RecNos
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 31 2.06 1.15      2    1.98 1.48   0   5     5 0.47    -0.28 0.21
## ------------------------------------------------------------
## group: DefNos
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 34 1.58 1.07      2    1.55 1.48   0 4.5   4.5 0.43    -0.24 0.18
## ------------------------------------------------------------
## group: RecNap
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 33 1.67 1.01      2     1.6 1.48   0   5     5 0.97     1.55 0.18
## ------------------------------------------------------------
## group: DefNap
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 33 1.92 0.86      2    1.91 1.48 0.5   4   3.5 0.27    -0.62 0.15
## ------------------------------------------------------------
## group: RecPol
```

```
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 32 2.11 0.92      2     2.1 1.48 0.5   4   3.5 0.02    -0.95 0.16
## ------------------------------------------------------------
## group: DefPol
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 29 2.23 1.16      2    2.18 1.48 0.2   5   4.8 0.59    -0.45 0.21
## ------------------------------------------------------------
## group: RecPar
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis  se
## 1    1 30    2 1.07      2    1.92 1.48   0 4.5   4.5 0.46    -0.31 0.2
## ------------------------------------------------------------
## group: DefPar
##   vars  n mean  sd median trimmed  mad min max range skew kurtosis   se
## 1    1 34 2.16 1.1      2    2.16 1.48   0   4     4 -0.1    -0.93 0.19
## ------------------------------------------------------------
## group: RecKno
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 33 2.02 0.85      2       2 0.74 0.5   4   3.5 0.21    -0.64 0.15
## ------------------------------------------------------------
## group: DefKno
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 34 2.16 1.09      2    2.05 1.48   1   5     4 0.82    -0.24 0.19
```



Beliefs by treatment (Boxplot)



Inferential Statistics

Following are relevant inferential statistics for each of three relevant dependent variables. These relevant dependent variables are 1. Donation, which is the amount the subject donated in order to retire emission rights 2. Donated, which is equal to 1 if the subject donated a positive amount, and 0 otherwise 3. Belief, which is the amount the subject thinks other participants in this experiment donated on average (not incentivized)

1. Variable: Donation to retire carbon licenses

Kruskal-Wallis-Test

The following KW-test tests the null-hypothesis that the median donations in each treatment are the same. The test assumes variance homogeneity and equal distributions of donations in each treatment. It basically tests whether the distributions from the different treatments are shifted.

```
kruskal.test(df$Donation ~ df$treatment)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  df$Donation by df$treatment
```

```
## Kruskal-Wallis chi-squared = 7.434, df = 10, p-value = 0.6839
```

We do not reject the null (p = .05).

ANOVA (one-way)

```
summary(aov(df$Donation ~ df$treatment))
```

```
##               Df Sum Sq Mean Sq F value Pr(>F)
## df$treatment  10   13.5   1.345   0.557  0.849
## Residuals    343  828.6   2.416
```

We do not reject the null (p = .05).

2. Variable: Donation dummy (1 if donated, 0 otherwise)

Chi? Test

The following Chi?-test tests the null-hypothesis that whether or not a participant decides to donate anything to retire emission rights (extensive margin) is independent of the treatments.

```
table(df$Donated, df$treatment)
```

```
##
##               Control RecNos DefNos RecNap DefNap RecPol DefPol RecPar
##   Not donated      13     11     16     10      9      7      5      8
##   Donated          18     20     18     23     24     25     24     22
##
##               DefPar RecKno DefKno
##   Not donated      8     10     12
##   Donated         26     23     22
```

```
chisq.test(table(df$Donated, df$treatment))
```

```
##
##  Pearson's Chi-squared test
##
## data:  table(df$Donated, df$treatment)
## X-squared = 11.645, df = 10, p-value = 0.3095
```

We fail to reject the null (p = .05)

3. Variable: Beliefs about other participants donations

Kruskal-Wallis Test

The following KW-test tests the null-hypothesis that the median beliefs about other participants average donations in each treatment are the same. The test assumes variance homogeneity and equal distributions of donations in each treatment. It basically tests whether the distributions from the different treatments are shifted.

```r
kruskal.test(df$belief ~ df$treatment)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  df$belief by df$treatment
## Kruskal-Wallis chi-squared = 14.128, df = 10, p-value = 0.1672
```

We do not reject the null. The beliefs about other participants donation amounts do not differ significantly between the treatments.

Test of hypotheses from the working paper

H0a

Mean and median payments to retire carbon licenses in the control condition are close to zero.

H0: Average Donations = 0 HA: Average Donations >< 0

```r
t.test(df$Donation, mu = 0)
```

```
##
##  One Sample t-test
##
## data:  df$Donation
## t = 17.564, df = 353, p-value < 2.2e-16
## alternative hypothesis: true mean is not equal to 0
## 95 percent confidence interval:
##  1.280368 1.603248
## sample estimates:
## mean of x
##  1.441808
```

```r
wilcox.test(df$Donation, mu = 0)
```

```
##
##  Wilcoxon signed rank test with continuity correction
##
## data:  df$Donation
## V = 30135, p-value < 2.2e-16
## alternative hypothesis: true location is not equal to 0
```

We reject the null that Donations are equal to 0

H0b

The share of subjects whose payments correspond to the recommended, respectively defaulted payment-value (convergence) is higher than in the control condition. Additionally, we expect that the share of subjects converging to the default is higher than the share converging to the recommendation.

Aggregated donations in recommendation treatments > donations in control group

```
describeBy(df$Donation, df$RecvsC)
```

```
## group: Control
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 31 1.13 1.15      1    1.02 1.48   0   4     4 0.42    -0.94 0.21
## ------------------------------------------------------------
## group: Rec
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 159  1.4 1.42      1     1.2 1.48   0   7     7 1.24     1.89 0.11
```

```
t.test(df$Donation ~ df$RecvsC)
```

```
##
##  Welch Two Sample t-test
##
## data:  df$Donation by df$RecvsC
## t = -1.1398, df = 49.594, p-value = 0.2598
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.7413806  0.2046388
## sample estimates:
## mean in group Control     mean in group Rec
##              1.132258              1.400629
```

```
wilcox.test(df$Donation ~ df$RecvsC)
```

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$RecvsC
## W = 2244, p-value = 0.4199
## alternative hypothesis: true location shift is not equal to 0
```

We cannot reject the null that Donations in recommendation treatments are equal to donations in control condition.

Aggregated donations in default treatments > donations in control group

```
describeBy(df$Donation, df$DefvsC)
```

```
## group: Control
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 31 1.13 1.15      1    1.02 1.48   0   4     4 0.42    -0.94 0.21
## ------------------------------------------------------------
## group: Def
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 164 1.54 1.71      1    1.23 1.48   0   7     7 1.38     1.56 0.13
```

```r
t.test(df$Donation ~ df$DefvsC)
```

```
##
##  Welch Two Sample t-test
##
## data:  df$Donation by df$DefvsC
## t = -1.6562, df = 58.519, p-value = 0.103
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.90097966  0.08500798
## sample estimates:
## mean in group Control     mean in group Def
##              1.132258              1.540244
```

```r
wilcox.test(df$Donation ~ df$DefvsC)
```

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$DefvsC
## W = 2289.5, p-value = 0.3698
## alternative hypothesis: true location shift is not equal to 0
```

We cannot reject the null that Donations in default treatments are equal to donations in control condition.

Aggregated donations in default treatments > donations in recommendation treatments

```r
describeBy(df$Donation, df$RecvsDef)
```

```
## group: Rec
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 159  1.4 1.42      1     1.2 1.48   0   7     7 1.24     1.89 0.11
## ------------------------------------------------------------
## group: Def
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 164 1.54 1.71      1    1.23 1.48   0   7     7 1.38     1.56 0.13
## ------------------------------------------------------------
## group: Control
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 31 1.13 1.15      1    1.02 1.48   0   4     4 0.42    -0.94 0.21
```

```r
t.test(df$Donation[df$RecvsDef != "Control"] ~ df$RecvsDef[df$RecvsDef != "Control"])
```

```
##
##  Welch Two Sample t-test
##
## data:  df$Donation[df$RecvsDef != "Control"] by df$RecvsDef[df$RecvsDef != "Control"]
## t = -0.79821, df = 313.39, p-value = 0.4254
## alternative hypothesis: true difference in means is not equal to 0
```

```
## 95 percent confidence interval:
##  -0.4837626  0.2045326
## sample estimates:
## mean in group Rec mean in group Def
##          1.400629          1.540244
```

```
# the above is the syntax alternative to Dummies, finally...
wilcox.test(df$Donation ~ df$RecvsDefD)
```

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$RecvsDefD
## W = 12914, p-value = 0.8804
## alternative hypothesis: true location shift is not equal to 0
```

We cannot reject the null that Donations in default treatments are equal to donations in recommendation treatments.

H0c

The share of subjects converging to the recommended, respectively defaulted payment-values in the name and picture condition is higher than in the neutral source-condition.

For Recommendations: Donations in Name and Picture treatments > Donations in No-Source treatments

```
describeBy(df$Donation, df$RecNapvsRecNos)
```

```
## group: RecNap
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 33 1.32 1.31      1    1.15 1.48   0   5     5 0.83     0.13 0.23
## ------------------------------------------------------------
## group: RecNos
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 31 1.24 1.39      1    0.99 1.48   0   5     5 1.14     0.52 0.25
```

```
t.test(df$Donation ~ df$RecNapvsRecNos)
```

```
##
##  Welch Two Sample t-test
##
## data:  df$Donation by df$RecNapvsRecNos
## t = 0.25345, df = 61.007, p-value = 0.8008
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.5906449  0.7621014
## sample estimates:
## mean in group RecNap mean in group RecNos
##             1.321212             1.235484
```

```
wilcox.test(df$Donation ~ df$RecNapvsRecNos)
```

```
## Warning in wilcox.test.default(x = c(2, 0.5, 0, 2, 1, 2, 3.5, 2, 3, 0,
## 0.5, : cannot compute exact p-value with ties
```

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$RecNapvsRecNos
## W = 546, p-value = 0.6373
## alternative hypothesis: true location shift is not equal to 0
```

We cannot reject the null that Donations in recommendation treatments informing about the name and picture of the source are equal to donations in recommendation treatments providing no information about the source of the recommendation.

For Defaults: Donations in Name and Picture treatments > Donations in No-Source treatments

```
describeBy(df$Donation, df$DefNapvsDefNos)
```

```
## group: DefNap
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis  se
## 1    1 33 1.38 1.13    1.5    1.29 1.19   0   4     4 0.27    -0.88 0.2
## ------------------------------------------------------------
## group: DefNos
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 34 1.42 2.08    0.5    1.05 0.74   0   7     7 1.46     0.93 0.36
```

```
t.test(df$Donation ~ df$DefNapvsDefNos)
```

```
##
##  Welch Two Sample t-test
##
## data:  df$Donation by df$DefNapvsDefNos
## t = -0.11715, df = 51.157, p-value = 0.9072
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.8663619  0.7708183
## sample estimates:
## mean in group DefNap mean in group DefNos
##             1.375758             1.423529
```

```
wilcox.test(df$Donation ~ df$DefNapvsDefNos)
```

```
## Warning in wilcox.test.default(x = c(2, 0.7, 2, 3.5, 1, 0.5, 2, 0, 3, 0, :
## cannot compute exact p-value with ties
```

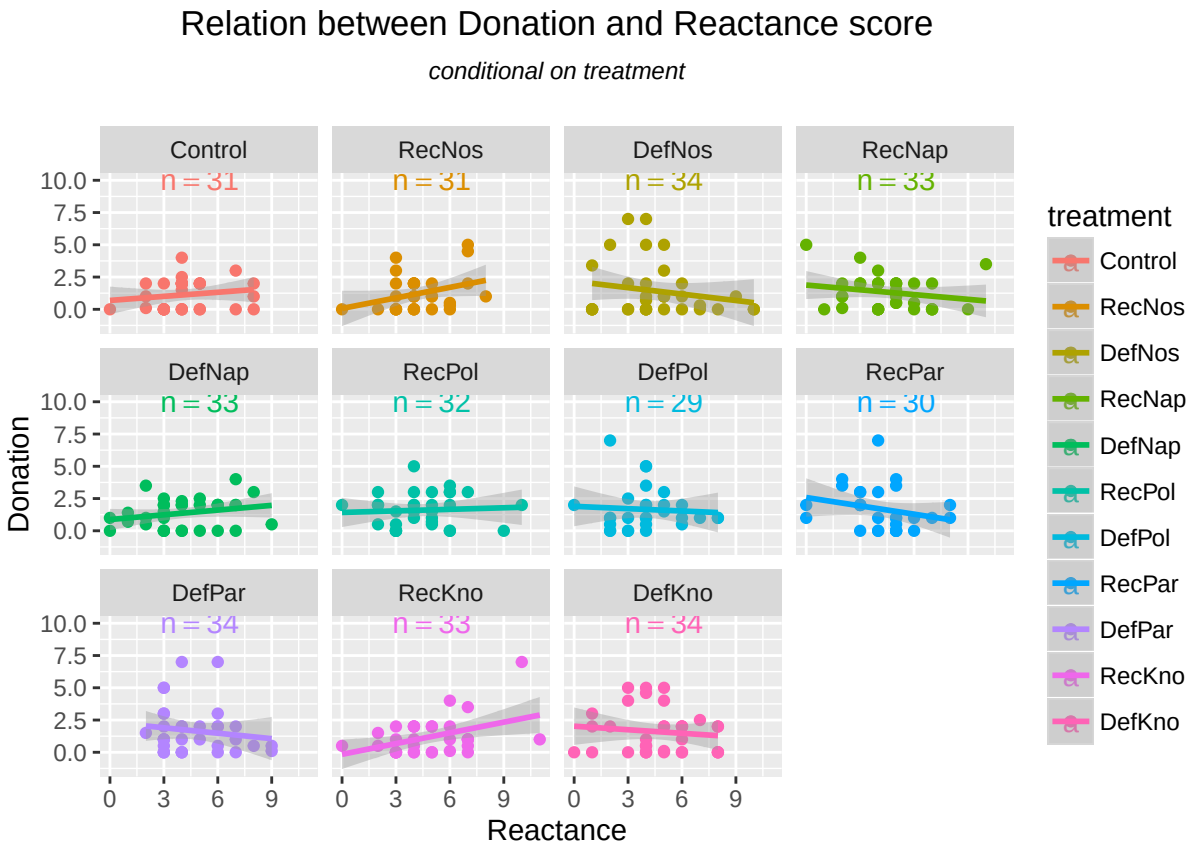
```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$DefNapvsDefNos
## W = 656, p-value = 0.2211
## alternative hypothesis: true location shift is not equal to 0
```

We cannot reject the null that Donations in default treatments informing about the name and picture of the source are equal to donations in default treatments providing no information about the source of the default.

H1

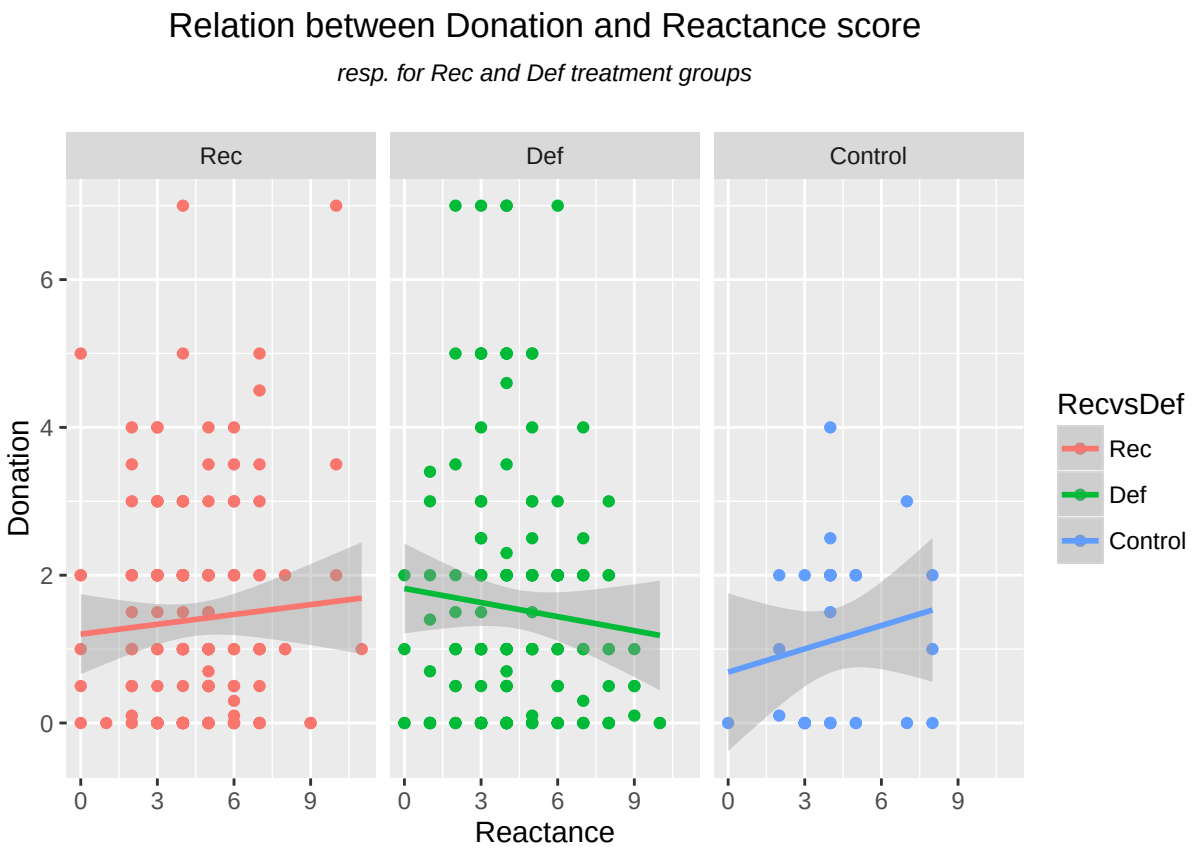
A subject's reaction towards the respective intervention ~~depends on~~ is predicted by trait reactance.

The following are not rigurous tests of the respective hypotheses, but rather approaches to get an idea about relationships and predictions.



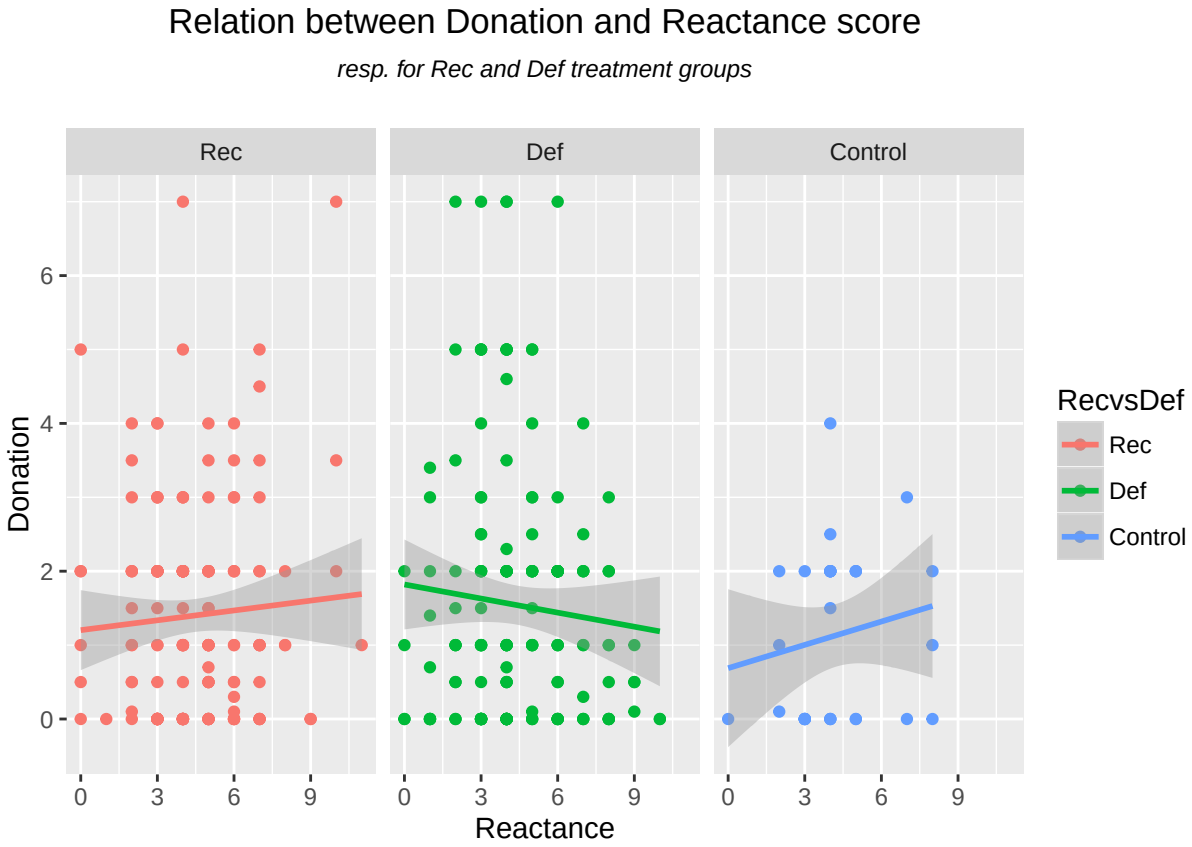
H1a

A subject that scores high on trait reactance is less likely to converge to the recommended and defaulted payment-values, than a subject scoring low on trait reactance. *The following treats the Reactance score as metric.*



H1b

A subject that scores high on trait reactance is less likely to converge to the defaulted than to the recommended payment-value.



Left is recommendation group, middle is default group, right is Control.

H2

The share of subjects converging to the recommended, respectively defaulted payment-values in the condition informing about the academic degree of the source is higher than in the name and picture condition.

For Recommendations: Donations in Knowledge treatments > Donations in Name and Picture treatments

```
describeBy(df$Donation, df$RecNapvsRecKno)
```

```
## group: RecNap
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 33 1.32 1.31      1    1.15 1.48   0   5     5 0.83     0.13 0.23
## ------------------------------------------------------------
## group: RecKno
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 33 1.18 1.47      1    0.91 1.48   0   7     7 2.06     5.17 0.26
```

```
t.test(df$Donation ~ df$RecNapvsRecKno)
```

```
##
```

```
##  Welch Two Sample t-test
##
## data:  df$Donation by df$RecNapvsRecKno
## t = 0.3982, df = 63.131, p-value = 0.6918
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.5479357  0.8206629
## sample estimates:
## mean in group RecNap mean in group RecKno
##             1.321212             1.184848
```

```
wilcox.test(df$Donation ~ df$RecNapvsRecKno)
```

```
## Warning in wilcox.test.default(x = c(2, 0.5, 0, 2, 1, 2, 3.5, 2, 3, 0,
## 0.5, : cannot compute exact p-value with ties
```

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$RecNapvsRecKno
## W = 593, p-value = 0.5271
## alternative hypothesis: true location shift is not equal to 0
```

For Defaults: Donations in Knowledge treatments > Donations in Name and Picture treatments

```
describeBy(df$Donation, df$DefNapvsDefKno)
```

```
## group: DefNap
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis  se
## 1    1 33 1.38 1.13    1.5    1.29 1.19   0   4     4 0.27    -0.88 0.2
## ------------------------------------------------------------
## group: DefKno
##   vars  n mean  sd median trimmed  mad min max range skew kurtosis   se
## 1    1 34 1.59 1.7    1.5     1.4 2.22   0   5     5 0.73    -0.74 0.29
```

```
t.test(df$Donation ~ df$DefNapvsDefKno)
```

```
##
##  Welch Two Sample t-test
##
## data:  df$Donation by df$DefNapvsDefKno
## t = -0.62073, df = 57.523, p-value = 0.5372
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.9226528  0.4859326
## sample estimates:
## mean in group DefNap mean in group DefKno
##             1.375758             1.594118
```

```
wilcox.test(df$Donation ~ df$DefNapvsDefKno)
```

```
## Warning in wilcox.test.default(x = c(2, 0.7, 2, 3.5, 1, 0.5, 2, 0, 3, 0, :
## cannot compute exact p-value with ties
```

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$DefNapvsDefKno
## W = 557.5, p-value = 0.9691
## alternative hypothesis: true location shift is not equal to 0
```

H3-1

The share of subjects converging to the recommended, respectively defaulted payment-values in the condition informing about the political characteristic of the source is lower than in the name and picture condition.

For Recommendations: Donations in Political treatments < Donations in Name and Picture treatments

```
describeBy(df$Donation, df$RecNapvsRecPol)
```

```
## group: RecNap
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 33 1.32 1.31      1    1.15 1.48   0   5     5 0.83     0.13 0.23
## ------------------------------------------------------------
## group: RecPol
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 32  1.6 1.29   1.75    1.53 1.85   0   5     5 0.43    -0.48 0.23
```

```
t.test(df$Donation ~ df$RecNapvsRecPol)
```

```
##
##  Welch Two Sample t-test
##
## data:  df$Donation by df$RecNapvsRecPol
## t = -0.86661, df = 62.985, p-value = 0.3894
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.9216563  0.3640806
## sample estimates:
## mean in group RecNap mean in group RecPol
##             1.321212             1.600000
```

```
wilcox.test(df$Donation ~ df$RecNapvsRecPol)
```

```
## Warning in wilcox.test.default(x = c(2, 0.5, 0, 2, 1, 2, 3.5, 2, 3, 0,
## 0.5, : cannot compute exact p-value with ties
```

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$RecNapvsRecPol
## W = 458, p-value = 0.3506
## alternative hypothesis: true location shift is not equal to 0
```

We cannot reject the null that Donations in recommendation treatments informing about the political mandate of the source are equal to donations in recommendations treatments providing the name and picture of the source.

For Defaults: Donations in Political treatments < Donations in Name and Picture treatments

```
describeBy(df$Donation, df$DefNapvsDefPol)
```

```
## group: DefNap
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis  se
## 1    1 33 1.38 1.13    1.5    1.29 1.19   0   4     4 0.27    -0.88 0.2
## ------------------------------------------------------------
## group: DefPol
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 29 1.66 1.68      1    1.44 1.48   0   7     7 1.51     1.87 0.31
```

```
t.test(df$Donation ~ df$DefNapvsDefPol)
```

```
##
##  Welch Two Sample t-test
##
## data:  df$Donation by df$DefNapvsDefPol
## t = -0.75775, df = 48.01, p-value = 0.4523
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -1.0208211  0.4619914
## sample estimates:
## mean in group DefNap mean in group DefPol
##             1.375758             1.655172
```

```
wilcox.test(df$Donation ~ df$DefNapvsDefPol)
```

```
## Warning in wilcox.test.default(x = c(2, 0.7, 2, 3.5, 1, 0.5, 2, 0, 3, 0, :
## cannot compute exact p-value with ties
```

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$DefNapvsDefPol
## W = 466.5, p-value = 0.8689
## alternative hypothesis: true location shift is not equal to 0
```

We cannot reject the null that donations in default treatments informing about the political mandate of the source are equal to donations in default treatments providing the name and picture of the source.

H3-2

When the source is political the share of subjects converging to the default is lower than the share of subjects converging to the recommendation.

Donations in default treatments informing about the political characteristics of the source < donations in recommendation treatments informing about the political characteristics of the source

```
describeBy(df$Donation, df$RecPolvsDefPol)
```

```
## group: RecPol
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 32  1.6 1.29   1.75    1.53 1.85   0   5     5 0.43    -0.48 0.23
## ------------------------------------------------------------
## group: DefPol
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 29 1.66 1.68      1    1.44 1.48   0   7     7 1.51     1.87 0.31
```

```
t.test(df$Donation ~ df$RecPolvsDefPol)
```

```
##
##  Welch Two Sample t-test
##
## data:  df$Donation by df$RecPolvsDefPol
## t = -0.14289, df = 52.32, p-value = 0.8869
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.8298648  0.7195200
## sample estimates:
## mean in group RecPol mean in group DefPol
##             1.600000             1.655172
```

```
wilcox.test(df$Donation ~ df$RecPolvsDefPol)
```

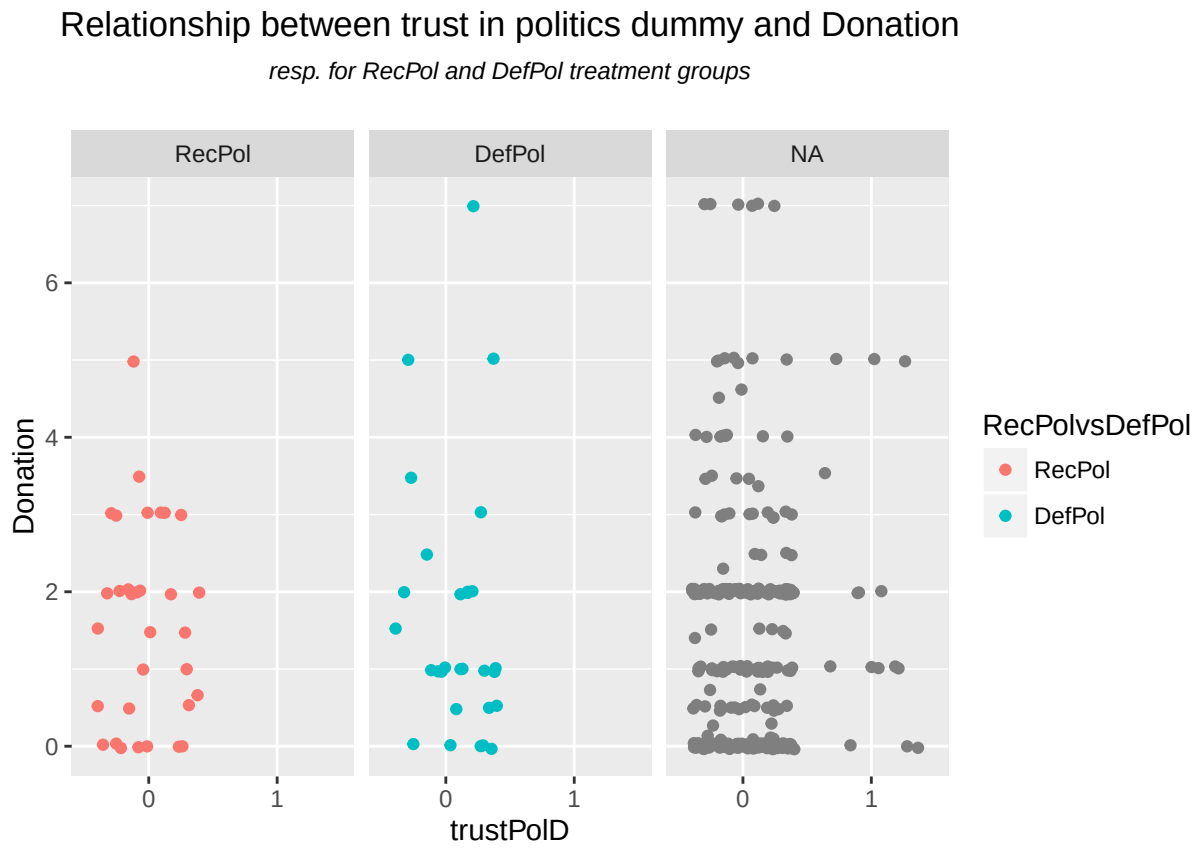
```
## Warning in wilcox.test.default(x = c(3, 1, 0.5, 3.5, 0, 0, 0.5, 0, 2, 1, :
## cannot compute exact p-value with ties
```

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$RecPolvsDefPol
## W = 486, p-value = 0.7531
## alternative hypothesis: true location shift is not equal to 0
```

We cannot reject the null that donations in default treatments informing about the political characteristics of the source are equal to donations in recommendation treatments informing about the political characteristics of the source.

H3a (HERE ALSO INCLUDE PARTY TREATMENTS, NOT JUST POLITICAL?)

A subject that scores high on trust in politics is more likely to converge to the recommended and defaulted payment-values, than a subject scoring low on trust in politics. *In treatments informing about the political characteristics of the source.*

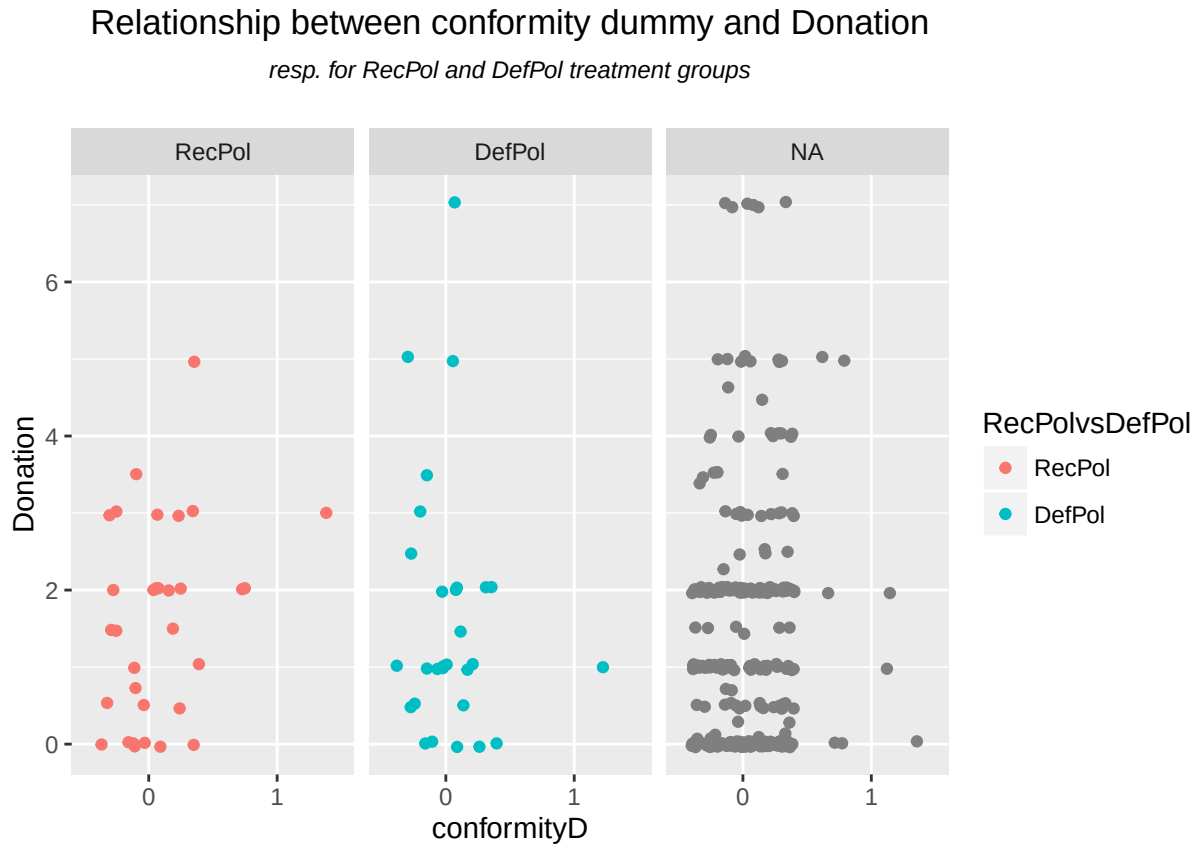



```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$trustPolD
## W = 2104, p-value = 0.2474
## alternative hypothesis: true location shift is not equal to 0
```

Problem is that there are not enough observations with high trust in politics (no observation in Default x Political treatment.

H3b

A subject that values conformity, i.e. doing what the majority does, is more likely to converge to the recommended and defaulted payment-values, than a subject that does not value conformity.




```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$conformityD
## W = 1696, p-value = 0.2961
## alternative hypothesis: true location shift is not equal to 0
```

Problem is that there are not enough observations with high trust in politics.

H4

The share of subjects converging to the recommended, respectively defaulted payment-values, relative to the political-characteristic condition, is higher for subjects with same party preferences, and lower for subjects with different party preferences. **Hypothesis is possibly phrased wrongly.**

```
table(df$party)
```

```
##
##                AfD             Andere     Bündnis90/Grüne
##                  9                 21                  71
##             CDU/CSU          Die Linke                FDP
##                 58                 65                  11
## Keine (Nichtwähler)       Keine Angabe                SPD
##                  44                  7                  68
```

```r
table(df$party, df$treatment)
```

```
##
##                       Control RecNos DefNos RecNap DefNap RecPol DefPol
##   AfD                       2      1      0      2      0      0      1
##   Andere                    2      3      1      3      1      1      1
##   Bündnis90/Grüne           6      6      7      8      7      7      5
##   CDU/CSU                   5      7      4      2      5      4      5
##   Die Linke                 7      4      6      5      8      8      5
##   FDP                       0      1      2      1      1      0      0
##   Keine (Nichtwähler)       5      5      6      3      2      2      3
##   Keine Angabe              1      0      3      0      0      0      2
##   SPD                       3      4      5      9      9     10      7
##
##                       RecPar DefPar RecKno DefKno
##   AfD                      0      0      1      2
##   Andere                   2      1      3      3
##   Bündnis90/Grüne          2     11      5      7
##   CDU/CSU                  6      7     10      3
##   Die Linke                7      5      6      4
##   FDP                      0      0      3      3
##   Keine (Nichtwähler)      7      5      3      3
##   Keine Angabe             1      0      0      0
##   SPD                      5      5      2      9
```

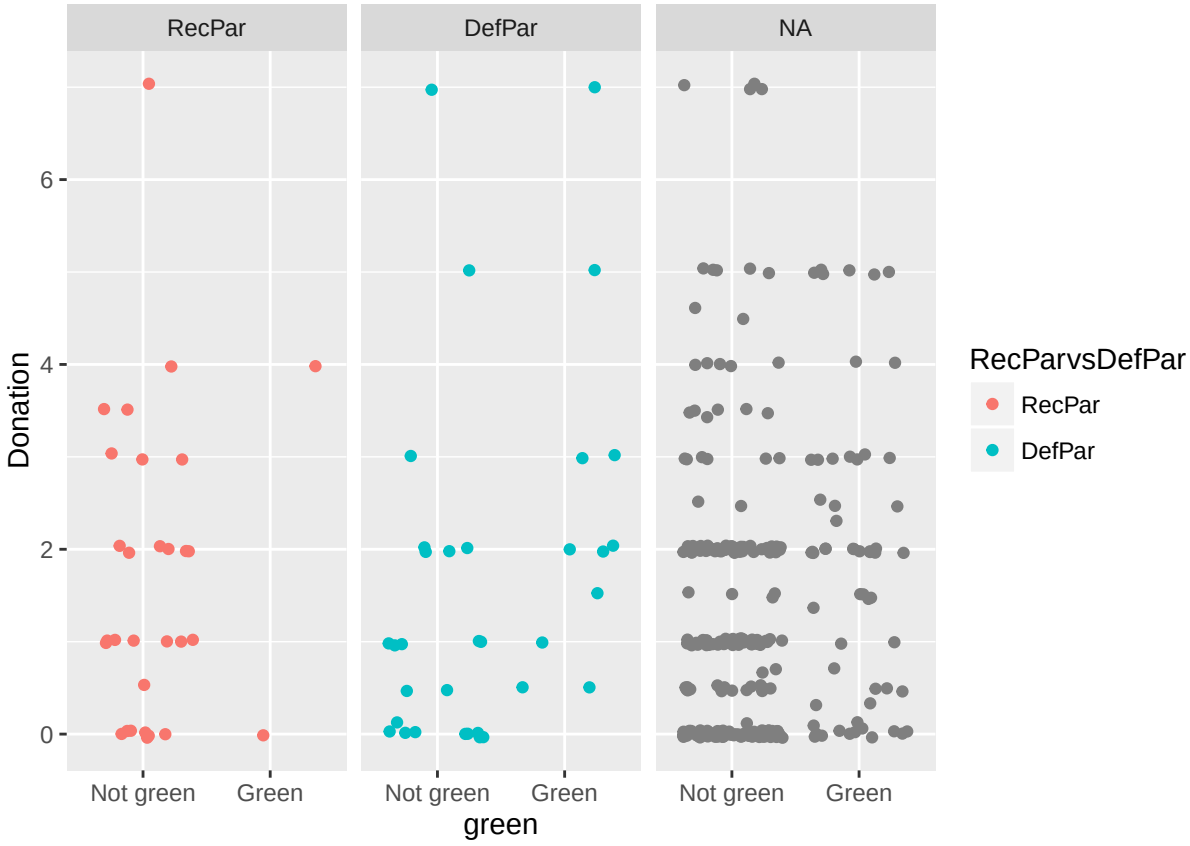
```r
chisq.test(table(df$party, df$treatment))
```

```
## Warning in chisq.test(table(df$party, df$treatment)): Chi-squared
## approximation may be incorrect
```

```
##
##  Pearson's Chi-squared test
##
## data:  table(df$party, df$treatment)
## X-squared = 82.373, df = 80, p-value = 0.4058
```

```
##
##             Control RecNos DefNos RecNap DefNap RecPol DefPol RecPar
##   Not green      25     25     27     25     26     25     24     28
##   Green           6      6      7      8      7      7      5      2
##
##             DefPar RecKno DefKno
##   Not green     23     28     27
##   Green         11      5      7
```

```
##
##             RecPar DefPar
##   Not green     28     23
##   Green          2     11
```



Further Statistics and Tests

Compare observations that believe we cooperated with Julia Verlinden vs. those who don't

Variable: Donation amount

```
## group: Ja
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis  se
## 1    1 153 1.32 1.27      1    1.16 1.48   0   5     5 0.88     0.23 0.1
## ------------------------------------------------------------
## group: Nein
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 109 1.73 1.79    1.5    1.45 1.48   0   7     7  1.3     1.38 0.17

##
##  Welch Two Sample t-test
##
## data:  df$Donation by df$believe2
## t = -2.0378, df = 182.44, p-value = 0.04301
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.80107778 -0.01294152
## sample estimates:
```

```
##   mean in group Ja mean in group Nein
##          1.324183           1.731193
```

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$believe2
## W = 7631.5, p-value = 0.2333
## alternative hypothesis: true location shift is not equal to 0
```

*Participants who believe we cooperated with Julia Verlinden have a **lower** mean Donation, and also a **lower** variance. The difference is significant ($p < .1$) judged by the Welch Two Sample t-test, but insignificant judged by the Wilcoxon-Mann-Whitney-U test.*

Variable: Decision to donate

```
##
##                Ja Nein
##   Not donated  41   30
##   Donated     112   79
```

```
chisq.test(table(df$Donated, df$believe2))
```

```
##
##  Pearson's Chi-squared test with Yates' continuity correction
##
## data:  table(df$Donated, df$believe2)
## X-squared = 5.7642e-31, df = 1, p-value = 1
```

The Chi?-Test is not significant. This implies that the decision whether or not to contribute anything vs. nothing is not dependent on the answer to the question whether the respondent believed that we really cooperated with Julia Verlinden.

Decision to donate for subjects seeing a recommendation vs. subjects seeing a default, irrespective of source

```
table(df$Donated, df$RecvsDef)
```

```
##
##               Rec Def Control
##   Not donated  46  50      13
##   Donated     113 114      18
```

```
chisq.test(table(df$Donated, df$RecvsDef))
```

```
##
##  Pearson's Chi-squared test
##
## data:  table(df$Donated, df$RecvsDef)
## X-squared = 2.072, df = 2, p-value = 0.3549
```

The Chi?-Test is not significant. This implies that the decision whether or not to contribute anything vs. nothing is not dependent on whether the subjects encountered a recommendation or a default value with our without any specific source or information on the source (or nothing at all, as in the control group).

Decision to donate for subjects seeing a recommendation vs. subjects seeing a default, with non-political source-information

```
##
##               Non-political/partisan Rec Non-political/partisan Def
##   Not donated                          31                          37
##   Donated                              66                          64
```

```
##
##  Pearson's Chi-squared test with Yates' continuity correction
##
## data:  table(df$Donated, df$RecvsDefNonPolPar)
## X-squared = 0.29465, df = 1, p-value = 0.5873
```

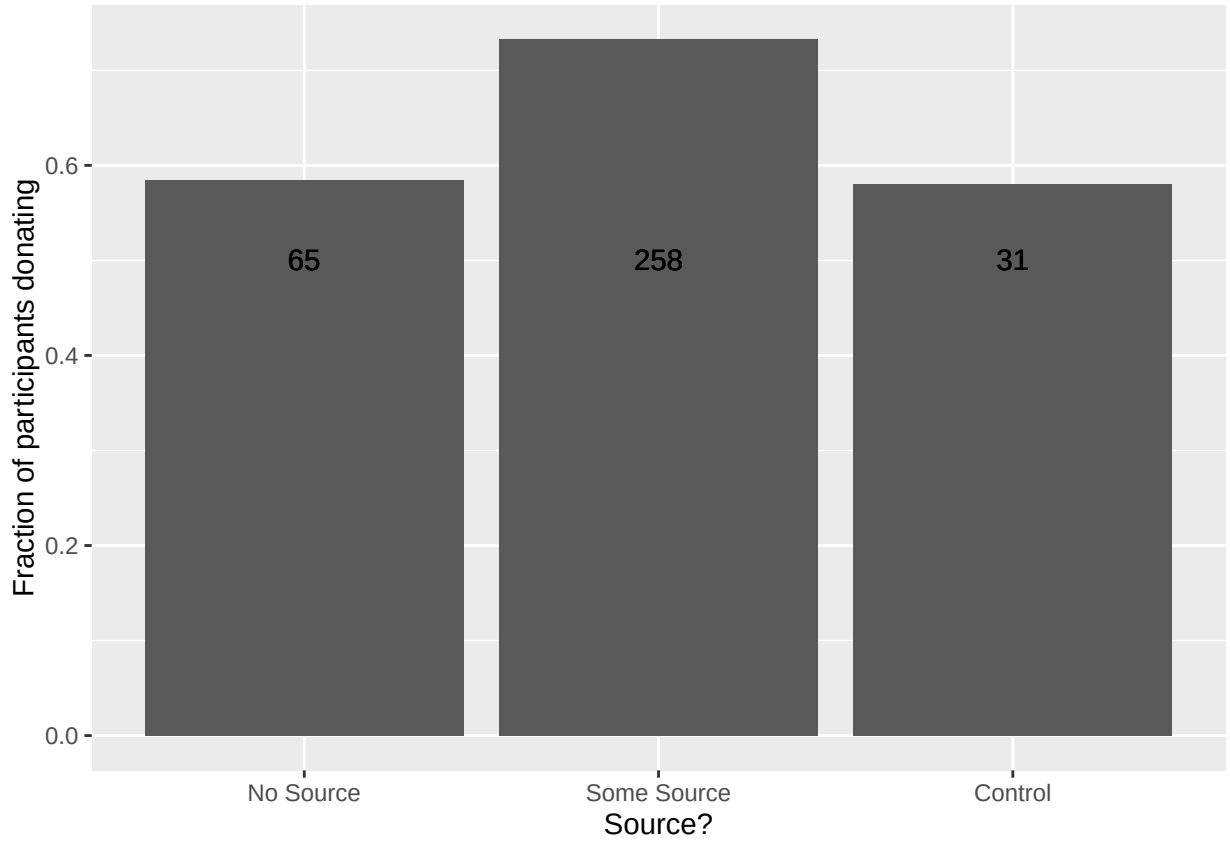
The Chi?-Test is not significant. This implies that the decision whether or not to contribute anything vs. nothing is not dependent on whether the subjects encountered a non-political or non-partisan recommendation or a respective default value.

Decision to donate for subjects seeing an intervention without source-information vs. some source-information

```
##
##               No Source Some Source Control
##   Not donated        27          69      13
##   Donated            38         189      18
```

```
##
##  Pearson's Chi-squared test
##
## data:  table(df$Donated, df$NosvsSome)
## X-squared = 7.3127, df = 2, p-value = 0.02583
```

```
## Warning in Ops.factor(left, right): '/' not meaningful for factors
```



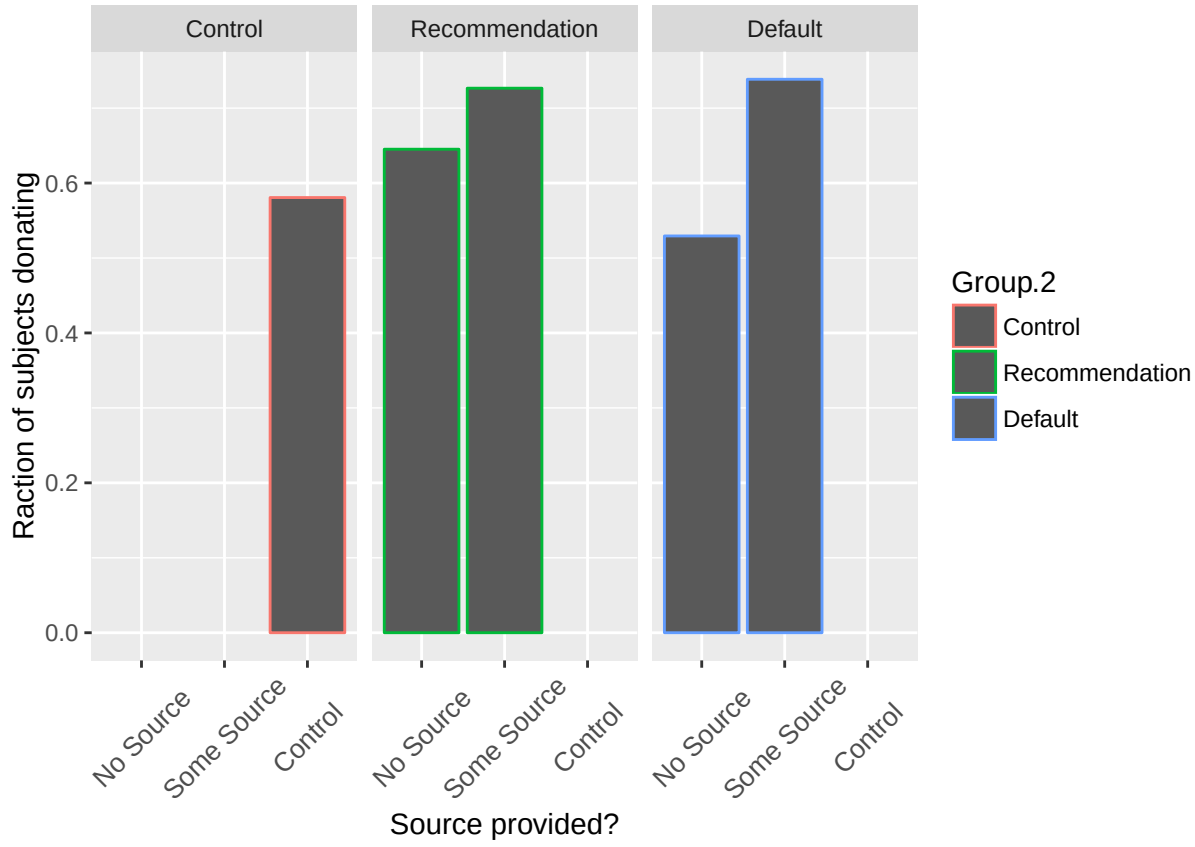

```
##
## Call:
## glm(formula = Donated ~ NosvsSome, family = "binomial", data = df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6241  -1.3256   0.7889   0.7889   1.0427
##
## Coefficients:
##                       Estimate Std. Error z value Pr(>|z|)
## (Intercept)            0.34175    0.25170   1.358   0.1745
## NosvsSomeSome Source   0.66589    0.28833   2.309   0.0209 *
## NosvsSomeControl      -0.01633    0.44253  -0.037   0.9706
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 437.13  on 353  degrees of freedom
## Residual deviance: 430.04  on 351  degrees of freedom
## AIC: 436.04
##
## Number of Fisher Scoring iterations: 4
```

The Chi? test is significant ($p < .1$). This implies that the decision whether or not to contribute or not depends on whether or not some source-information vs. no source-information is provided. In the logit regression, the

estimator for the provision of any source-information is also statistically significant.

Further investigation of this effect: Variation by type of intervention?

```
## Don't know how to automatically pick scale for object of type data.frame. Defaulting to continuous.
```

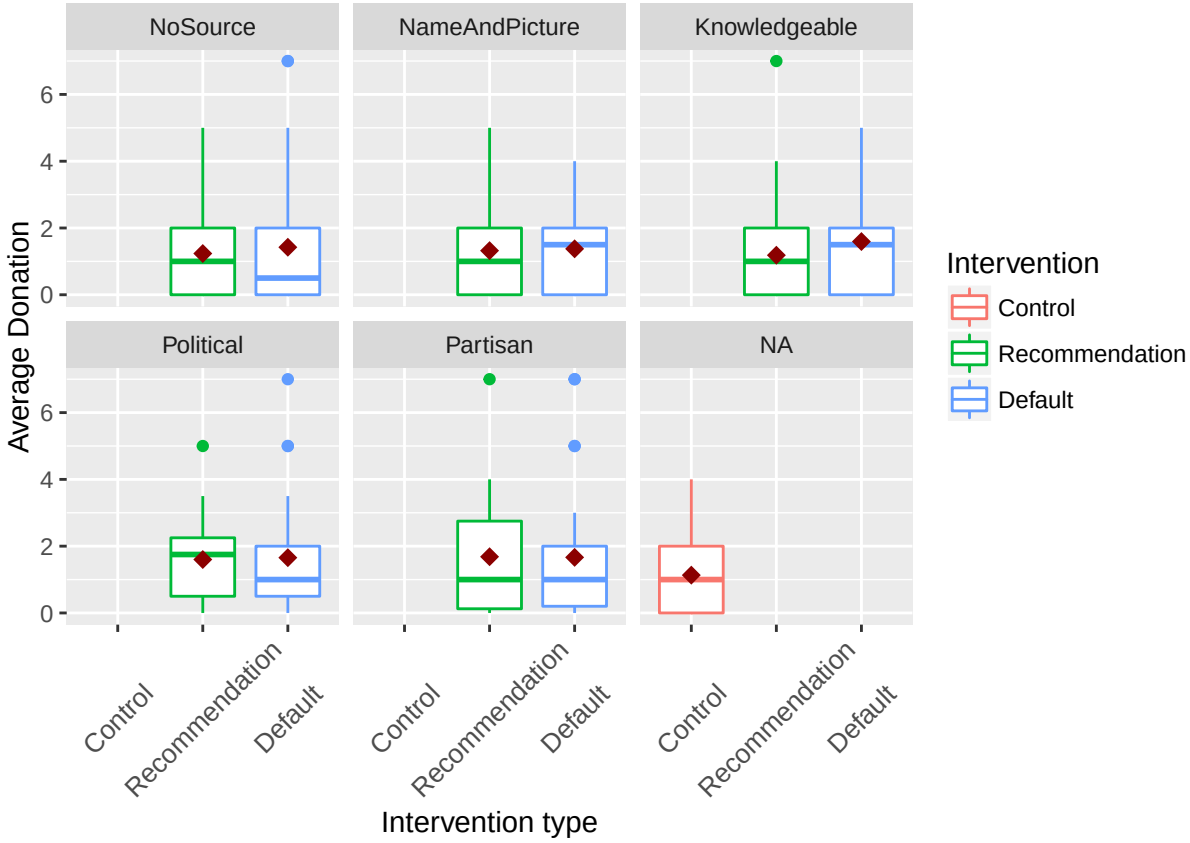



```
##
## Call:
## glm(formula = Donated ~ Sourcetype * RecvsDefD, family = "binomial",
##     data = df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8750  -1.2278   0.7325   0.8497   1.1278
##
## Coefficients:
##                                      Estimate Std. Error z value Pr(>|z|)
## (Intercept)                            0.5978     0.3754   1.593    0.111
## SourcetypeNameAndPicture               0.2351     0.5333   0.441    0.659
## SourcetypeKnowledgeable                0.2351     0.5333   0.441    0.659
## SourcetypePolitical                    0.6751     0.5690   1.187    0.235
## SourcetypePartisan                     0.4138     0.5580   0.742    0.458
## RecvsDefDDef                          -0.4801     0.5089  -0.943    0.346
## SourcetypeNameAndPicture:RecvsDefDDef  0.6280     0.7451   0.843    0.399
## SourcetypeKnowledgeable:RecvsDefDDef   0.2533     0.7289   0.348    0.728
```

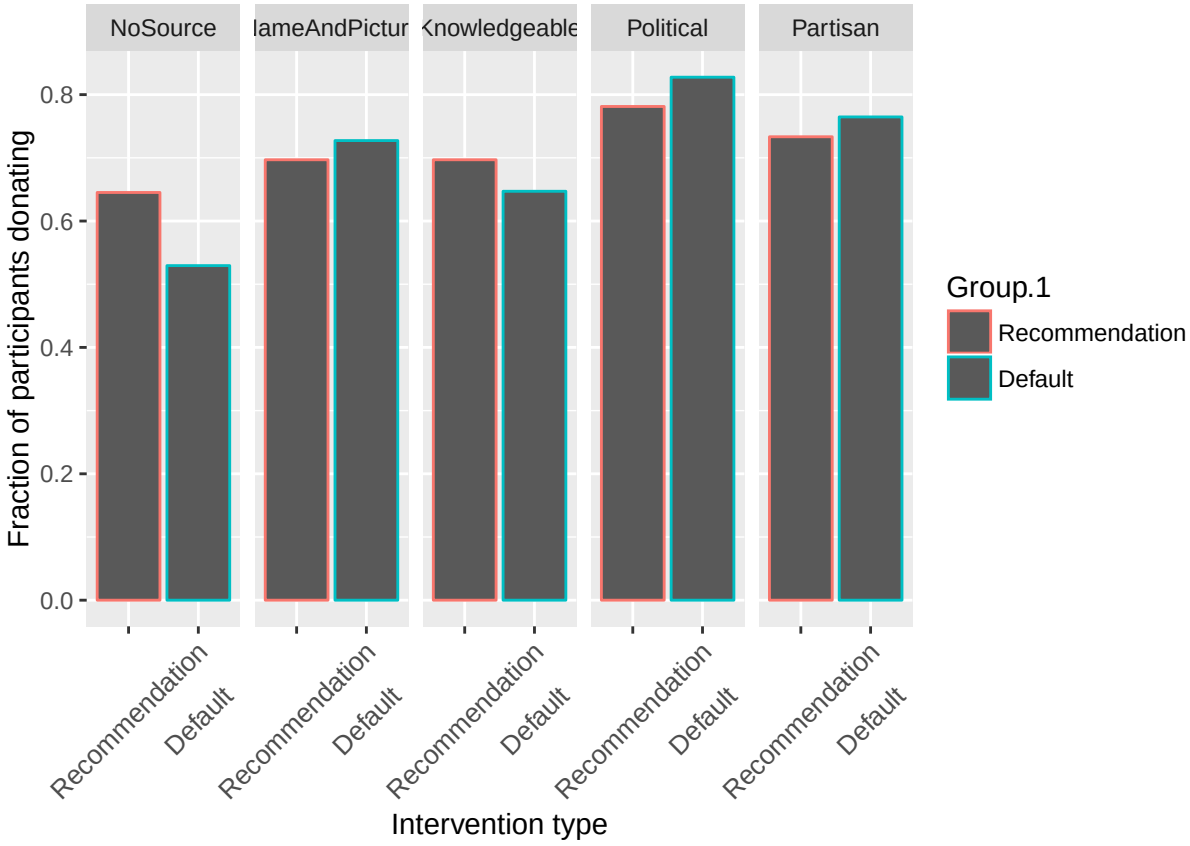
```
## SourcetypePolitical:RecvsDefDDef        0.7757     0.8267   0.938    0.348
## SourcetypePartisan:RecvsDefDDef         0.6471     0.7700   0.840    0.401
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 393.08  on 322  degrees of freedom
## Residual deviance: 383.31  on 313  degrees of freedom
##   (31 observations deleted due to missingness)
## AIC: 403.31
##
## Number of Fisher Scoring iterations: 4
```

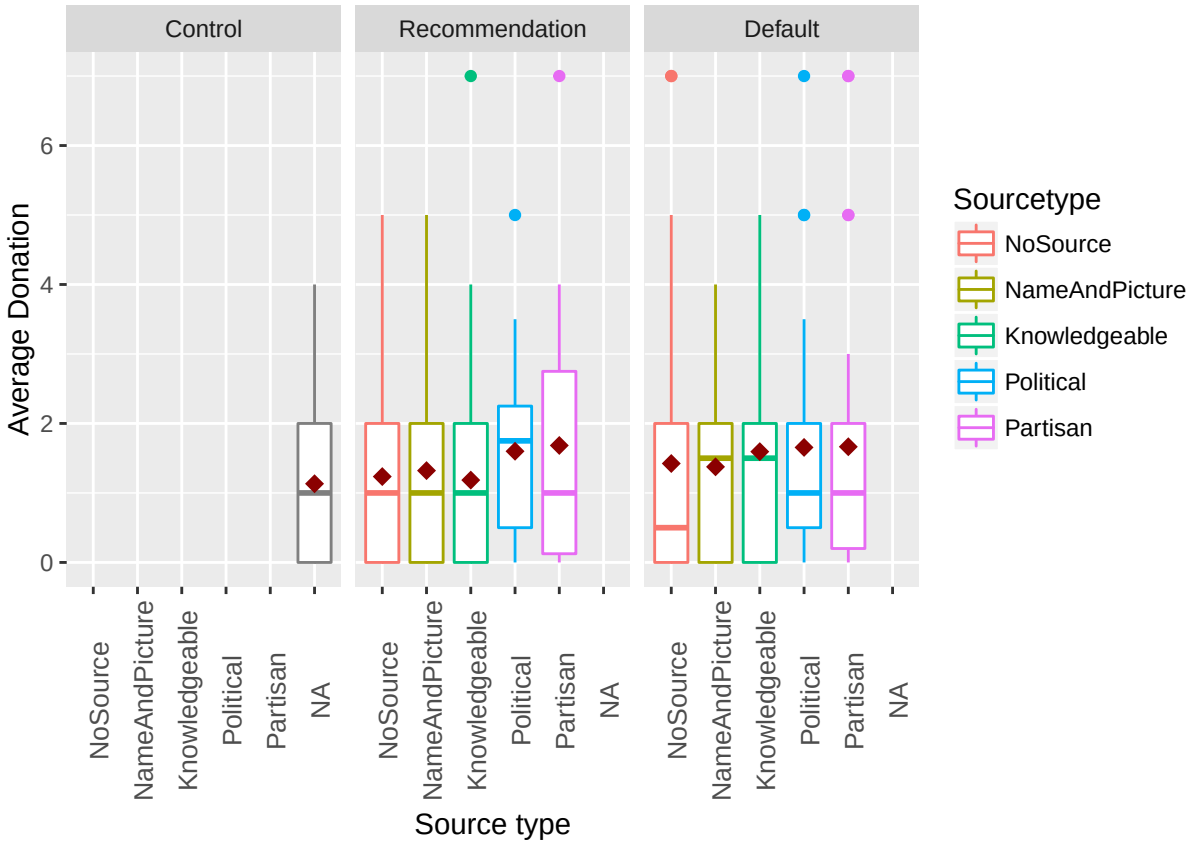
```
##
## Call:
## glm(formula = Donated ~ NosvsSomeD * RecvsDefD, family = "binomial",
##     data = df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6378  -1.2278   0.7787   0.7993   1.1278
##
## Coefficients:
##                                   Estimate Std. Error z value Pr(>|z|)
## (Intercept)                         0.5978     0.3754   1.593    0.111
## NosvsSomeDSome Source               0.3794     0.4245   0.894    0.371
## RecvsDefDDef                       -0.4801     0.5089  -0.943    0.346
## NosvsSomeDSome Source:RecvsDefDDef  0.5408     0.5815   0.930    0.352
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 393.08  on 322  degrees of freedom
## Residual deviance: 386.93  on 319  degrees of freedom
##   (31 observations deleted due to missingness)
## AIC: 394.93
##
## Number of Fisher Scoring iterations: 4
```

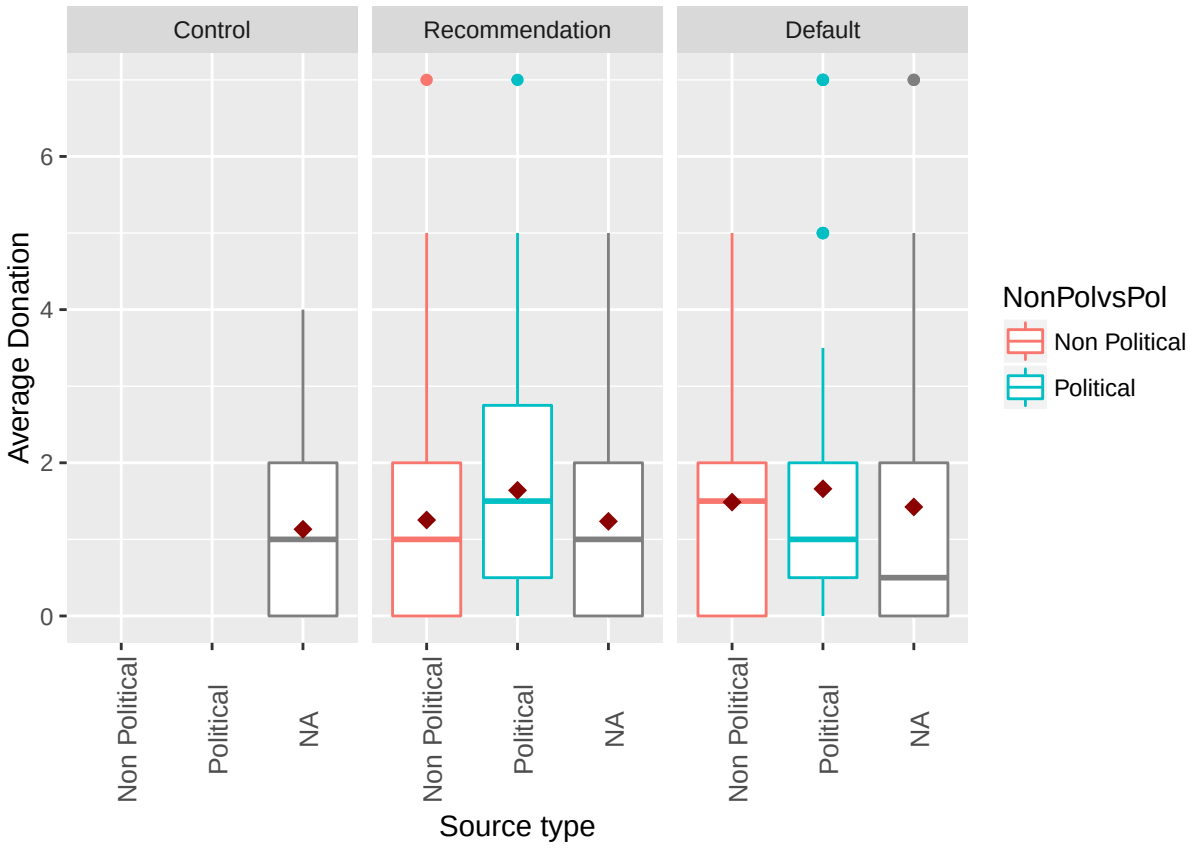
Graphs in order to see potential interactions (CHANGE TO BOXPLOTS)




```
## Warning in Ops.factor(left, right): '/' not meaningful for factors

## Warning in Ops.factor(left, right): '/' not meaningful for factors
```

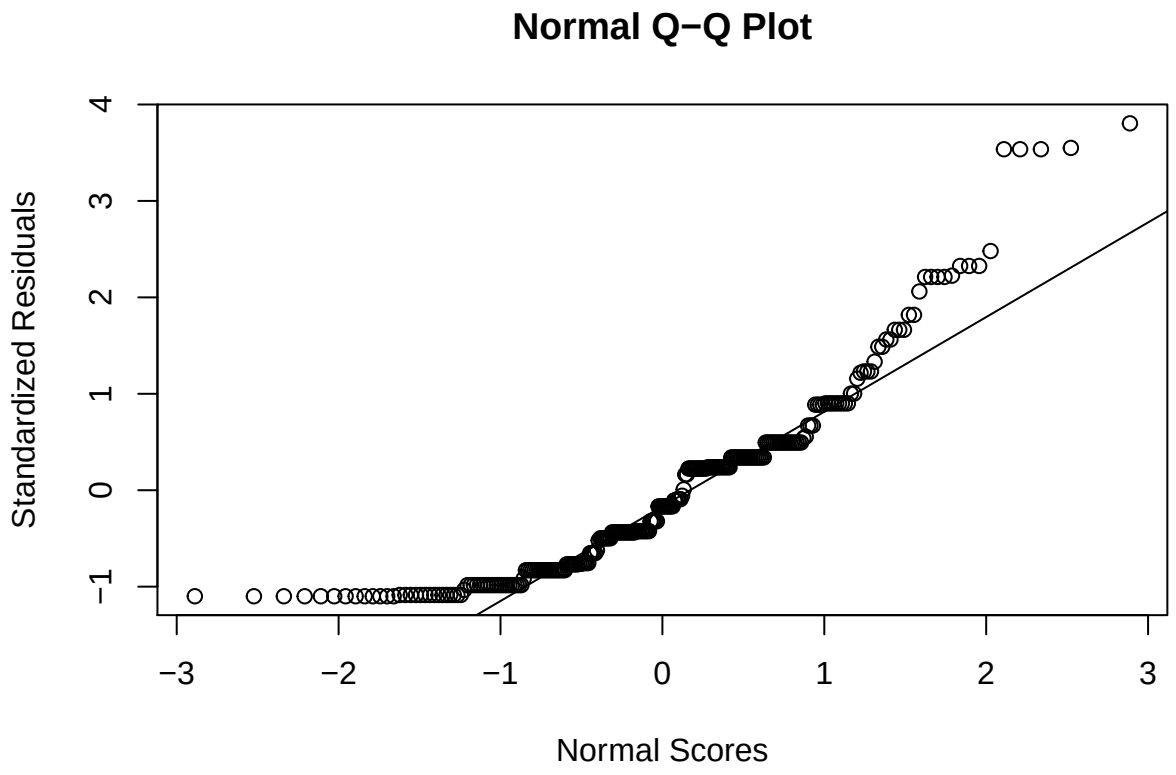

NoSource
lameAndPictur
Knowledgeable
Political
Partisan
Fraction of participants donating
0.0
0.2
0.4
0.6
0.8
Recommendation
Default
Intervention type
Group.1
Recommendation
Default


Control
Recommendation
Default
Average Donation
0
2
4
6
NoSource
NameAndPicture
Knowledgeable
Political
Partisan
NA
Source type
Sourcetype
NoSource
NameAndPicture
Knowledgeable
Political
Partisan




```
## group: Non Political
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 133 1.37 1.41      1    1.16 1.48   0   7     7 1.15     1.35 0.12
## ------------------------------------------------------------
## group: Political
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 125 1.65 1.62      1     1.4 1.48   0   7     7 1.36     1.93 0.15

##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$NonPolvsPol
## W = 7533, p-value = 0.1848
## alternative hypothesis: true location shift is not equal to 0

##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation[df$Intervention == "Recommendation"] by df$NonPolvsPol[df$Intervention == "Recomme
## W = 1710.5, p-value = 0.103
## alternative hypothesis: true location shift is not equal to 0

##
## Call:
## lm(formula = Donation ~ NonPolvsPol * Intervention, data = df)
```

```
##
## Residuals:
##    Min     1Q Median     3Q    Max
## -1.660 -1.253 -0.253  0.747  5.747
##
## Coefficients:
##                                          Estimate Std. Error t value
## (Intercept)                                1.2530     0.1874   6.688
## NonPolvsPolPolitical                       0.3873     0.2692   1.439
## InterventionDefault                        0.2335     0.2640   0.885
## NonPolvsPolPolitical:InterventionDefault  -0.2135     0.3793  -0.563
##                                          Pr(>|t|)
## (Intercept)                              1.43e-10 ***
## NonPolvsPolPolitical                        0.151
## InterventionDefault                         0.377
## NonPolvsPolPolitical:InterventionDefault    0.574
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.522 on 254 degrees of freedom
##   (96 observations deleted due to missingness)
## Multiple R-squared:  0.01154,    Adjusted R-squared:  -0.0001395
## F-statistic: 0.9881 on 3 and 254 DF,  p-value: 0.399
```

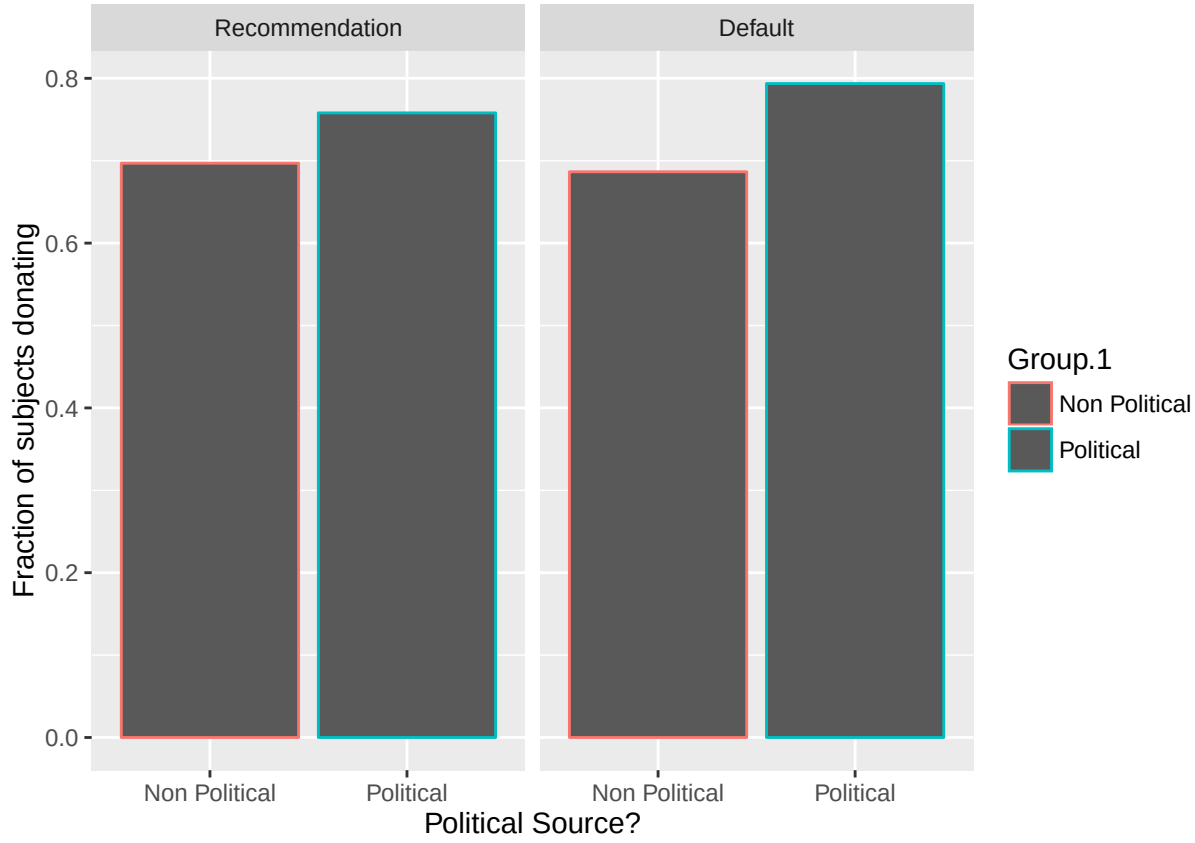


This suggests (visually) that providing information about political/partisan aspects of the source has an impact for average contributions for Recommendations, but not for Defaults. Further investigation with Wilcoxon

Test and linear OLS-regression finds no significant effects.

```
m <- aggregate(df$Donatedm, list(df$NonPolvsPol, df$Intervention), sum)
m$n <- aggregate(df$Donatedm, list(df$NonPolvsPol, df$Intervention), length)[3]
ggplot(data = m, aes(x = Group.1, y = x/n, colour = Group.1)) +
  facet_grid(~Group.2) +
  geom_bar(stat = "identity") +
  xlab("Political Source?") +
  ylab("Fraction of subjects donating")
```

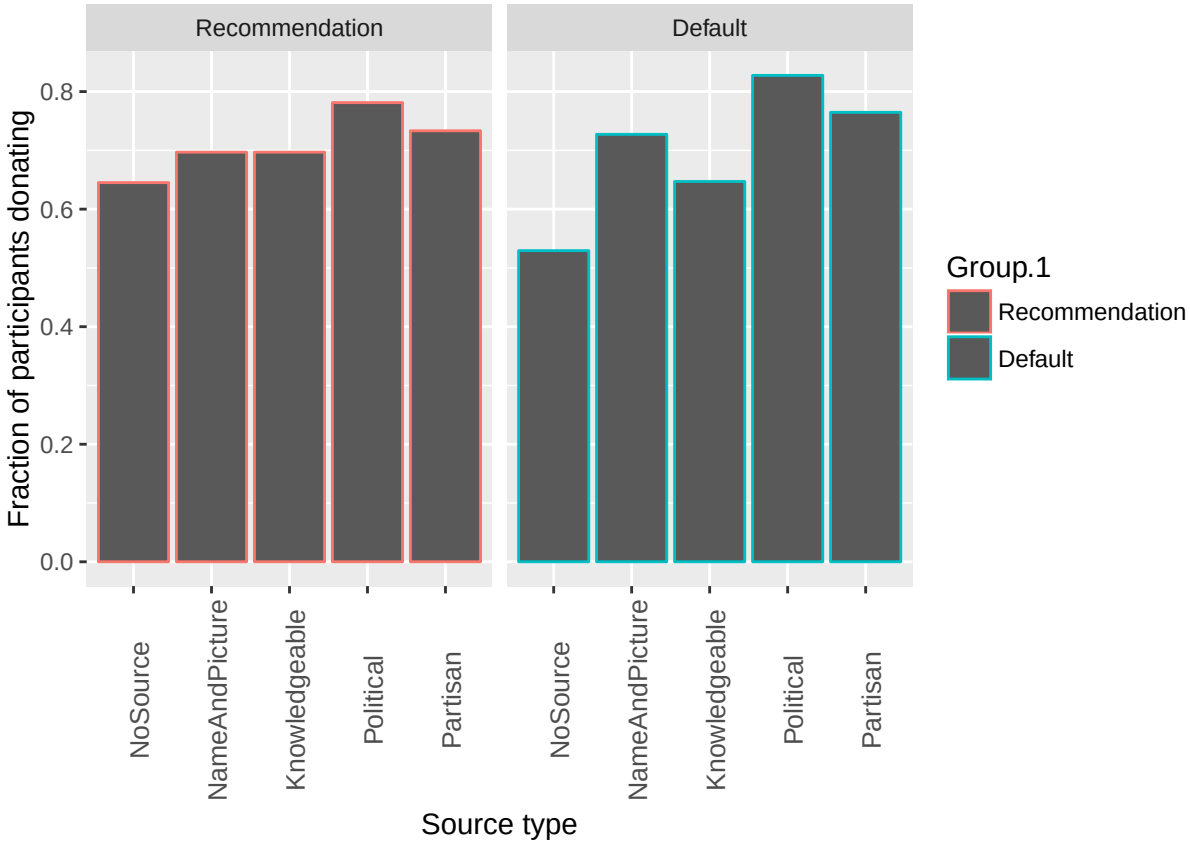
```
## Don't know how to automatically pick scale for object of type data.frame. Defaulting to continuous.
```



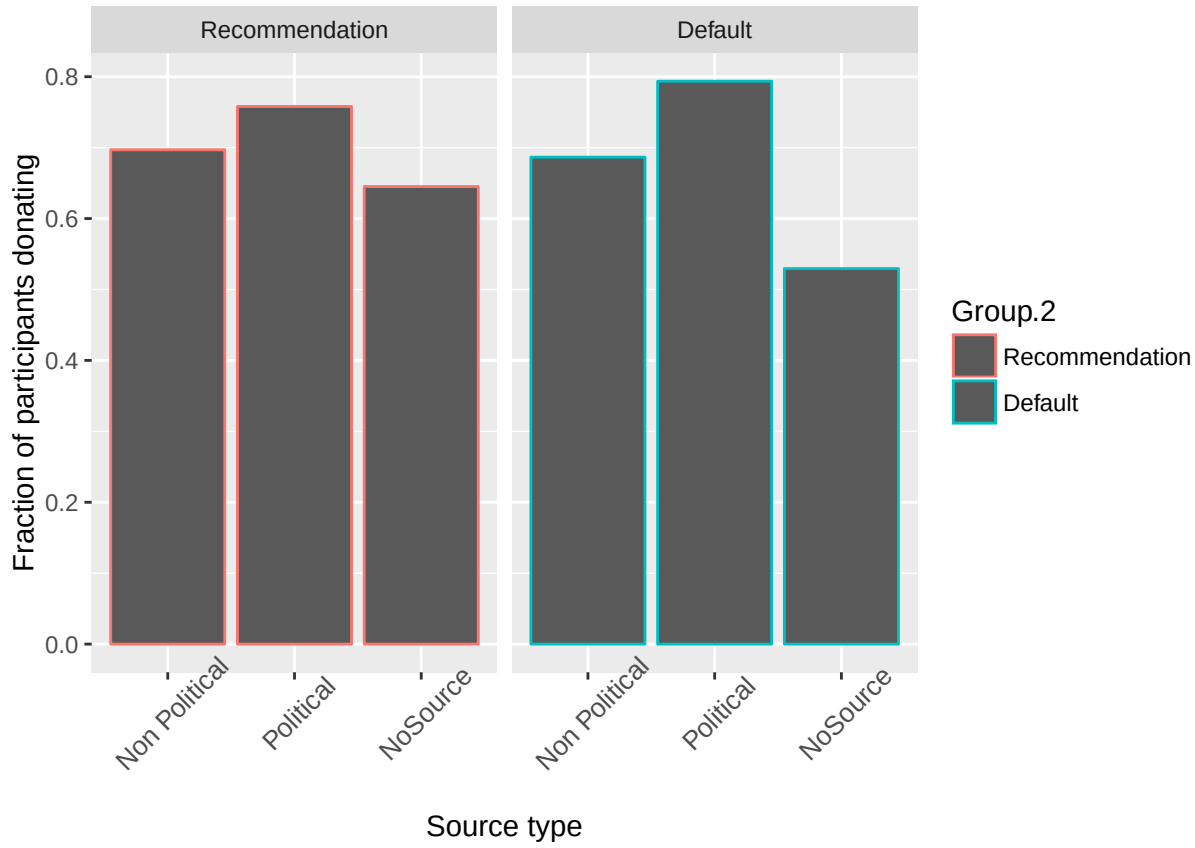
There does not seem to be anything of interest here.

```
## Warning in Ops.factor(left, right): '/' not meaningful for factors
```

```
## Warning in Ops.factor(left, right): '/' not meaningful for factors
```

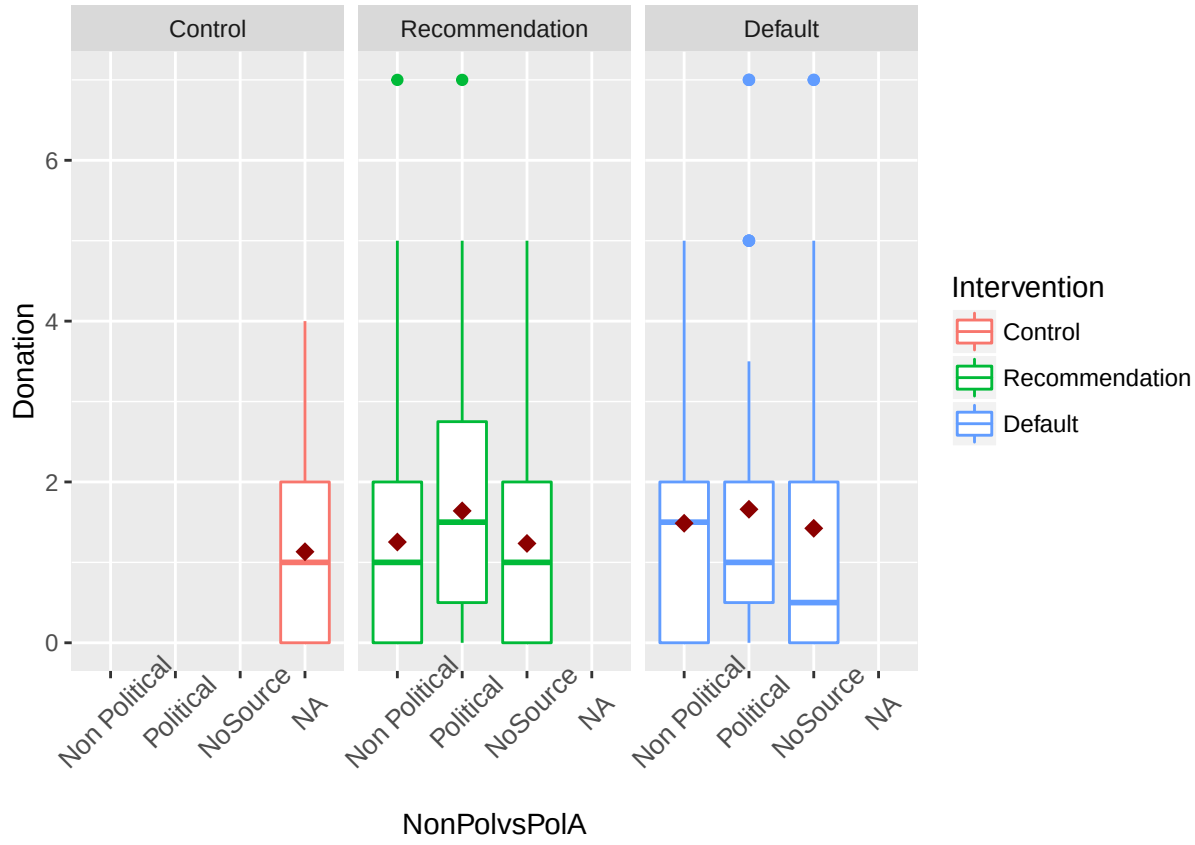



```
## Don't know how to automatically pick scale for object of type data.frame. Defaulting to continuous.
```




```
##
## Call:
## glm(formula = Donated ~ NonPolvsPolA * Intervention, family = "binomial",
##     data = df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.7766  -1.2278   0.7443   0.8672   1.1278
##
## Coefficients:
##                                          Estimate Std. Error z value
## (Intercept)                               0.83291    0.26784   3.110
## NonPolvsPolAPolitical                     0.30919    0.39960   0.774
## NonPolvsPolANoSource                     -0.23507    0.46114  -0.510
## InterventionDefault                      -0.04879    0.37563  -0.130
## NonPolvsPolAPolitical:InterventionDefault  0.25377    0.57093   0.444
## NonPolvsPolANoSource:InterventionDefault  -0.43126    0.63250  -0.682
##                                          Pr(>|z|)
## (Intercept)                               0.00187 **
## NonPolvsPolAPolitical                     0.43908
## NonPolvsPolANoSource                      0.61022
## InterventionDefault                       0.89665
## NonPolvsPolAPolitical:InterventionDefault  0.65670
## NonPolvsPolANoSource:InterventionDefault   0.49534
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 393.08  on 322  degrees of freedom
## Residual deviance: 384.39  on 317  degrees of freedom
##   (31 observations deleted due to missingness)
## AIC: 396.39
##
## Number of Fisher Scoring iterations: 4
```

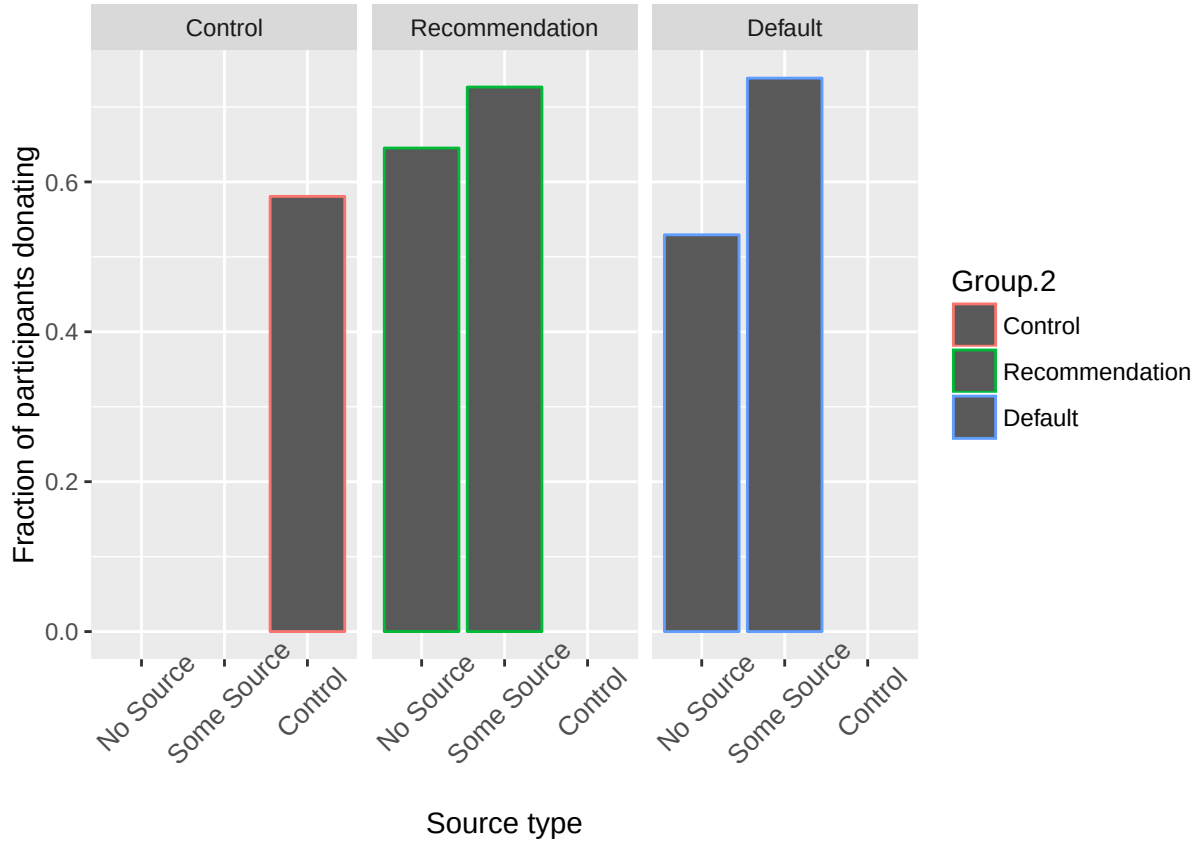



```
##
##  Kruskal-Wallis rank sum test
##
## data:  df$Donation[df$Intervention == "Recommendation"] by df$NonPolvsPolA[df$Intervention == "Recomm
## Kruskal-Wallis chi-squared = 3.3912, df = 2, p-value = 0.1835
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  df$Donation[df$Intervention == "Default"] by df$NonPolvsPolA[df$Intervention == "Default"]
## Kruskal-Wallis chi-squared = 2.7509, df = 2, p-value = 0.2527
```

The logistic regression does not produce any significant predictors. Neither do the Kruskal Wallis tests for the respective interventions.

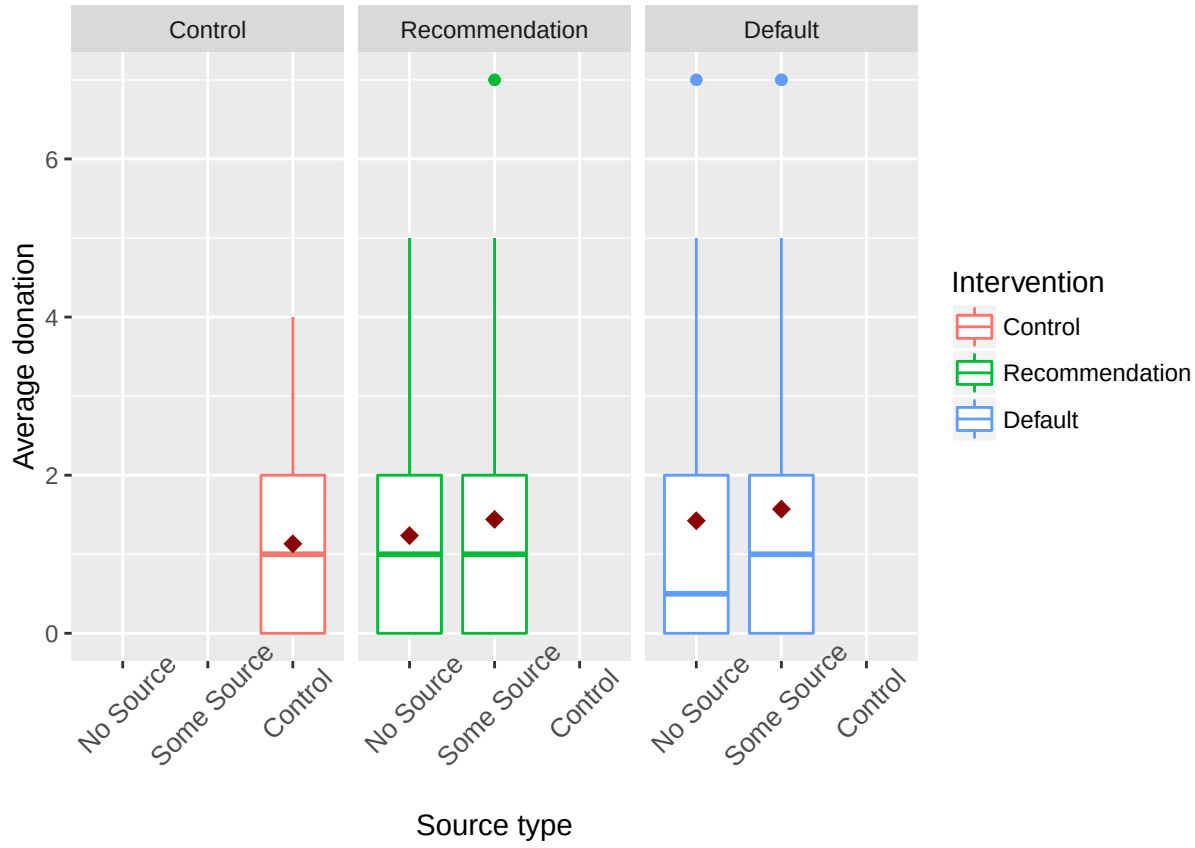
```
## Warning in Ops.factor(left, right): '/' not meaningful for factors

## Warning in Ops.factor(left, right): '/' not meaningful for factors
```




```
##
## Call:
## glm(formula = Donated ~ NosvsSome * RecvsDefD, family = "binomial",
##     data = df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6378  -1.2278   0.7787   0.7993   1.1278
##
## Coefficients:
##                                  Estimate Std. Error z value Pr(>|z|)
## (Intercept)                        0.5978     0.3754   1.593    0.111
## NosvsSomeSome Source               0.3794     0.4245   0.894    0.371
## RecvsDefDDef                      -0.4801     0.5089  -0.943    0.346
## NosvsSomeSome Source:RecvsDefDDef  0.5408     0.5815   0.930    0.352
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 393.08  on 322  degrees of freedom
## Residual deviance: 386.93  on 319  degrees of freedom
##   (31 observations deleted due to missingness)
```

```
## AIC: 394.93
##
## Number of Fisher Scoring iterations: 4
```

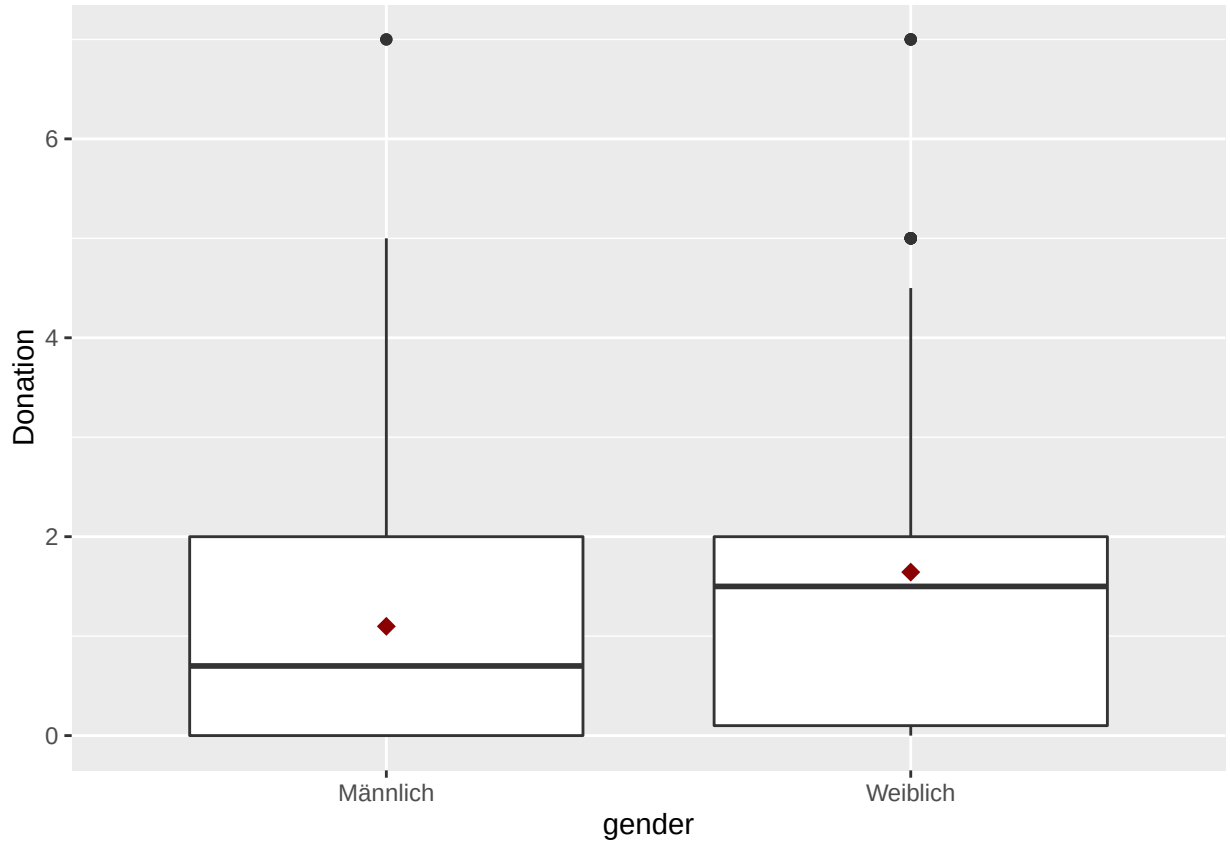
Suggests that the provision of any kind of source information increases the likelyhood to donate (Extensive margin), especially for defaults. However, the logistic estimation model suggests that there is no interaction between the provision of some source information and the type of intervention. When including the type of intervention, the sourcetype is not significant anymore.



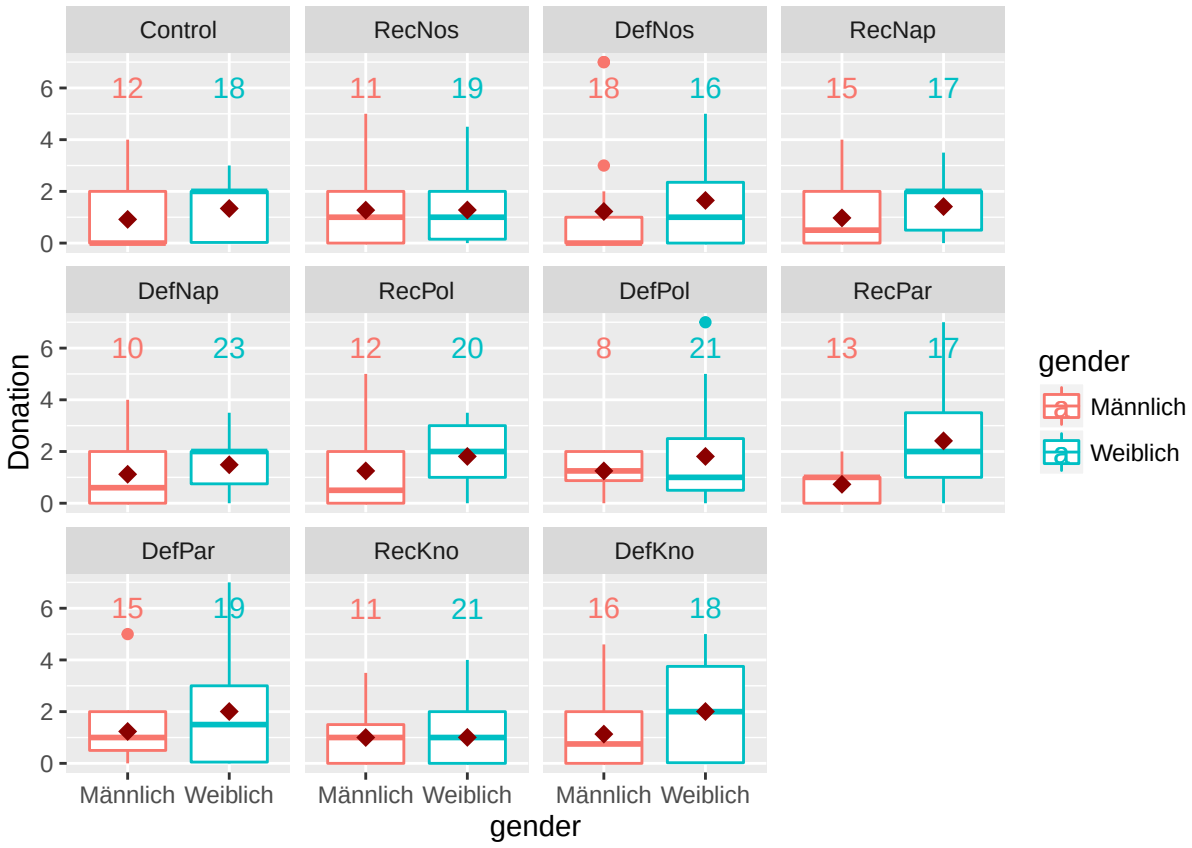
Gender differences

Average donation gender differences (by treatment)

```
## group: Keine Angabe
##   vars n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 4    3 3.56    2.5       3 3.71   0   7     7  0.1    -2.32 1.78
## ------------------------------------------------------------
## group: Männlich
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 141  1.1 1.39    0.7    0.85 1.04   0   7     7 1.81        4 0.12
## ------------------------------------------------------------
## group: Weiblich
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 209 1.64 1.55    1.5    1.43 1.48   0   7     7 1.13     1.35 0.11
```




```
##
##  Welch Two Sample t-test
##
## data:  dfsub$Donation by dfsub$gender
## t = -3.4369, df = 321.65, p-value = 0.0006658
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.8569099 -0.2330083
## sample estimates:
## mean in group Männlich mean in group Weiblich
##               1.098582               1.643541

##
##  Wilcoxon rank sum test with continuity correction
##
## data:  dfsub$Donation by dfsub$gender
## W = 11246, p-value = 0.0001193
## alternative hypothesis: true location shift is not equal to 0
```




```
##
##  Kruskal-Wallis rank sum test
##
## data:  df$Donation[df$gender == "Weiblich"] by df$treatment[df$gender == "Weiblich"]
## Kruskal-Wallis chi-squared = 10.783, df = 10, p-value = 0.3746
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  df$Donation[df$gender == "Männlich"] by df$treatment[df$gender == "Männlich"]
## Kruskal-Wallis chi-squared = 3.978, df = 10, p-value = 0.9483
```

Could be interesting. For example, when looking at Control, RecNos, RecNap, RecPol, RecPar, (And RecKno), the treatment-effect seems to be present for women, but not (or even negatively) for men. This seems to be also true for Defaults, but slightly different. However, according to two Kruskal Wallis Tests there is no treatment effect for men, and none for women.

Extensive margin (by treatment)

```
##
## Call:
## glm(formula = gender ~ treatment, family = "binomial", data = dfsub)
##
## Deviance Residuals:
```

```
##     Min       1Q   Median       3Q      Max
## -1.6049  -1.2793   0.8497   1.0108   1.2278
##
## Coefficients:
##                 Estimate Std. Error z value Pr(>|z|)
## (Intercept)       0.4055     0.3727   1.088    0.277
## treatmentRecNos   0.1411     0.5314   0.265    0.791
## treatmentDefNos  -0.5232     0.5069  -1.032    0.302
## treatmentRecNap  -0.2803     0.5142  -0.545    0.586
## treatmentDefNap   0.4274     0.5314   0.804    0.421
## treatmentRecPol   0.1054     0.5217   0.202    0.840
## treatmentDefPol   0.5596     0.5581   1.003    0.316
## treatmentRecPar  -0.1372     0.5241  -0.262    0.793
## treatmentDefPar  -0.1691     0.5081  -0.333    0.739
## treatmentRecKno   0.2412     0.5267   0.458    0.647
## treatmentDefKno  -0.2877     0.5069  -0.568    0.570
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 471.91  on 349  degrees of freedom
## Residual deviance: 463.97  on 339  degrees of freedom
## AIC: 485.97
##
## Number of Fisher Scoring iterations: 4
```

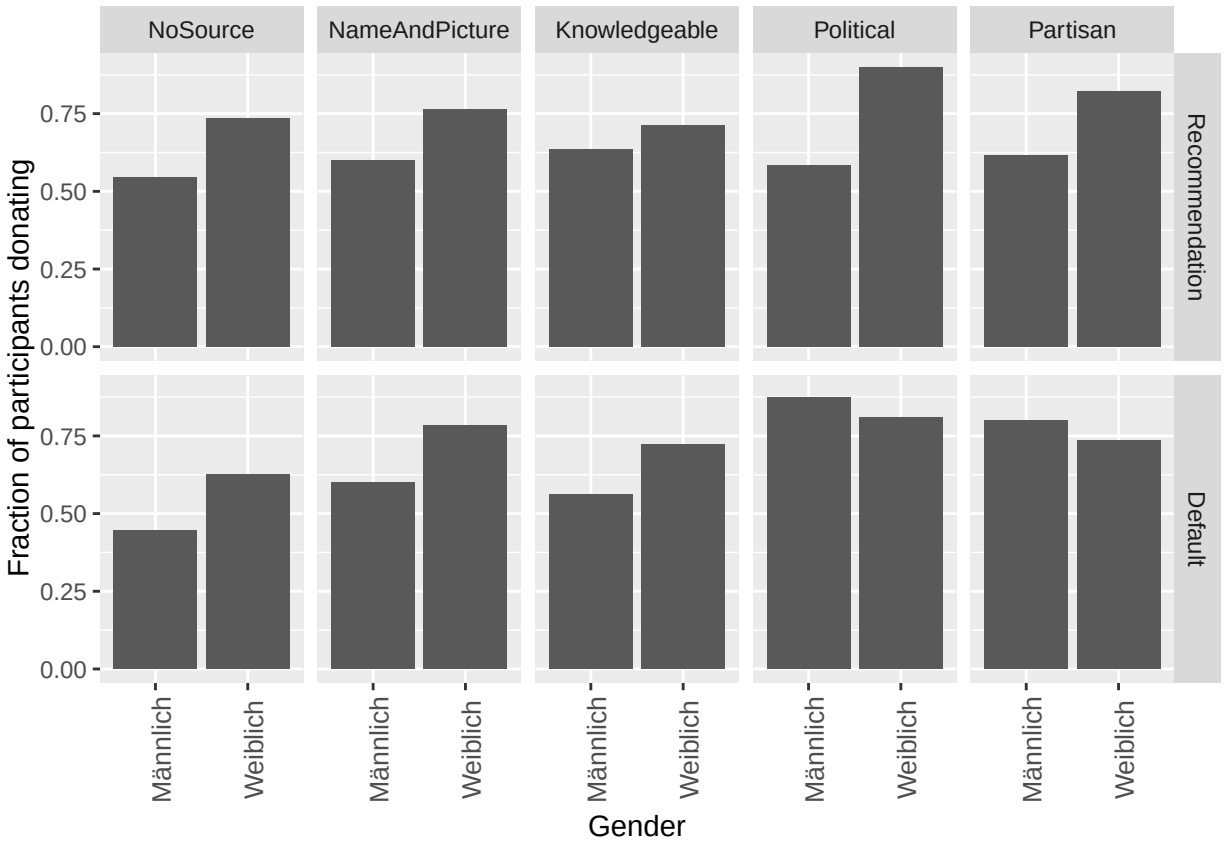
```
##
##  Pearson's Chi-squared test
##
## data:  table(factor(dfsub$gender), dfsub$treatment)
## X-squared = 7.8565, df = 10, p-value = 0.6429
```

Gender is not significantly differently represented along tratments

```
##
##  Pearson's Chi-squared test with Yates' continuity correction
##
## data:  table(dfsub$Donated, factor(dfsub$gender))
## X-squared = 10.039, df = 1, p-value = 0.001533
```

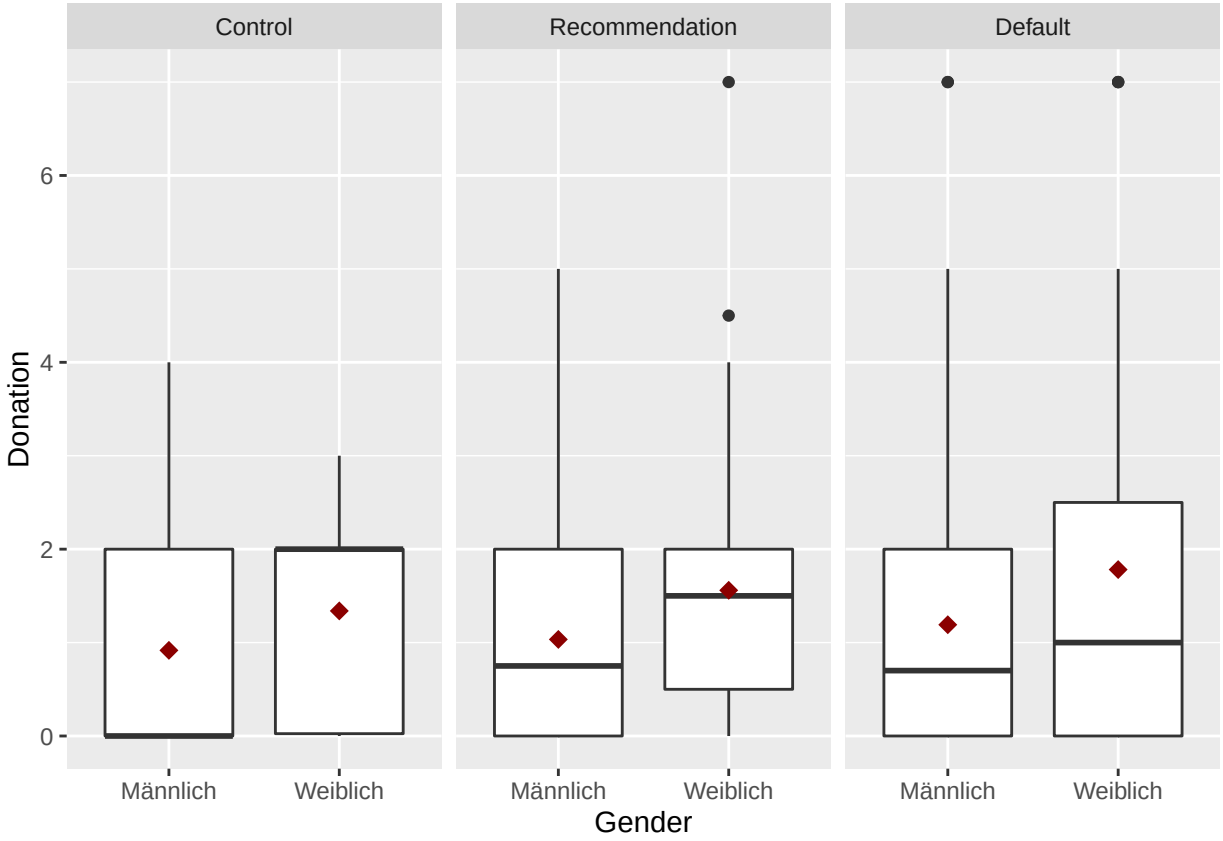
```
##
## Call:
## glm(formula = Donated ~ treatment * gender, family = "binomial",
##     data = dfsub)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.1460  -1.2557   0.6841   0.8203   1.3232
##
## Coefficients:
##                                Estimate Std. Error z value Pr(>|z|)
## (Intercept)                     -0.3365     0.5855  -0.575   0.5655
## treatmentRecNos                  0.5188     0.8423   0.616   0.5380
## treatmentDefNos                  0.1133     0.7536   0.150   0.8805
```

```
## treatmentRecNap                  0.7419     0.7878   0.942   0.3463
## treatmentDefNap                  0.7419     0.8715   0.851   0.3946
## treatmentRecPol                  0.6729     0.8281   0.813   0.4164
## treatmentDefPol                  2.2824     1.2189   1.873   0.0611 .
## treatmentRecPar                  0.8065     0.8172   0.987   0.3237
## treatmentDefPar                  1.7228     0.8715   1.977   0.0481 *
## treatmentRecKno                  0.8961     0.8577   1.045   0.2962
## treatmentDefKno                  0.5878     0.7725   0.761   0.4467
## genderWeiblich                   1.2920     0.7873   1.641   0.1008
## treatmentRecNos:genderWeiblich  -0.4447     1.1216  -0.396   0.6917
## treatmentDefNos:genderWeiblich  -0.5580     1.0543  -0.529   0.5966
## treatmentRecNap:genderWeiblich  -0.5188     1.1066  -0.469   0.6392
## treatmentDefNap:genderWeiblich  -0.4165     1.1367  -0.366   0.7140
## treatmentRecPol:genderWeiblich   0.5688     1.2321   0.462   0.6444
## treatmentDefPol:genderWeiblich  -1.7910     1.4393  -1.244   0.2134
## treatmentRecPar:genderWeiblich  -0.2215     1.1617  -0.191   0.8488
## treatmentDefPar:genderWeiblich  -1.6487     1.1436  -1.442   0.1494
## treatmentRecKno:genderWeiblich  -0.9353     1.1162  -0.838   0.4021
## treatmentDefKno:genderWeiblich  -0.5878     1.0727  -0.548   0.5837
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 430.94  on 349  degrees of freedom
## Residual deviance: 405.43  on 328  degrees of freedom
## AIC: 449.43
##
## Number of Fisher Scoring iterations: 4

## Warning in Ops.factor(left, right): '/' not meaningful for factors

## Warning in Ops.factor(left, right): '/' not meaningful for factors

## Warning in Ops.factor(left, right): '/' not meaningful for factors
```

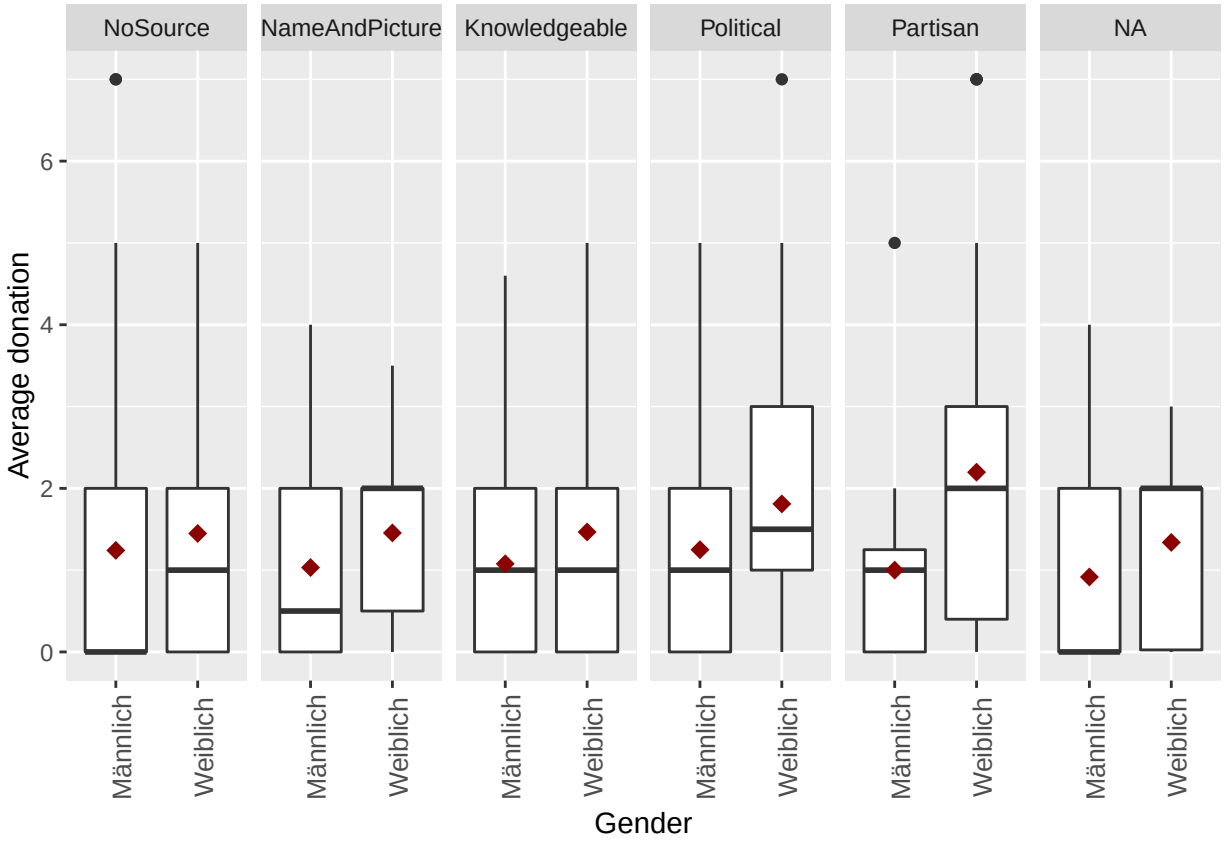


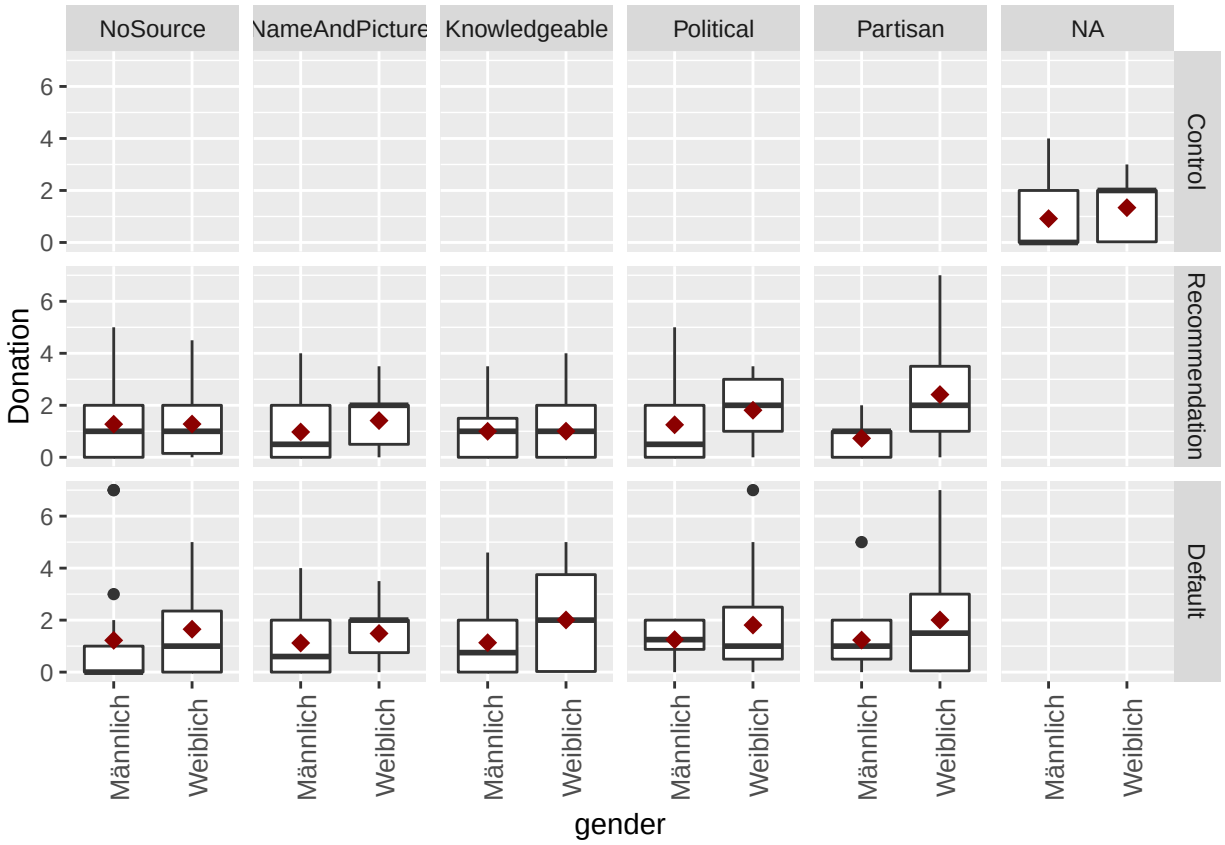
Judging based on the logistic regression, controlling for gender, contributing is significantly more likely for subjects seeing a default by a partisan-source compared to the control group, i.e. seeing no intervention and source.

Gender differences (by Intervention type)



Gender differences (by Source type)



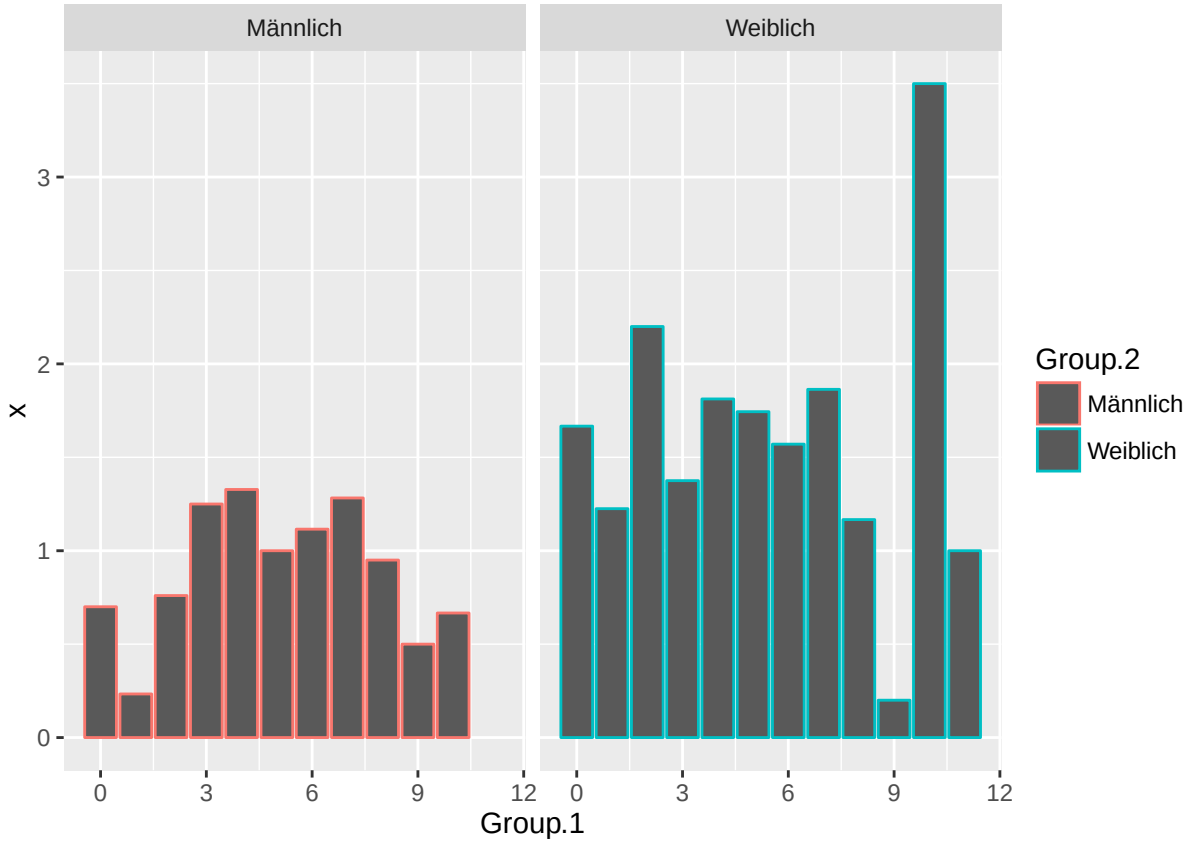


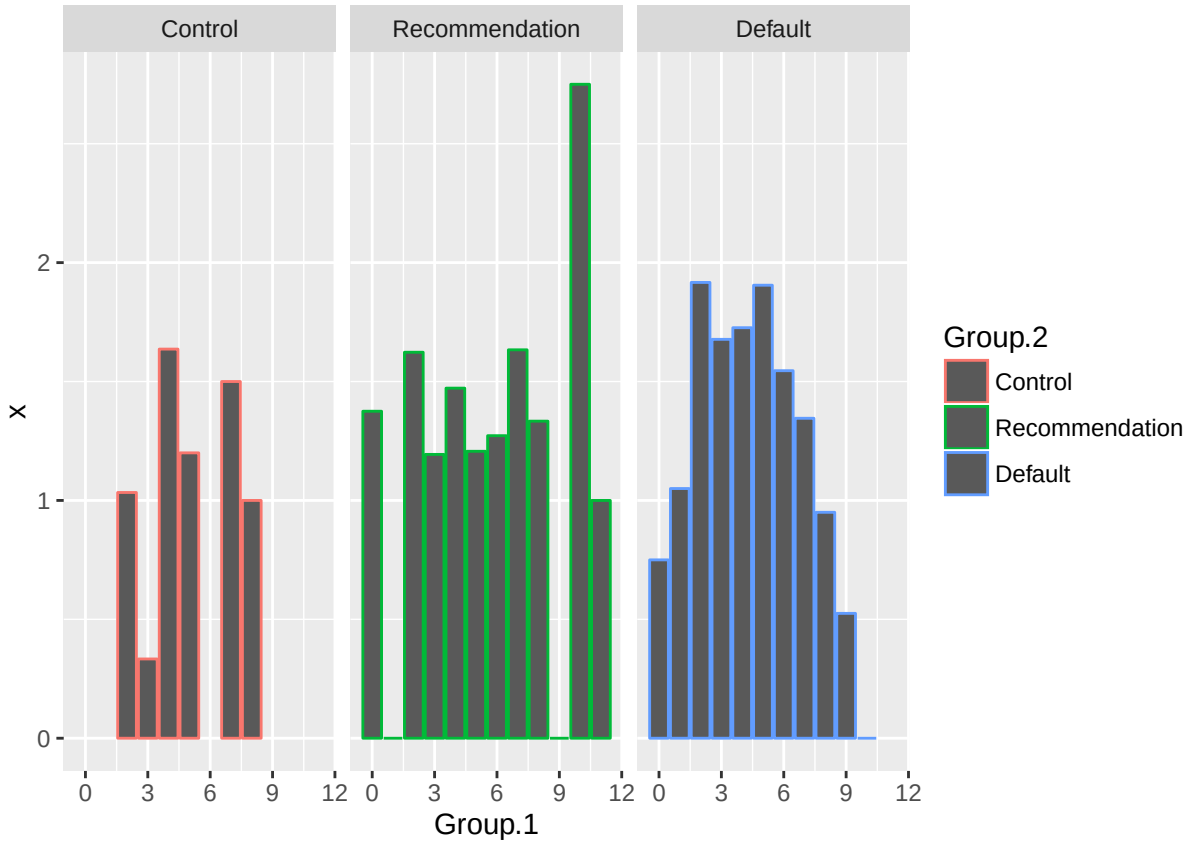
```
##
##  Kruskal-Wallis rank sum test
##
## data:  dfsub$Donation[dfsub$gender == "Weiblich" & dfsub$Intervention == "Recommendation"] by dfsub$S
## Kruskal-Wallis chi-squared = 10.733, df = 4, p-value = 0.02973

##
##  Kruskal-Wallis rank sum test
##
## data:  dfsub$Donation[dfsub$gender == "Weiblich" & dfsub$Intervention == "Default"] by dfsub$Sourcety
## Kruskal-Wallis chi-squared = 0.61934, df = 4, p-value = 0.9609

##
##  Kruskal-Wallis rank sum test
##
## data:  dfsub$Donation[dfsub$gender == "Männlich" & dfsub$Intervention == "Recommendation"] by dfsub$S
## Kruskal-Wallis chi-squared = 0.40054, df = 4, p-value = 0.9824

##
##  Kruskal-Wallis rank sum test
##
## data:  dfsub$Donation[dfsub$gender == "Männlich" & dfsub$Intervention == "Default"] by dfsub$Sourcety
## Kruskal-Wallis chi-squared = 2.8933, df = 4, p-value = 0.5758

##
## Call:
## lm(formula = Donation ~ gender * RecvsDefD * Sourcetype, data = dfsub)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.4118 -1.1200 -0.2789  0.7667  5.7778
##
## Coefficients:
##                                                    Estimate Std. Error
## (Intercept)                                        1.272727   0.459882
## genderWeiblich                                     0.006220   0.577870
## RecvsDefDDef                                      -0.050505   0.583726
## SourcetypeNameAndPicture                          -0.299394   0.605463
## SourcetypeKnowledgeable                           -0.272727   0.650371
## SourcetypePolitical                               -0.022727   0.636678
## SourcetypePartisan                                -0.541958   0.624856
## genderWeiblich:RecvsDefDDef                        0.421558   0.780114
## genderWeiblich:SourcetypeNameAndPicture            0.432211   0.791122
## genderWeiblich:SourcetypeKnowledgeable            -0.001458   0.810065
## genderWeiblich:SourcetypePolitical                 0.553780   0.802571
## genderWeiblich:SourcetypePartisan                  1.674775   0.806061
## RecvsDefDDef:SourcetypeNameAndPicture              0.197172   0.853504
## RecvsDefDDef:SourcetypeKnowledgeable               0.181755   0.835241
## RecvsDefDDef:SourcetypePolitical                   0.050505   0.908517
## RecvsDefDDef:SourcetypePartisan                    0.553069   0.821452
## genderWeiblich:RecvsDefDDef:SourcetypeNameAndPicture -0.493033   1.110994
## genderWeiblich:RecvsDefDDef:SourcetypeKnowledgeable   0.447986   1.097951
## genderWeiblich:RecvsDefDDef:SourcetypePolitical      -0.422034   1.149064
```

```
## genderWeiblich:RecvsDefDDef:SourcetypePartisan       -1.330623   1.096319
##                                                     t value Pr(>|t|)
## (Intercept)                                           2.768   0.0060 **
## genderWeiblich                                        0.011   0.9914
## RecvsDefDDef                                         -0.087   0.9311
## SourcetypeNameAndPicture                             -0.494   0.6213
## SourcetypeKnowledgeable                              -0.419   0.6753
## SourcetypePolitical                                  -0.036   0.9715
## SourcetypePartisan                                   -0.867   0.3865
## genderWeiblich:RecvsDefDDef                           0.540   0.5893
## genderWeiblich:SourcetypeNameAndPicture               0.546   0.5852
## genderWeiblich:SourcetypeKnowledgeable               -0.002   0.9986
## genderWeiblich:SourcetypePolitical                    0.690   0.4907
## genderWeiblich:SourcetypePartisan                     2.078   0.0386 *
## RecvsDefDDef:SourcetypeNameAndPicture                 0.231   0.8175
## RecvsDefDDef:SourcetypeKnowledgeable                  0.218   0.8279
## RecvsDefDDef:SourcetypePolitical                      0.056   0.9557
## RecvsDefDDef:SourcetypePartisan                       0.673   0.5013
## genderWeiblich:RecvsDefDDef:SourcetypeNameAndPicture -0.444   0.6575
## genderWeiblich:RecvsDefDDef:SourcetypeKnowledgeable   0.408   0.6835
## genderWeiblich:RecvsDefDDef:SourcetypePolitical      -0.367   0.7137
## genderWeiblich:RecvsDefDDef:SourcetypePartisan       -1.214   0.2258
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.525 on 300 degrees of freedom
##   (30 observations deleted due to missingness)
## Multiple R-squared:  0.07393,    Adjusted R-squared:  0.01528
## F-statistic: 1.261 on 19 and 300 DF,  p-value: 0.2084


##
##  Kruskal-Wallis rank sum test
##
## data:  dfsub$Donation[dfsub$gender == "Weiblich" & dfsub$Intervention == "Recommendation"] by dfsub$
## Kruskal-Wallis chi-squared = 8.9371, df = 2, p-value = 0.01146
```

Same as above, the treatment effect seems to be present for females, but only when the source of the recommendation is political or associated with the green party. For males, the treatment effect seems to be zero, or slightly negative. Kruskal Wallis Tests confirm this (threat of sequential tests, so maybe Bonferroni correction should be used).

Gender and Reactance interaction per treatment





Party preference differences

Including only "believers" in Julia Verlinden

First check if whether subjects believe we cooperated depends on treatment

```
##
##  Pearson's Chi-squared test
##
## data:  table(dfbelA$believe2, dfbelA$treatment)
## X-squared = 11.612, df = 7, p-value = 0.1141
```

```
##
## Call:
## glm(formula = believe2 ~ treatment, family = "binomial", data = dfbelA)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6835  -1.2068   0.7452   1.1010   1.2310
##
## Coefficients:
##                 Estimate Std. Error z value Pr(>|z|)
## (Intercept)      0.18232    0.34960   0.522   0.6020
## treatmentDefNap  0.79851    0.52440   1.523   0.1278
## treatmentRecPol -0.30748    0.49771  -0.618   0.5367
## treatmentDefPol -0.11333    0.51021  -0.222   0.8242
## treatmentRecPar -0.04879    0.50611  -0.096   0.9232
## treatmentDefPar -0.30010    0.49018  -0.612   0.5404
## treatmentRecKno  0.95711    0.53593   1.786   0.0741 .
## treatmentDefKno  0.29725    0.49675   0.598   0.5496
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 350.80  on 257  degrees of freedom
## Residual deviance: 338.81  on 250  degrees of freedom
## AIC: 354.81
##
## Number of Fisher Scoring iterations: 4
```

```
##
## Call:
## glm(formula = believe2 ~ Sourcetype * Intervention, family = "binomial",
##     data = dfbelA)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.6835  -1.2068   0.7452   1.1010   1.2310
##
## Coefficients:
##                                          Estimate Std. Error z value
```

```
## (Intercept)                                  0.18232    0.34960   0.522
## SourcetypeKnowledgeable                      0.95711    0.53593   1.786
## SourcetypePolitical                         -0.30748    0.49771  -0.618
## SourcetypePartisan                          -0.04879    0.50611  -0.096
## InterventionDefault                          0.79851    0.52440   1.523
## SourcetypeKnowledgeable:InterventionDefault -1.45837    0.75136  -1.941
## SourcetypePolitical:InterventionDefault     -0.60435    0.73388  -0.823
## SourcetypePartisan:InterventionDefault      -1.04982    0.72594  -1.446
##                                             Pr(>|z|)
## (Intercept)                                   0.6020
## SourcetypeKnowledgeable                       0.0741 .
## SourcetypePolitical                           0.5367
## SourcetypePartisan                            0.9232
## InterventionDefault                           0.1278
## SourcetypeKnowledgeable:InterventionDefault   0.0523 .
## SourcetypePolitical:InterventionDefault       0.4102
## SourcetypePartisan:InterventionDefault        0.1481
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 350.80  on 257  degrees of freedom
## Residual deviance: 338.81  on 250  degrees of freedom
## AIC: 354.81
##
## Number of Fisher Scoring iterations: 4
```

Potentially interesting that subjects are more likely to not believe we cooperated with Julia when they are confronted with source information of a knowledgeable actor, but that this positive effect is weakened (negative interaction) when provided for a default, instead of a recommendation.

What explains the probability that people believe we cooperated with Julia?

```
##
##  Pearson's Chi-squared test with simulated p-value (based on 2000
##  replicates)
##
## data:  table(dfbelA$believe2, dfbelA$gender)
## X-squared = 2.9328, df = NA, p-value = 0.2724
```

```
## Warning in chisq.test(table(dfbelA$believe2, dfbelA$trustPol)): Chi-squared
## approximation may be incorrect
```

```
##
##  Pearson's Chi-squared test
##
## data:  table(dfbelA$believe2, dfbelA$trustPol)
## X-squared = NaN, df = 4, p-value = NA
```

```
##
##  Pearson's Chi-squared test with simulated p-value (based on 2000
```

```
##  replicates)
##
## data:  table(dfbelA$believe2, dfbelA$party)
## X-squared = 1.8762, df = NA, p-value = 0.986
```

```
##
## Call:
## glm(formula = believe2 ~ Reactance, family = "binomial", data = dfbelA)
##
## Deviance Residuals:
##    Min      1Q  Median      3Q     Max
## -1.333  -1.318   1.036   1.043   1.057
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  0.359080   0.298481   1.203    0.229
## Reactance   -0.006874   0.060777  -0.113    0.910
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 350.80  on 257  degrees of freedom
## Residual deviance: 350.78  on 256  degrees of freedom
## AIC: 354.78
##
## Number of Fisher Scoring iterations: 4
```

```
##
## Call:
## glm(formula = believe2 ~ demandEffectD, family = "binomial",
##     data = dfbelA)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.3877  -1.3018   0.9808   1.0579   1.0579
##
## Coefficients:
##                     Estimate Std. Error z value Pr(>|z|)
## (Intercept)           0.2877     0.1418   2.028   0.0425 *
## demandEffectDDemEff   0.1942     0.3117   0.623   0.5333
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 350.8  on 257  degrees of freedom
## Residual deviance: 350.4  on 256  degrees of freedom
## AIC: 354.4
##
## Number of Fisher Scoring iterations: 4
```

Whether or not respondents believe us that we cooperated with Julia does not depend on gender (Chi^2Test with simulated p-values), trust in Pol (missing observations), party affiliation (Chi^2Test with simulated p-values), Reactance score (treated as metric in a logistic regression), experiencing a demand effect (dummy in a logistic

regression). Note that I did not include treatment-IVs, meaning I assume that the respective IV is independent of treatment (i.e. not significantly different among treatments).

```
##
##  Pearson's Chi-squared test with simulated p-value (based on 2000
##  replicates)
##
## data:  df$demandEffectD and df$treatment
## X-squared = 13.478, df = NA, p-value = 0.2129
```

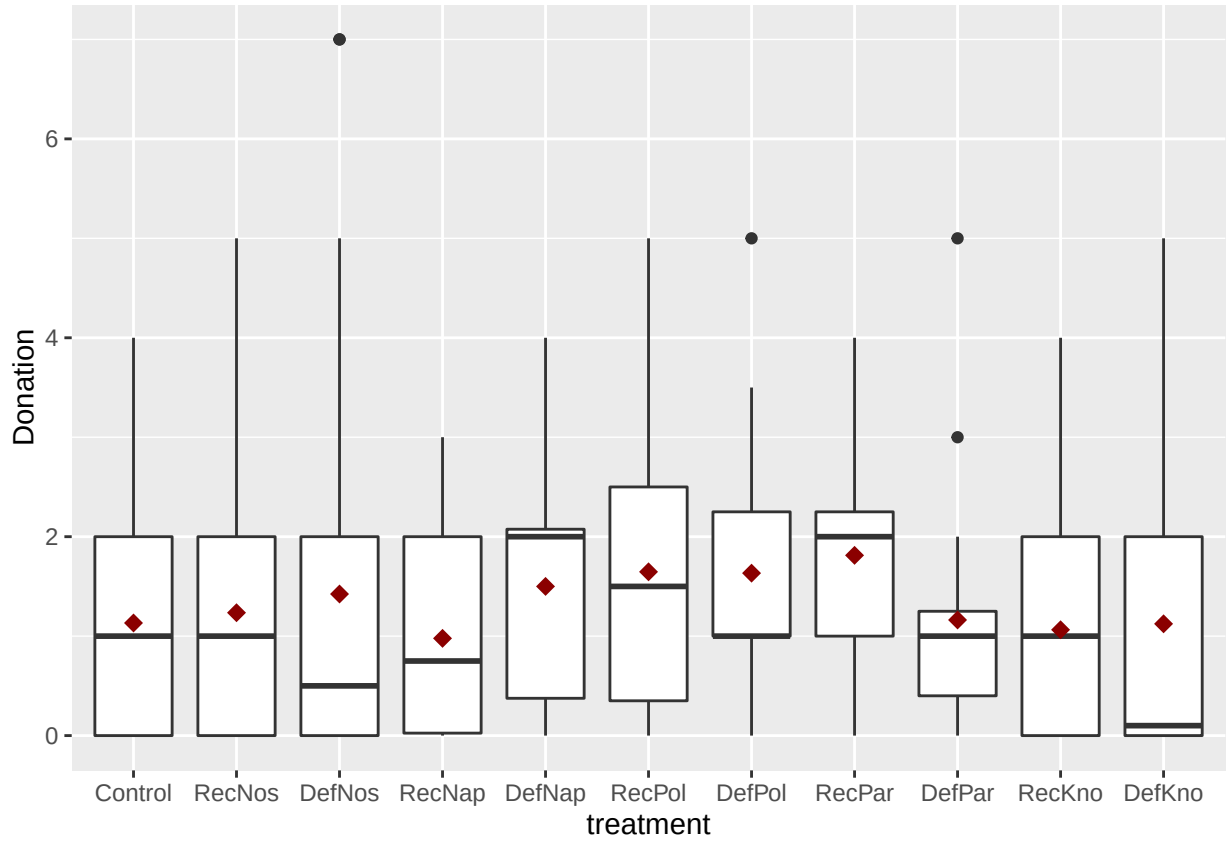
```
##
## Call:
## glm(formula = demandEffectD ~ treatment, family = "binomial",
##     data = df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -0.9331  -0.7842  -0.5931  -0.4366   2.1899
##
## Coefficients:
##                 Estimate Std. Error z value Pr(>|z|)
## (Intercept)     -1.64866    0.48833  -3.376 0.000735 ***
## treatmentRecNos  0.75484    0.62851   1.201 0.229752
## treatmentDefNos  0.29873    0.64680   0.462 0.644183
## treatmentRecNap  0.33647    0.64790   0.519 0.603535
## treatmentDefNap -0.65393    0.77780  -0.841 0.400497
## treatmentRecPol -0.03774    0.68956  -0.055 0.956353
## treatmentDefPol  0.30492    0.66978   0.455 0.648923
## treatmentRecPar -0.54857    0.78024  -0.703 0.482009
## treatmentDefPar  0.62701    0.62416   1.005 0.315106
## treatmentRecKno  0.81575    0.61801   1.320 0.186850
## treatmentDefKno  1.04252    0.60601   1.720 0.085377 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 368.23  on 353  degrees of freedom
## Residual deviance: 354.27  on 343  degrees of freedom
## AIC: 376.27
##
## Number of Fisher Scoring iterations: 4
```

According to the Chi²Test, whether or not people experienced an experimenter demand effect does not depend on treatment. According to the logistic regression, whether or not people experienced an experimenter demand effect depends on treatment, but only slgihtly significant for DefKno.

Check average donations by treatment only for those that believed we cooperated with Julia Verlinden

```
## group: Control
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
```

```
## 1    1 31 1.13 1.15      1    1.02 1.48   0   4     4 0.42    -0.94 0.21
## ------------------------------------------------------------
## group: RecNos
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 31 1.24 1.39      1    0.99 1.48   0   5     5 1.14     0.52 0.25
## ------------------------------------------------------------
## group: DefNos
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 34 1.42 2.08    0.5    1.05 0.74   0   7     7 1.46     0.93 0.36
## ------------------------------------------------------------
## group: RecNap
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 18 0.98 0.96   0.75    0.91 1.11   0   3     3  0.5    -1.17 0.23
## ------------------------------------------------------------
## group: DefNap
##   vars  n mean  sd median trimmed  mad min max range skew kurtosis   se
## 1    1 24  1.5 1.2      2    1.43 1.48   0   4     4 0.18    -1.09 0.25
## ------------------------------------------------------------
## group: RecPol
##   vars  n mean  sd median trimmed  mad min max range skew kurtosis   se
## 1    1 15 1.65 1.5    1.5    1.52 2.22   0   5     5  0.6    -0.66 0.39
## ------------------------------------------------------------
## group: DefPol
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 15 1.63 1.38      1     1.5 1.48   0   5     5 0.92    -0.05 0.36
## ------------------------------------------------------------
## group: RecPar
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 16 1.81 1.12      2    1.79 1.48   0   4     4 0.34       -1 0.28
## ------------------------------------------------------------
## group: DefPar
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 16 1.16 1.32      1    0.97 1.04   0   5     5 1.55     1.87 0.33
## ------------------------------------------------------------
## group: RecKno
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 25 1.06 1.14      1    0.91 1.48   0   4     4 0.92     0.02 0.23
## ------------------------------------------------------------
## group: DefKno
##   vars  n mean  sd median trimmed  mad min max range skew kurtosis   se
## 1    1 21 1.12 1.5    0.1    0.86 0.15   0   5     5 1.09     0.11 0.33
```




```
##
##  Kruskal-Wallis rank sum test
##
## data:  dfbel$Donation by dfbel$treatment
## Kruskal-Wallis chi-squared = 11.22, df = 10, p-value = 0.3406
```

Kruskal Wallis test is not significant. This means that there are also no significant differences in Donations for those that believed we cooperated with Julia Verlinden.

Check extensive margin by treatment only for those that believed we cooperated with Julia Verlinden

```
##
##               Control RecNos DefNos RecNap DefNap RecPol DefPol RecPar
##   Not donated      13     11      16      5      6      4      2      1
##   Donated          18     20      18     13     18     11     13     15
##
##               DefPar RecKno DefKno
##   Not donated      3      8     10
##   Donated         13     17     11
```

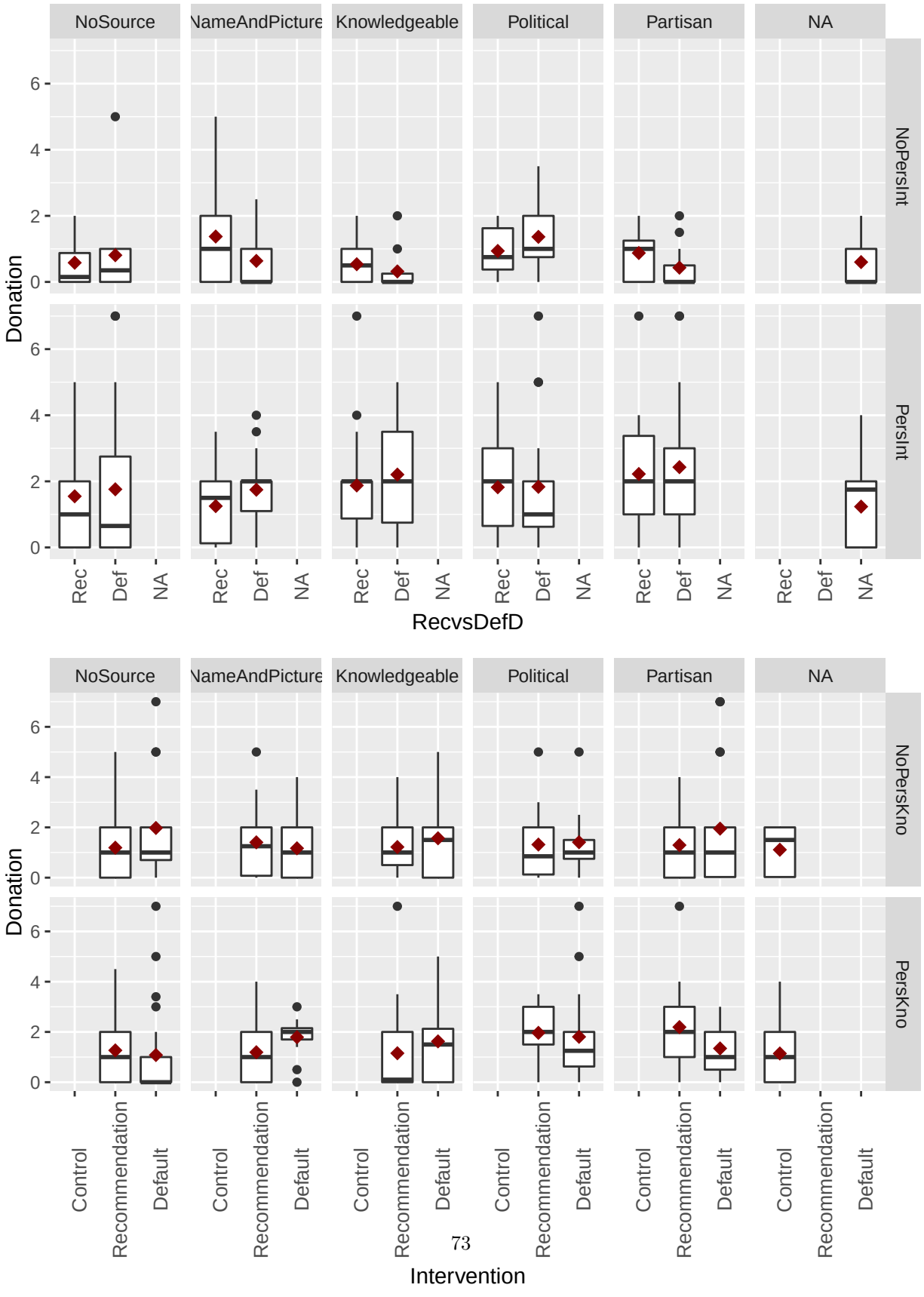
```
##
## Call:
## glm(formula = Donated ~ treatment, family = "binomial", data = dfbel)
```

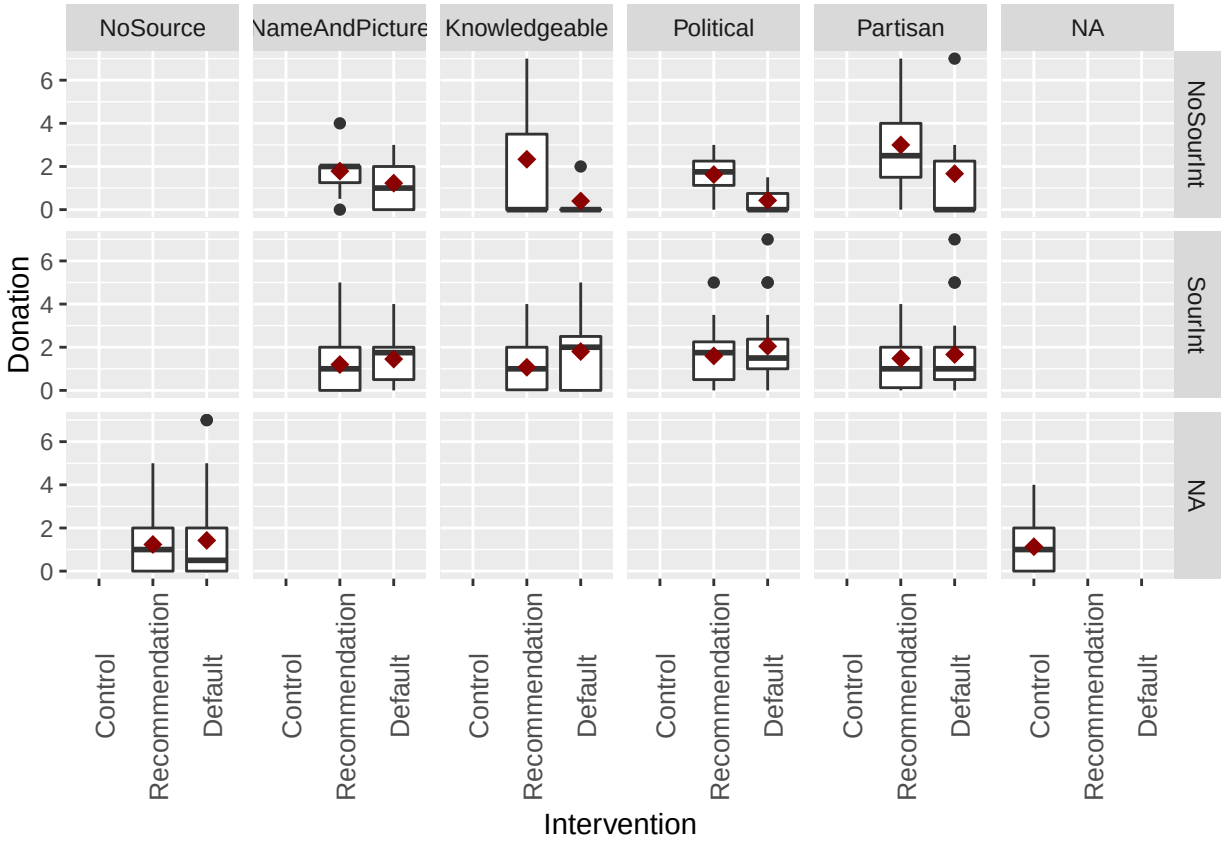
```
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.3548  -1.2278   0.7585   0.9362   1.1372
##
## Coefficients:
##                 Estimate Std. Error z value Pr(>|z|)
## (Intercept)       0.3254     0.3640   0.894   0.3713
## treatmentRecNos   0.2724     0.5229   0.521   0.6024
## treatmentDefNos  -0.2076     0.5005  -0.415   0.6783
## treatmentRecNap   0.6301     0.6398   0.985   0.3247
## treatmentDefNap   0.7732     0.5956   1.298   0.1942
## treatmentRecPol   0.6862     0.6880   0.997   0.3186
## treatmentDefPol   1.5464     0.8423   1.836   0.0664 .
## treatmentRecPar   2.3826     1.0950   2.176   0.0296 *
## treatmentDefPar   1.1409     0.7367   1.549   0.1215
## treatmentRecKno   0.4283     0.5624   0.762   0.4463
## treatmentDefKno  -0.2301     0.5687  -0.405   0.6857
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 308.84  on 245  degrees of freedom
## Residual deviance: 290.28  on 235  degrees of freedom
## AIC: 312.28
##
## Number of Fisher Scoring iterations: 5


##
##  Pearson's Chi-squared test with simulated p-value (based on 2000
##  replicates)
##
## data:  table(dfbel$Donated, dfbel$treatment)
## X-squared = 16.896, df = NA, p-value = 0.06247
```

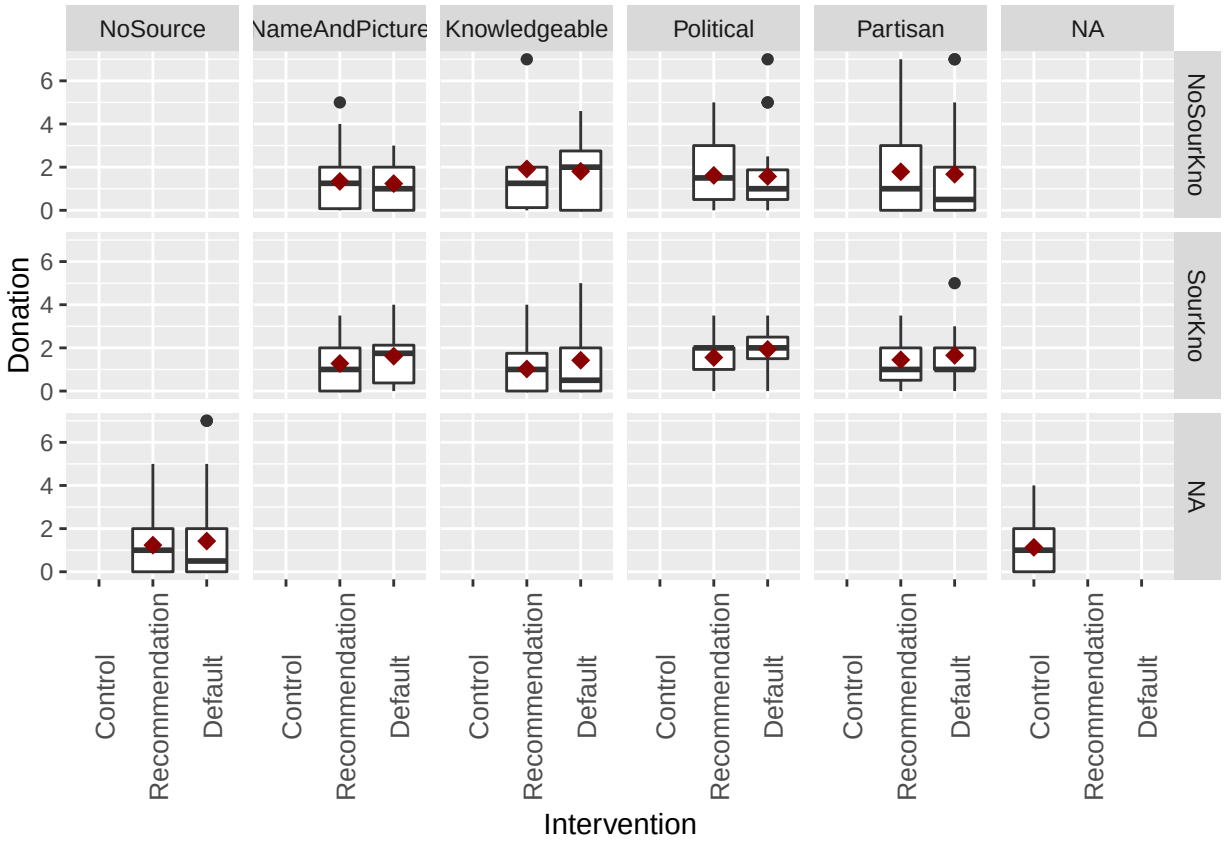
Among those that believed we cooperated with Julia Verlinden, those who were confronted with a DefPol and RecPar were more likely than those in the control group to donate. Mind, however, that there are not much observations in the respective groups (not much variation).

Treatment interactions with...

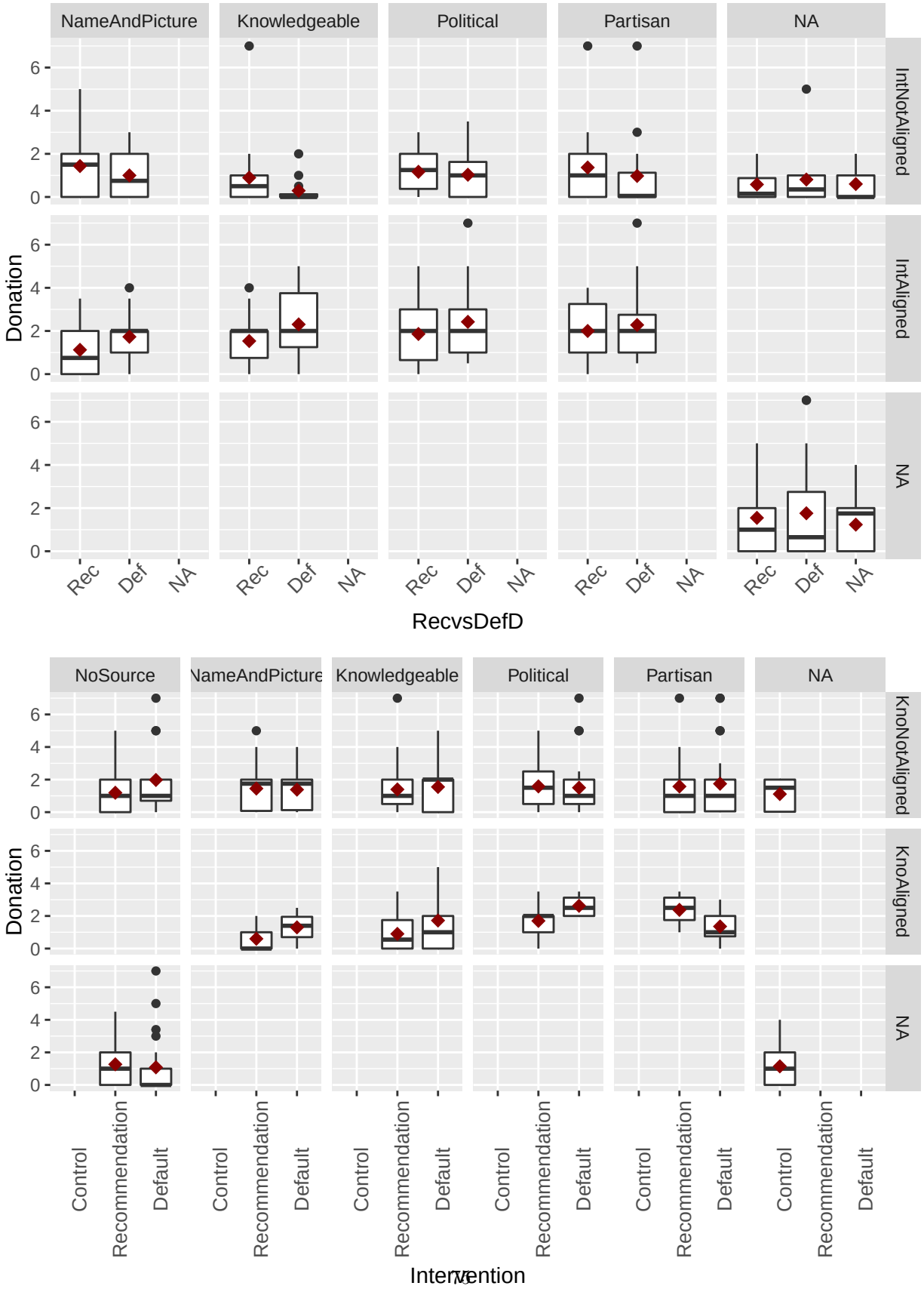
... personal Interest and Knowledge w.r.t climate protection




NoSource
NameAndPicture
Knowledgeable
Political
Partisan
NA
NoSourInt
SourInt
NA
Donation
0
2
4
6
Control
Recommendation
Default
Intervention


NoSource
NameAndPicture
Knowledgeable
Political
Partisan
NA
NoSourKno
SourKno
NA
Donation
0
2
4
6
Control
Recommendation
Default
Intervention

. . . alignment of interest/ knowledge between subject and the subject's perception of the source



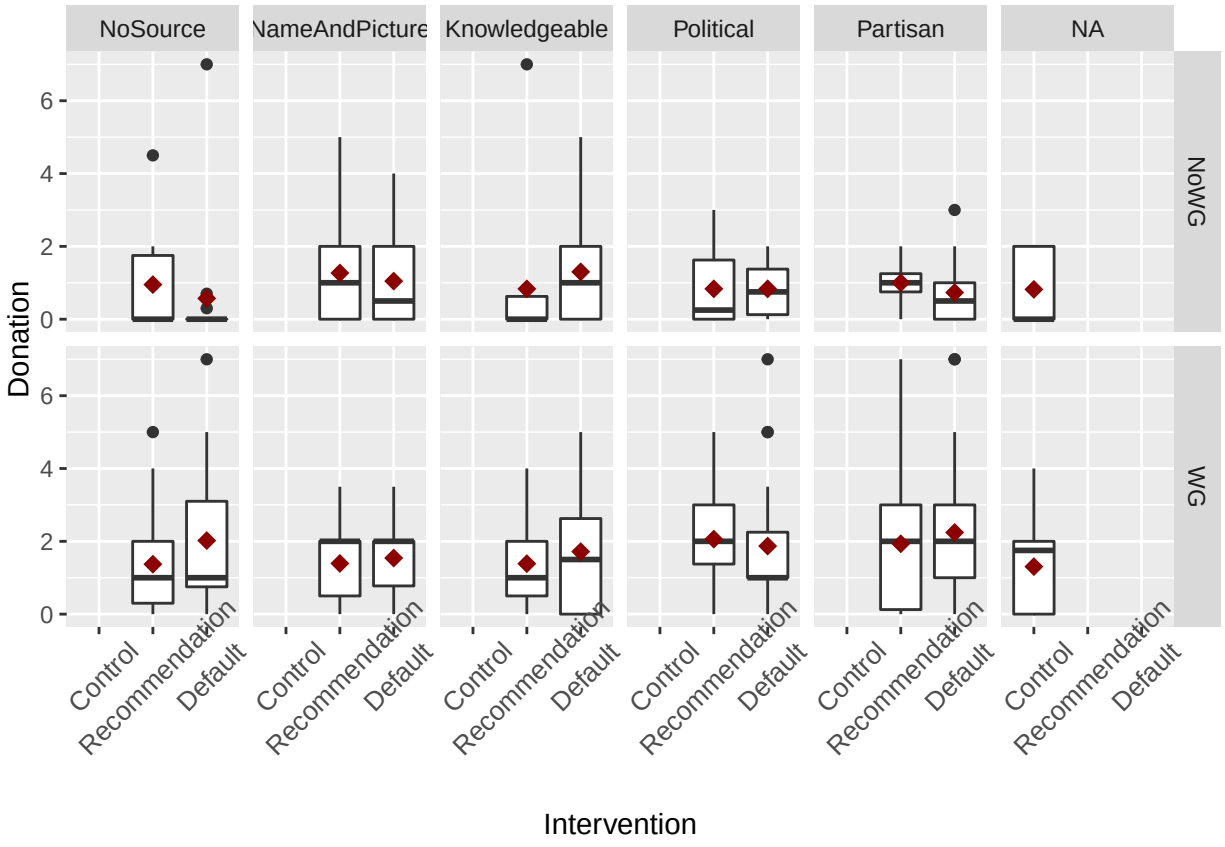
```
##
## Call:
## lm(formula = Donation ~ RecvsDefD + SourcetypeD * intAlign +
##     knowAlign, data = df)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.1577 -1.1387 -0.1771  0.7813  6.3092
##
## Coefficients:
##                                            Estimate Std. Error t value
## (Intercept)                                 1.21867    0.25269   4.823
## RecvsDefDDef                                0.07733    0.18417   0.420
## SourcetypeDKnowledgeable                   -0.52786    0.36386  -1.451
## SourcetypeDPolitical                       -0.15728    0.36613  -0.430
## SourcetypeDPartisan                        -0.06464    0.35606  -0.182
## intAlignIntAligned                          0.27035    0.36637   0.738
## knowAlignKnoAligned                        -0.22802    0.23801  -0.958
## SourcetypeDKnowledgeable:intAlignIntAligned  1.07103    0.50979   2.101
## SourcetypeDPolitical:intAlignIntAligned      0.76799    0.52441   1.464
## SourcetypeDPartisan:intAlignIntAligned       0.73333    0.51487   1.424
##                                            Pr(>|t|)
## (Intercept)                                2.47e-06 ***
## RecvsDefDDef                                 0.6749
## SourcetypeDKnowledgeable                     0.1481
## SourcetypeDPolitical                         0.6679
## SourcetypeDPartisan                          0.8561
## intAlignIntAligned                           0.4613
## knowAlignKnoAligned                          0.3390
## SourcetypeDKnowledgeable:intAlignIntAligned  0.0367 *
## SourcetypeDPolitical:intAlignIntAligned      0.1443
## SourcetypeDPartisan:intAlignIntAligned       0.1556
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.457 on 248 degrees of freedom
##   (96 observations deleted due to missingness)
## Multiple R-squared:  0.1154, Adjusted R-squared:  0.08327
## F-statistic: 3.594 on 9 and 248 DF,  p-value: 0.0003173
```

... warm Glow feeling/ feeling of guilt when (not) protecting the climate

```
## group: NoWG
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 126 0.93 1.38   0.05    0.67 0.07   0   7     7 2.09     5.23 0.12
## ------------------------------------------------------------
## group: WG
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis  se
## 1    1 228 1.72 1.56   1.75    1.51 1.56   0   7     7 1.16     1.42 0.1
```

```
##
##               NoWG  WG
##   Not donated   63  46
```

```
##   Donated       63 182

##
##  Pearson's Chi-squared test with Yates' continuity correction
##
## data:  table(df$Donated, df$warmGlowD)
## X-squared = 32.489, df = 1, p-value = 1.199e-08
```




```
##
## Call:
## lm(formula = Donation ~ RecvsDefD + Sourcetype + warmGlowD, data = df)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.9814 -0.9603 -0.5160  0.5631  6.1941
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)                0.77839    0.23650   3.291  0.00111 **
## RecvsDefDDef               0.09674    0.17119   0.565  0.57240
## SourcetypeNameAndPicture   0.08515    0.26859   0.317  0.75142
## SourcetypeKnowledgeable    0.02749    0.26726   0.103  0.91815
## SourcetypePolitical        0.23765    0.27401   0.867  0.38643
## SourcetypePartisan         0.30590    0.27031   1.132  0.25863
## warmGlowDWG                0.80037    0.17980   4.451 1.18e-05 ***
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.534 on 316 degrees of freedom
##   (31 observations deleted due to missingness)
## Multiple R-squared:  0.0688, Adjusted R-squared:  0.05112
## F-statistic: 3.891 on 6 and 316 DF,  p-value: 0.0009162
```

```
##
## Call:
## glm(formula = Donated ~ RecvsDefD + Sourcetype + warmGlowD, family = "binomial",
##     data = df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.0852  -0.9775   0.5610   0.7915   1.4583
##
## Coefficients:
##                           Estimate Std. Error z value Pr(>|z|)
## (Intercept)               -0.4903     0.3374  -1.453   0.1462
## RecvsDefDDef              -0.1493     0.2625  -0.569   0.5694
## SourcetypeNameAndPicture   0.7693     0.3969   1.938   0.0526 .
## SourcetypeKnowledgeable    0.3511     0.3853   0.911   0.3621
## SourcetypePolitical        1.0531     0.4317   2.440   0.0147 *
## SourcetypePartisan         0.7876     0.4073   1.934   0.0531 .
## warmGlowDWG                1.4904     0.2652   5.619 1.92e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 393.08  on 322  degrees of freedom
## Residual deviance: 351.54  on 316  degrees of freedom
##   (31 observations deleted due to missingness)
## AIC: 365.54
##
## Number of Fisher Scoring iterations: 4
```

... judging carbon offsetting as a efficient way to protect the climate

```
##
##   0   1   2   3   4
##  34  55 140 102  23
```

```
##
##     Control RecNos DefNos RecNap DefNap RecPol DefPol RecPar DefPar RecKno
##   0       4      4      3      5      2      3      4      2      2      2
##   1       7      1      4      2      6      8      5      2      5      9
##   2       9     12     18     11     13     11     10     17     14     10
##   3       7     12      9     13     10      6      7      7     12     10
##   4       4      2      0      2      2      4      3      2      1      2
##
##     DefKno
```

```
##   0      3
##   1      6
##   2     15
##   3      9
##   4      1
```

```
## Warning in chisq.test(table(df$retireEffic, df$treatment)): Chi-squared
## approximation may be incorrect
```

```
##
##  Pearson's Chi-squared test
##
## data:  table(df$retireEffic, df$treatment)
## X-squared = 36.118, df = 40, p-value = 0.6457
```

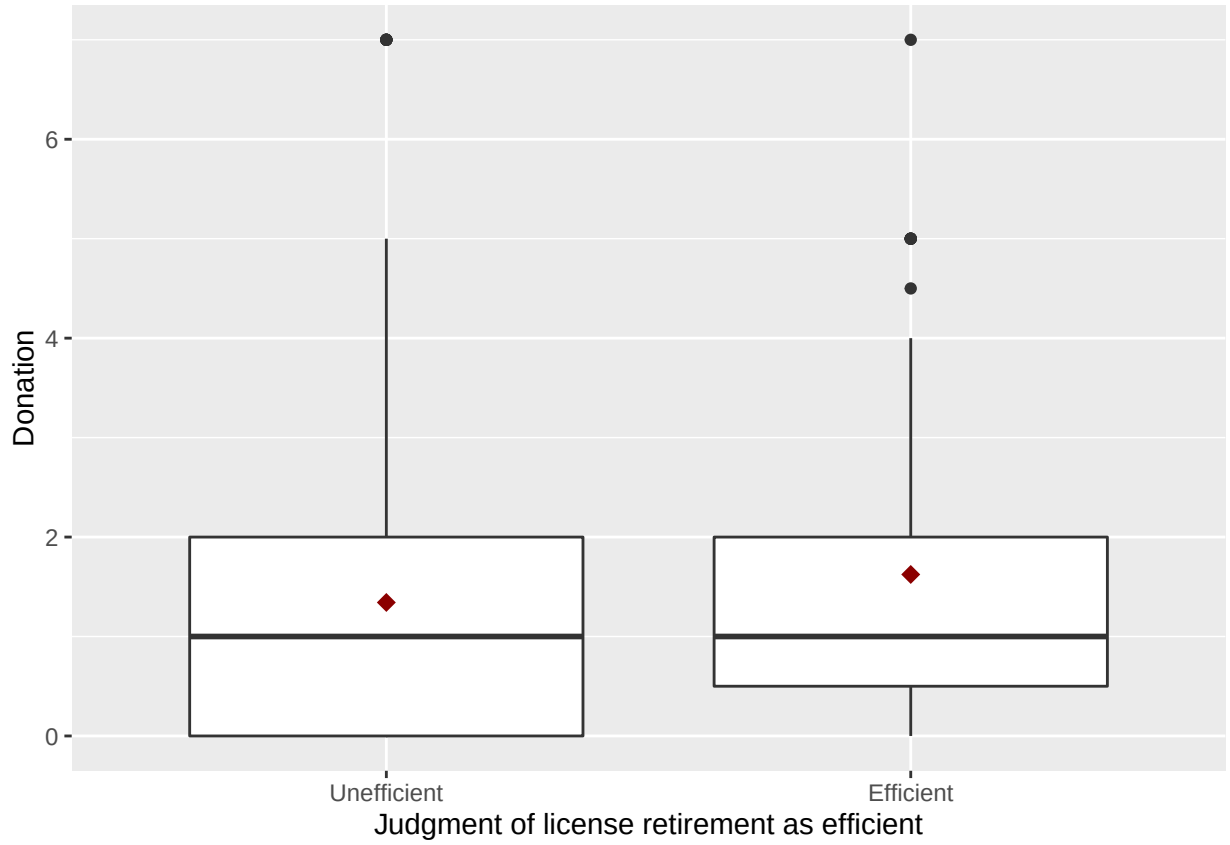
```
##
## Call:
## glm(formula = retireEffD ~ treatment, family = "binomial", data = df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.1010  -0.9508  -0.8446   1.3867   1.6304
##
## Coefficients:
##                 Estimate Std. Error z value Pr(>|z|)
## (Intercept)     -0.59784    0.37538  -1.593    0.111
## treatmentRecNos  0.40368    0.52073   0.775    0.438
## treatmentDefNos -0.42381    0.54039  -0.784    0.433
## treatmentRecNap  0.41552    0.51296   0.810    0.418
## treatmentDefNap  0.03822    0.52140   0.073    0.942
## treatmentRecPol -0.19062    0.53513  -0.356    0.722
## treatmentDefPol -0.04402    0.54179  -0.081    0.935
## treatmentRecPar -0.24946    0.54739  -0.456    0.649
## treatmentDefPar  0.11826    0.51522   0.230    0.818
## treatmentRecKno  0.03822    0.52140   0.073    0.942
## treatmentDefKno -0.27763    0.53158  -0.522    0.601
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 459.74  on 353  degrees of freedom
## Residual deviance: 454.50  on 343  degrees of freedom
## AIC: 476.5
##
## Number of Fisher Scoring iterations: 4
```

Judgment (dummy) is independent of treatment

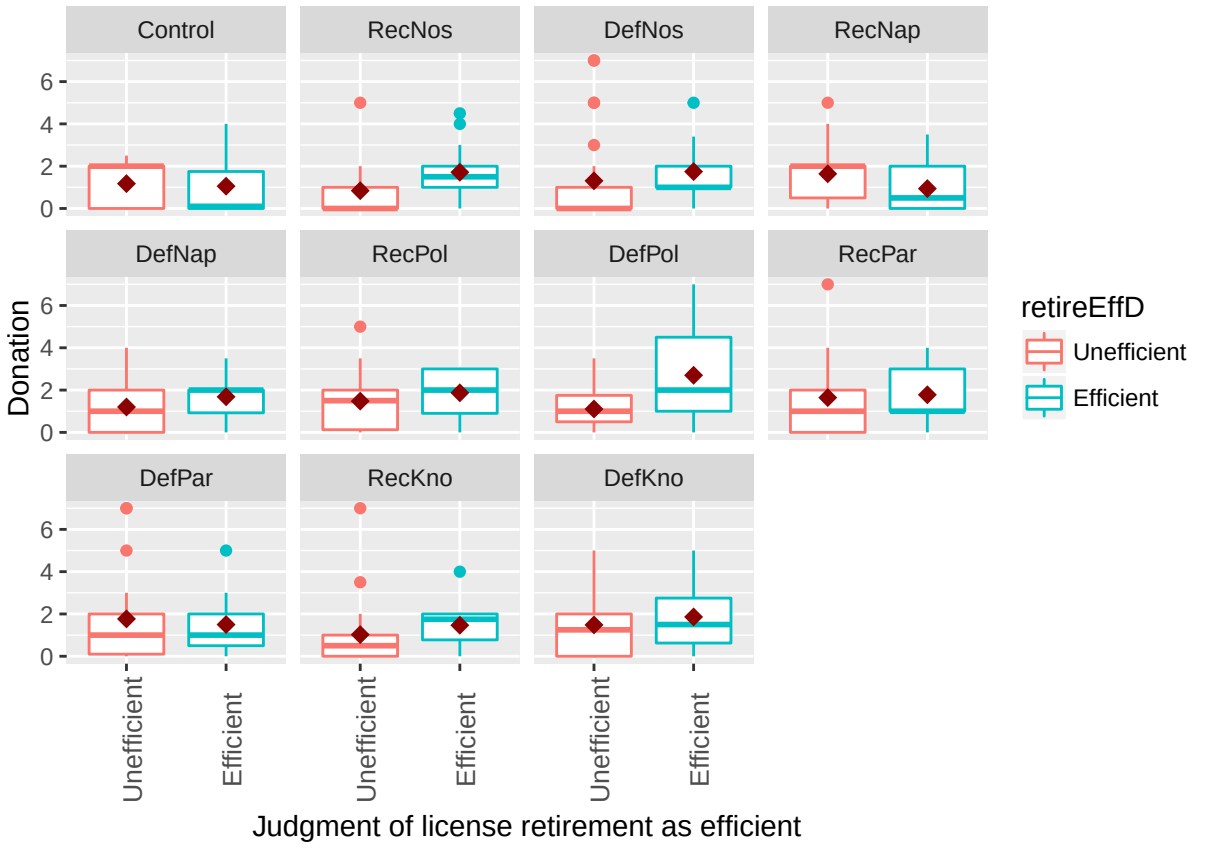
Average donation efficiency-judgment differences (by treatment)

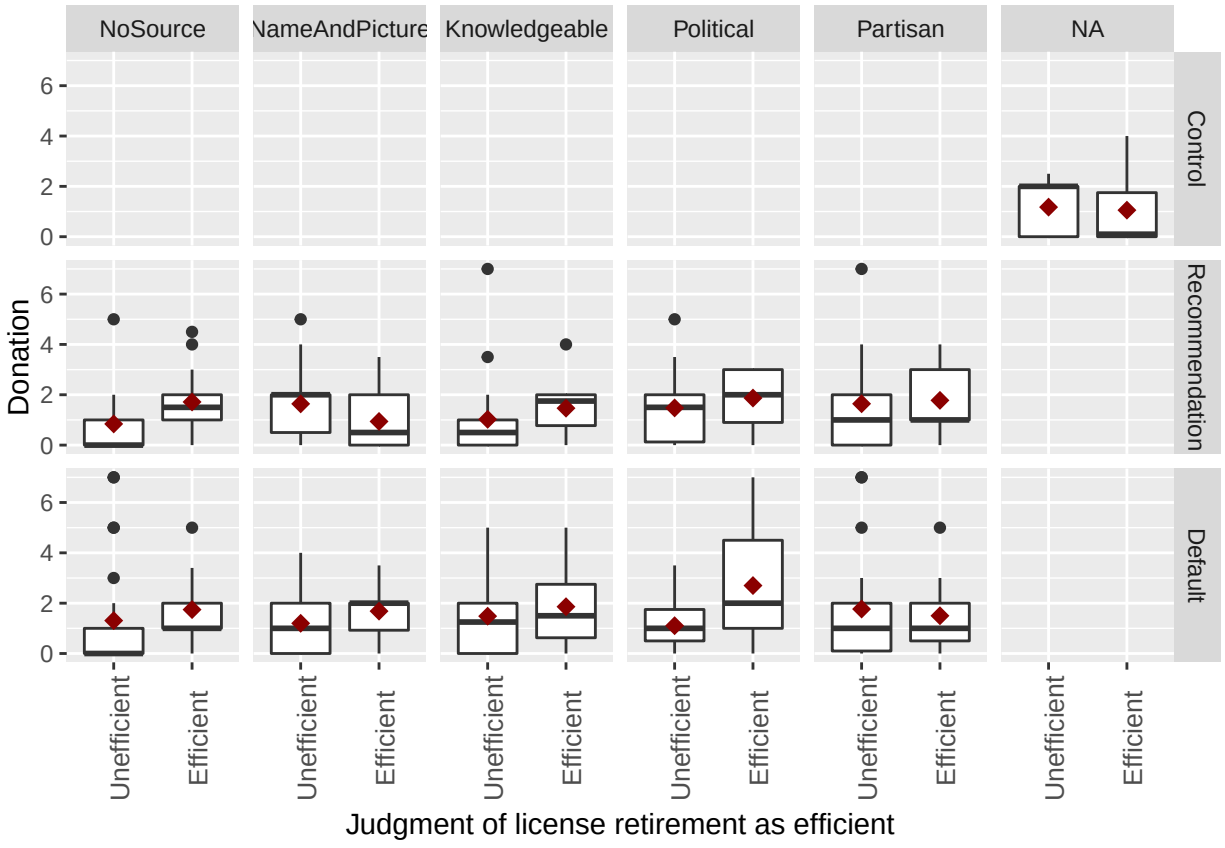
```
## group: Unefficient
##   vars   n mean  sd median trimmed  mad min max range skew kurtosis   se
## 1    1 229 1.34 1.6      1    1.05 1.48   0   7     7 1.58     2.63 0.11
```

```
## ------------------------------------------------------------
## group: Efficient
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 125 1.62 1.43      1    1.45 1.48   0   7     7 0.97     0.78 0.13
```




```
##
##  Welch Two Sample t-test
##
## data:  df$Donation by df$retireEffD
## t = -1.6958, df = 278.81, p-value = 0.09104
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.60857476  0.04529092
## sample estimates:
## mean in group Unefficient   mean in group Efficient
##                  1.342358                  1.624000

##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$retireEffD
## W = 11934, p-value = 0.008118
## alternative hypothesis: true location shift is not equal to 0
```


Control
RecNos
DefNos
RecNap
DefNap
RecPol
DefPol
RecPar
DefPar
RecKno
DefKno
Donation
0
2
4
6
Unefficient
Efficient
retireEffD
Unefficient
Efficient
Judgment of license retirement as efficient


NoSource
NameAndPicture
Knowledgeable
Political
Partisan
NA
Control
Recommendation
Default
Donation
0
2
4
6
Unefficient
Efficient
Judgment of license retirement as efficient

```
##
## Call:
## lm(formula = Donation ~ treatment * retireEffD, data = df)
##
## Residuals:
##    Min     1Q Median     3Q    Max
## -2.700 -1.175 -0.308  0.800  5.976
##
## Coefficients:
##                                      Estimate Std. Error t value Pr(>|t|)
## (Intercept)                           1.17500    0.34595   3.396 0.000765
## treatmentRecNos                      -0.33382    0.51037  -0.654 0.513511
## treatmentDefNos                       0.13300    0.46413   0.287 0.774632
## treatmentRecNap                       0.46389    0.50265   0.923 0.356734
## treatmentDefNap                       0.02500    0.48338   0.052 0.958784
## treatmentRecPol                       0.30227    0.47799   0.632 0.527574
## treatmentDefPol                      -0.06974    0.49564  -0.141 0.888191
## treatmentRecPar                       0.46786    0.48338   0.968 0.333807
## treatmentDefPar                       0.59167    0.48338   1.224 0.221814
## treatmentRecKno                      -0.15119    0.48338  -0.313 0.754647
## treatmentDefKno                       0.30833    0.46841   0.658 0.510833
## retireEffDEfficient                  -0.12045    0.58075  -0.207 0.835816
## treatmentRecNos:retireEffDEfficient   0.99356    0.80563   1.233 0.218346
## treatmentDefNos:retireEffDEfficient   0.55690    0.83604   0.666 0.505802
## treatmentRecNap:retireEffDEfficient -0.57843    0.79361  -0.729 0.466600
## treatmentDefNap:retireEffDEfficient   0.60379    0.80667   0.748 0.454693
## treatmentRecPol:retireEffDEfficient   0.51318    0.82791   0.620 0.535779
## treatmentDefPol:retireEffDEfficient   1.71519    0.83822   2.046 0.041521
## treatmentRecPar:retireEffDEfficient   0.25538    0.84688   0.302 0.763185
## treatmentDefPar:retireEffDEfficient -0.14621    0.79710  -0.183 0.854573
## treatmentRecKno:retireEffDEfficient   0.56331    0.80667   0.698 0.485468
## treatmentDefKno:retireEffDEfficient   0.49712    0.82241   0.604 0.545947
##
## (Intercept)                          ***
## treatmentRecNos
## treatmentDefNos
## treatmentRecNap
## treatmentDefNap
## treatmentRecPol
## treatmentDefPol
## treatmentRecPar
## treatmentDefPar
## treatmentRecKno
## treatmentDefKno
## retireEffDEfficient
## treatmentRecNos:retireEffDEfficient
## treatmentDefNos:retireEffDEfficient
## treatmentRecNap:retireEffDEfficient
## treatmentDefNap:retireEffDEfficient
## treatmentRecPol:retireEffDEfficient
## treatmentDefPol:retireEffDEfficient *
## treatmentRecPar:retireEffDEfficient
## treatmentDefPar:retireEffDEfficient
## treatmentRecKno:retireEffDEfficient
```

```
## treatmentDefKno:retireEffDEfficient
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.547 on 332 degrees of freedom
## Multiple R-squared:  0.05624,    Adjusted R-squared:  -0.003453
## F-statistic: 0.9422 on 21 and 332 DF,  p-value: 0.5364
```

... moral duty protect the climate

```
##
## No moral duty    Moral duty
##           136           218
```

```
##
##                 Control RecNos DefNos RecNap DefNap RecPol DefPol RecPar
##   No moral duty      11     13     14     19     16      5      7     12
##   Moral duty         20     18     20     14     17     27     22     18
##
##                 DefPar RecKno DefKno
##   No moral duty     10     17     12
##   Moral duty        24     16     22
```

```
##
##  Pearson's Chi-squared test
##
## data:  table(df$moralD, df$treatment)
## X-squared = 20.174, df = 10, p-value = 0.02765
```

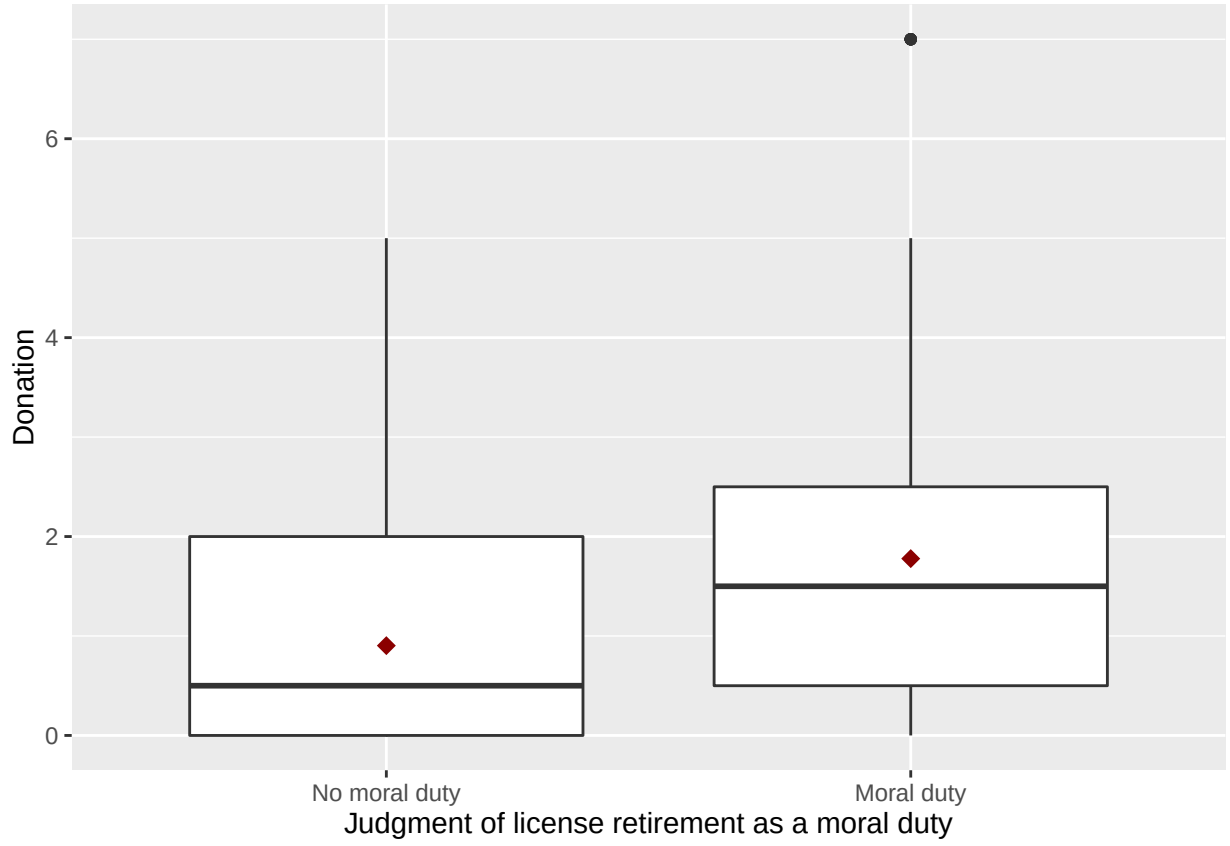
```
##
## Call:
## glm(formula = moralD ~ treatment, family = "binomial", data = df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.9268  -1.2033   0.7433   1.0108   1.3095
##
## Coefficients:
##                  Estimate Std. Error z value Pr(>|z|)
## (Intercept)      0.597837   0.375379   1.593   0.1112
## treatmentRecNos -0.272415   0.522865  -0.521   0.6024
## treatmentDefNos -0.241162   0.512189  -0.471   0.6378
## treatmentRecNap -0.903219   0.514752  -1.755   0.0793 .
## treatmentDefNap -0.537212   0.512087  -1.049   0.2941
## treatmentRecPol  1.088562   0.614773   1.771   0.0766 .
## treatmentDefPol  0.547295   0.573777   0.954   0.3402
## treatmentRecPar -0.192372   0.528959  -0.364   0.7161
## treatmentDefPar  0.277632   0.531578   0.522   0.6015
## treatmentRecKno -0.658462   0.512087  -1.286   0.1985
## treatmentDefKno  0.008299   0.519324   0.016   0.9873
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 471.58  on 353  degrees of freedom
## Residual deviance: 450.50  on 343  degrees of freedom
## AIC: 472.5
##
## Number of Fisher Scoring iterations: 4
```

Moral duty to protect climate is significantly different in treatments.

Average donation moral duty differences (by treatment)

```
## group: No moral duty
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 136  0.9 1.07    0.5    0.77 0.74   0   5     5 1.27     1.74 0.09
## ------------------------------------------------------------
## group: Moral duty
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 218 1.78 1.69    1.5    1.54 1.48   0   7     7 1.15     1.12 0.11
```




```
##
##  Welch Two Sample t-test
##
```

```
## data:  df$Donation by df$moralD
## t = -5.9481, df = 351.88, p-value = 6.548e-09
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -1.1643716 -0.5857093
## sample estimates:
## mean in group No moral duty    mean in group Moral duty
##                   0.9029412                   1.7779817
```

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  df$Donation by df$moralD
## W = 10152, p-value = 3.236e-07
## alternative hypothesis: true location shift is not equal to 0
```

The significant differences are not really dependable, since moral duty correlates with treatments.

```
##
## Call:
## lm(formula = Donation ~ treatment, data = df)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.6833 -1.2121 -0.3485  0.7431  5.8152
##
## Coefficients:
##                 Estimate Std. Error t value Pr(>|t|)
## (Intercept)      1.13226    0.27915   4.056 6.18e-05 ***
## treatmentRecNos  0.10323    0.39478   0.261    0.794
## treatmentDefNos  0.29127    0.38597   0.755    0.451
## treatmentRecNap  0.18895    0.38875   0.486    0.627
## treatmentDefNap  0.24350    0.38875   0.626    0.531
## treatmentRecPol  0.46774    0.39168   1.194    0.233
## treatmentDefPol  0.52291    0.40153   1.302    0.194
## treatmentRecPar  0.55108    0.39805   1.384    0.167
## treatmentDefPar  0.53245    0.38597   1.380    0.169
## treatmentRecKno  0.05259    0.38875   0.135    0.892
## treatmentDefKno  0.46186    0.38597   1.197    0.232
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.554 on 343 degrees of freedom
## Multiple R-squared:  0.01598,    Adjusted R-squared:  -0.01271
## F-statistic: 0.5569 on 10 and 343 DF,  p-value: 0.8486
```

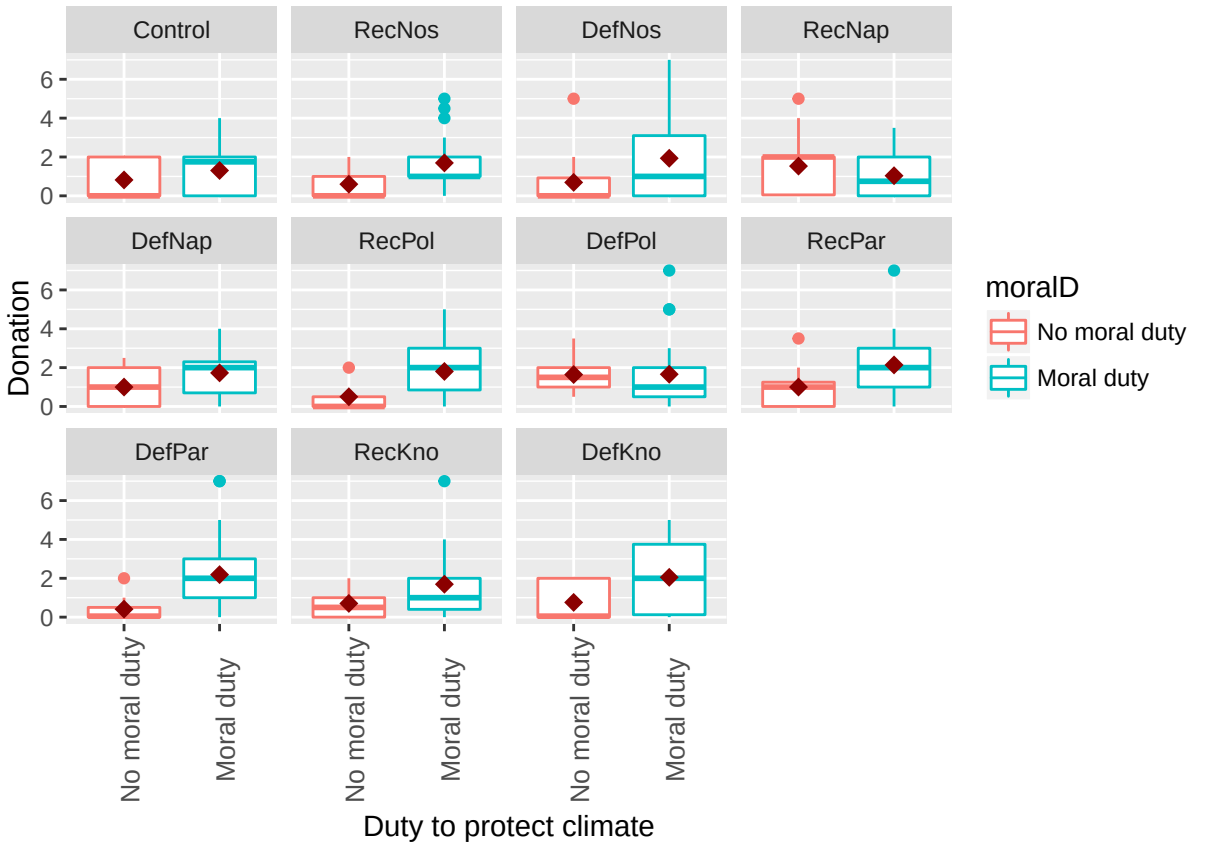
```
##
## Call:
## lm(formula = Donation ~ RecvsDefD * Sourcetype, data = df)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.6833 -1.2355 -0.3758  0.6788  5.8152
```

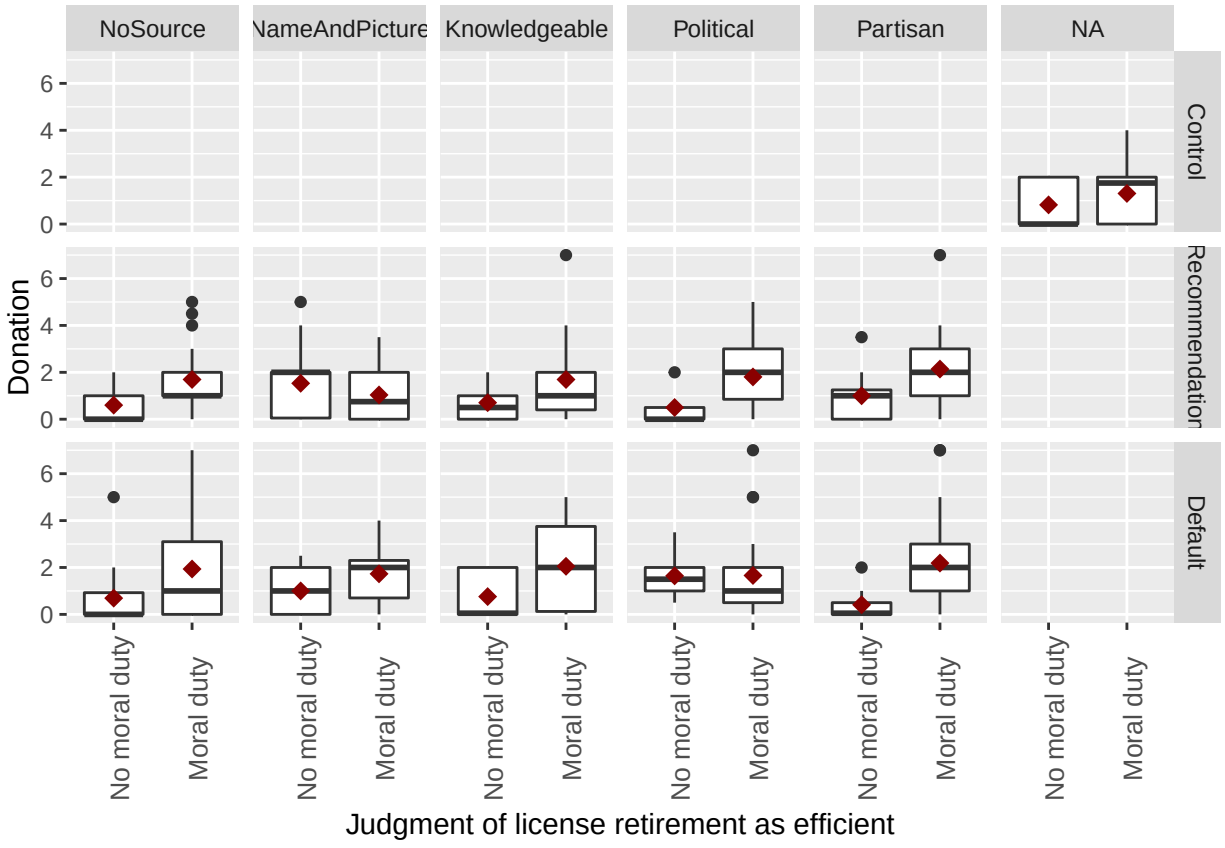
```
##
## Coefficients:
##                                      Estimate Std. Error t value Pr(>|t|)
## (Intercept)                           1.23548    0.28512   4.333 1.98e-05
## RecvsDefDDef                          0.18805    0.39423   0.477    0.634
## SourcetypeNameAndPicture              0.08573    0.39707   0.216    0.829
## SourcetypeKnowledgeable              -0.05064    0.39707  -0.128    0.899
## SourcetypePolitical                   0.36452    0.40006   0.911    0.363
## SourcetypePartisan                    0.44785    0.40657   1.102    0.272
## RecvsDefDDef:SourcetypeNameAndPicture -0.13350    0.55511  -0.240    0.810
## RecvsDefDDef:SourcetypeKnowledgeable   0.22122    0.55309   0.400    0.689
## RecvsDefDDef:SourcetypePolitical      -0.13287    0.56663  -0.234    0.815
## RecvsDefDDef:SourcetypePartisan       -0.20667    0.55995  -0.369    0.712
##
## (Intercept)                           ***
## RecvsDefDDef
## SourcetypeNameAndPicture
## SourcetypeKnowledgeable
## SourcetypePolitical
## SourcetypePartisan
## RecvsDefDDef:SourcetypeNameAndPicture
## RecvsDefDDef:SourcetypeKnowledgeable
## RecvsDefDDef:SourcetypePolitical
## RecvsDefDDef:SourcetypePartisan
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.587 on 313 degrees of freedom
##   (31 observations deleted due to missingness)
## Multiple R-squared:  0.01276,    Adjusted R-squared:  -0.01562
## F-statistic: 0.4496 on 9 and 313 DF,  p-value: 0.9071


##
## Call:
## lm(formula = Donation ~ treatment + moralD, data = df)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.0301 -0.9534 -0.2645  0.9668  5.3686
##
## Coefficients:
##                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)        0.5730     0.2905   1.972   0.0494 *
## treatmentRecNos    0.1592     0.3811   0.418   0.6765
## treatmentDefNos    0.3406     0.3726   0.914   0.3612
## treatmentRecNap    0.3805     0.3770   1.009   0.3135
## treatmentDefNap    0.3562     0.3758   0.948   0.3438
## treatmentRecPol    0.2956     0.3794   0.779   0.4365
## treatmentDefPol    0.4246     0.3879   1.094   0.2745
## treatmentRecPar    0.5902     0.3842   1.536   0.1254
## treatmentDefPar    0.4798     0.3726   1.288   0.1987
## treatmentRecKno    0.1916     0.3761   0.509   0.6108
## treatmentDefKno    0.4602     0.3724   1.236   0.2174
## moralDMoral duty   0.8669     0.1688   5.137  4.7e-07 ***
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.5 on 342 degrees of freedom
## Multiple R-squared:  0.08647,    Adjusted R-squared:  0.05708
## F-statistic: 2.943 on 11 and 342 DF,  p-value: 0.0009758
```

```
##
## Call:
## lm(formula = Donation ~ RecvsDefD * NosvsSomeD + moralD, data = df)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.8850 -0.9087 -0.3850  1.0228  5.2027
##
## Coefficients:
##                                    Estimate Std. Error t value Pr(>|t|)
## (Intercept)                          0.7084     0.2908   2.436   0.0154
## RecvsDefDDef                         0.1812     0.3770   0.480   0.6312
## NosvsSomeDSome Source                0.2003     0.3039   0.659   0.5102
## moralDMoral duty                     0.9078     0.1738   5.222 3.21e-07
## RecvsDefDDef:NosvsSomeDSome Source  -0.1127     0.4219  -0.267   0.7896
##
## (Intercept)                         *
## RecvsDefDDef
## NosvsSomeDSome Source
## moralDMoral duty                    ***
## RecvsDefDDef:NosvsSomeDSome Source
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.518 on 318 degrees of freedom
##   (31 observations deleted due to missingness)
## Multiple R-squared:  0.08267,    Adjusted R-squared:  0.07113
## F-statistic: 7.164 on 4 and 318 DF,  p-value: 1.557e-05
```

When controlling for treatments, moral duty is a significant positive predictor for the Donation amount. Feeling morally obliged to contribute to climate protection raises the Donation by 0.87 ???, when controlling for treatments.


Control
RecNos
DefNos
RecNap
DefNap
RecPol
DefPol
RecPar
DefPar
RecKno
DefKno
Donation
0
2
4
6
No moral duty
Moral duty
Duty to protect climate
moralID
No moral duty
Moral duty


NoSource
NameAndPicture
Knowledgeable
Political
Partisan
NA
Control
Recommendation
Default
Donation
0
2
4
6
No moral duty
Moral duty
Judgment of license retirement as efficient

... income

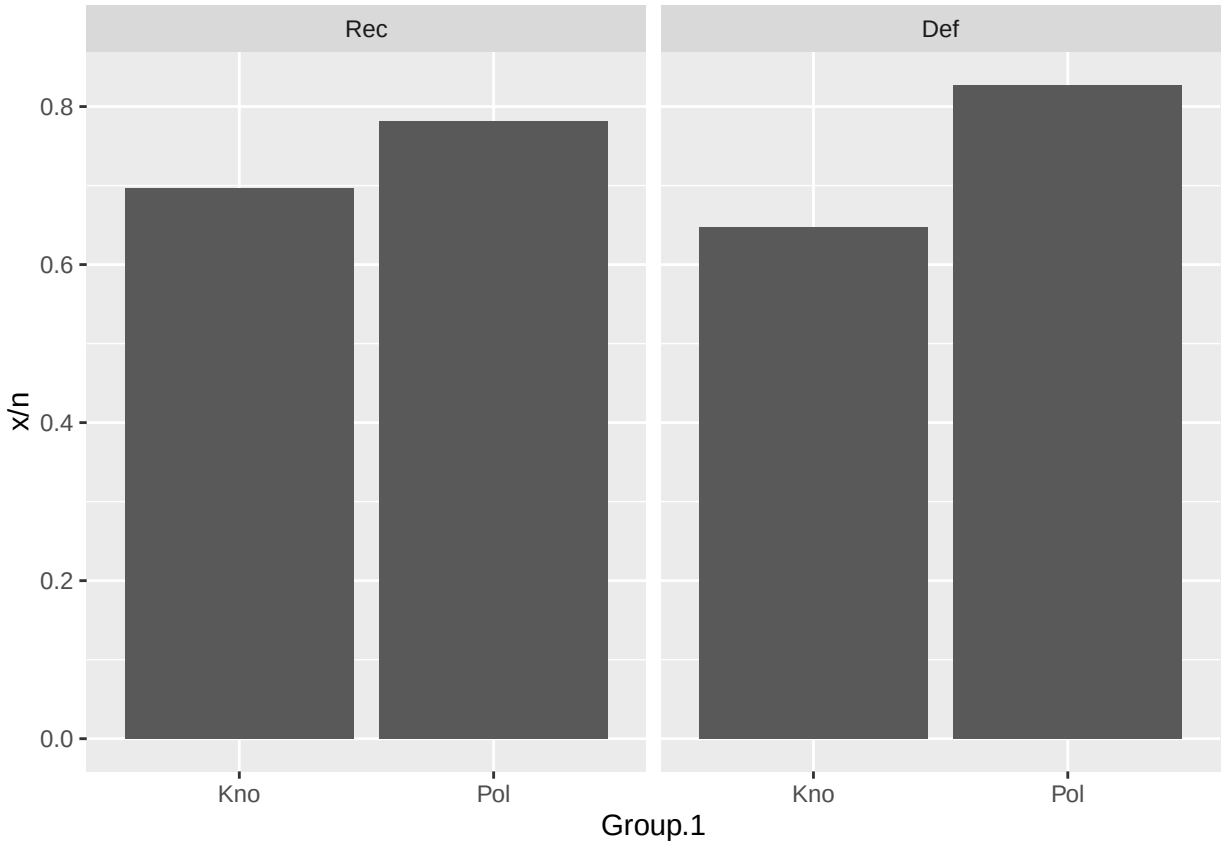
```
##
## Call:
## lm(formula = Donation ~ treatment + income, data = df)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.2841 -1.2204 -0.3455  0.7513  5.5815
##
## Coefficients:
##                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)      0.9322687  0.2970041   3.139  0.00185 **
## treatmentRecNos  0.1259023  0.3853424   0.327  0.74408
## treatmentDefNos  0.3240266  0.3770174   0.859  0.39072
## treatmentRecNap  0.1849262  0.3853627   0.480  0.63163
## treatmentDefNap  0.2388851  0.3821894   0.625  0.53237
## treatmentRecPol  0.4969523  0.3851522   1.290  0.19786
## treatmentDefPol  0.4949507  0.3920420   1.262  0.20766
## treatmentRecPar  0.5966247  0.3957567   1.508  0.13263
## treatmentDefPar  0.5748647  0.3792515   1.516  0.13053
## treatmentRecKno -0.0973724  0.3855650  -0.253  0.80078
## treatmentDefKno  0.2442904  0.3851104   0.634  0.52630
## income           0.0002704  0.0001603   1.687  0.09259 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.516 on 330 degrees of freedom
##   (12 observations deleted due to missingness)
## Multiple R-squared:  0.03034,    Adjusted R-squared:  -0.001986
## F-statistic: 0.9385 on 11 and 330 DF,  p-value: 0.5033


##
## Call:
## glm(formula = Donated ~ treatment + income, family = "binomial",
##     data = df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8760  -1.3180   0.7453   0.8836   1.1293
##
## Coefficients:
##                   Estimate Std. Error z value Pr(>|z|)
## (Intercept)      3.157e-01  4.040e-01   0.781   0.4346
## treatmentRecNos  2.735e-01  5.232e-01   0.523   0.6012
## treatmentDefNos -2.061e-01  5.013e-01  -0.411   0.6811
## treatmentRecNap  4.177e-01  5.296e-01   0.789   0.4304
## treatmentDefNap  6.136e-01  5.359e-01   1.145   0.2523
## treatmentRecPol  9.072e-01  5.631e-01   1.611   0.1072
## treatmentDefPol  1.242e+00  6.121e-01   2.029   0.0425 *
## treatmentRecPar  5.924e-01  5.552e-01   1.067   0.2860
## treatmentDefPar  8.144e-01  5.455e-01   1.493   0.1354
## treatmentRecKno  4.180e-01  5.300e-01   0.789   0.4302
## treatmentDefKno  1.342e-01  5.181e-01   0.259   0.7956
```

```
## income           1.317e-05  2.376e-04   0.055   0.9558
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 428.11  on 341  degrees of freedom
## Residual deviance: 416.72  on 330  degrees of freedom
##   (12 observations deleted due to missingness)
## AIC: 440.72
##
## Number of Fisher Scoring iterations: 4
```

Significant predictor for amount (intensive margin), but not for extensive margin.

Fractions of participants donating: Pol vs Knowledge

```
## Don't know how to automatically pick scale for object of type data.frame. Defaulting to continuous.
```




```
##
## Call:
## glm(formula = Donated ~ RecvsDefD * KnovsPol, family = "binomial",
##     data = df)
##
```

```
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8750  -1.4432   0.7026   0.8497   0.9331
##
## Coefficients:
##                           Estimate Std. Error z value Pr(>|z|)
## (Intercept)                0.8329     0.3788   2.199   0.0279 *
## RecvsDefDDef              -0.2268     0.5218  -0.435   0.6638
## KnovsPolPol                0.4401     0.5713   0.770   0.4411
## RecvsDefDDef:KnovsPolPol   0.5224     0.8347   0.626   0.5314
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 148.19  on 127  degrees of freedom
## Residual deviance: 144.92  on 124  degrees of freedom
##   (226 observations deleted due to missingness)
## AIC: 152.92
##
## Number of Fisher Scoring iterations: 4
```

Disaggregated reactance scores (4 categories)

```
##
## Call:
## lm(formula = Donation ~ treatment + reactance1d + reactance2d +
##     reactance3d + reactance4d + reactance5d + reactance6d + reactance7d +
##     reactance8d + reactance9d + reactance10d + reactance11d,
##     data = df)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.2724 -1.1005 -0.3714  0.7278  5.4969
##
## Coefficients:
##                 Estimate Std. Error t value Pr(>|t|)
## (Intercept)      0.94095    0.41826   2.250   0.0251 *
## treatmentRecNos -0.01447    0.39937  -0.036   0.9711
## treatmentDefNos  0.30470    0.39995   0.762   0.4467
## treatmentRecNap  0.23667    0.39417   0.600   0.5486
## treatmentDefNap  0.29119    0.39780   0.732   0.4647
## treatmentRecPol  0.53650    0.39592   1.355   0.1763
## treatmentDefPol  0.59156    0.41045   1.441   0.1505
## treatmentRecPar  0.67007    0.40505   1.654   0.0990 .
## treatmentDefPar  0.65041    0.39493   1.647   0.1005
## treatmentRecKno  0.16741    0.39261   0.426   0.6701
## treatmentDefKno  0.54693    0.39752   1.376   0.1698
## reactance1d      0.30306    0.33080   0.916   0.3603
## reactance2d     -0.26364    0.38994  -0.676   0.4994
## reactance3d      0.42694    0.18495   2.308   0.0216 *
## reactance4d     -0.23381    0.20820  -1.123   0.2622
## reactance5d     -0.17338    0.20522  -0.845   0.3988
```

```
## reactance6d     -0.36983    0.33829  -1.093   0.2751
## reactance7d     -0.02145    0.17365  -0.124   0.9018
## reactance8d     -0.03521    0.18275  -0.193   0.8473
## reactance9d      0.19499    0.20745   0.940   0.3479
## reactance10d    -0.56481    0.33056  -1.709   0.0885 .
## reactance11d     0.76201    0.45047   1.692   0.0917 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.549 on 332 degrees of freedom
## Multiple R-squared:  0.05384,    Adjusted R-squared:  -0.00601
## F-statistic: 0.8996 on 21 and 332 DF,  p-value: 0.592


##
## Call:
## lm(formula = Donation ~ treatment + as.factor(EmotionResp) +
##     as.factor(ReactCompl) + as.factor(ResistInfl) + as.factor(ReactAdv),
##     data = df)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.5051 -1.1476 -0.3594  0.7243  5.3430
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)               0.736099   0.453194   1.624   0.1053
## treatmentRecNos          -0.005423   0.399003  -0.014   0.9892
## treatmentDefNos           0.395710   0.402113   0.984   0.3258
## treatmentRecNap           0.235680   0.391344   0.602   0.5474
## treatmentDefNap           0.319443   0.397975   0.803   0.4227
## treatmentRecPol           0.533913   0.397358   1.344   0.1800
## treatmentDefPol           0.683147   0.407705   1.676   0.0948 .
## treatmentRecPar           0.581785   0.404362   1.439   0.1512
## treatmentDefPar           0.657105   0.392813   1.673   0.0953 .
## treatmentRecKno           0.133091   0.391121   0.340   0.7339
## treatmentDefKno           0.547243   0.399653   1.369   0.1718
## as.factor(EmotionResp)1   0.632542   0.397026   1.593   0.1121
## as.factor(EmotionResp)2   0.907914   0.406789   2.232   0.0263 *
## as.factor(EmotionResp)3   0.377753   0.512237   0.737   0.4614
## as.factor(ReactCompl)1    0.211673   0.204646   1.034   0.3017
## as.factor(ReactCompl)2    0.008047   0.250036   0.032   0.9743
## as.factor(ReactCompl)3    0.032521   0.381965   0.085   0.9322
## as.factor(ResistInfl)1   -0.352749   0.436930  -0.807   0.4201
## as.factor(ResistInfl)2   -0.449347   0.457319  -0.983   0.3265
## as.factor(ResistInfl)3   -0.781631   0.590293  -1.324   0.1864
## as.factor(ReactAdv)1     -0.265075   0.208132  -1.274   0.2037
## as.factor(ReactAdv)2      0.826840   0.527648   1.567   0.1181
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.548 on 332 degrees of freedom
## Multiple R-squared:  0.05534,    Adjusted R-squared:  -0.004409
## F-statistic: 0.9262 on 21 and 332 DF,  p-value: 0.5571
```

No significant effects of interest. Partly counter-intuitive.

Exclude observations with demandEffectD == 1

```
##
##     Control RecNos DefNos RecNap DefNap RecPol DefPol RecPar DefPar RecKno
##   0       5      2      8      4      8      4      7      6      8      5
##   1       5      4      9     13      6      8      7     11      6      8
##   2      16     16     10      9     16     15      9     10     11     10
##   3       4      8      4      3      2      2      4      2      4      7
##   4       1      1      3      4      1      3      2      1      5      3
##
##     DefKno
##   0      7
##   1      6
##   2      9
##   3     10
##   4      2
```

```
##
##  Pearson's Chi-squared test with simulated p-value (based on 2000
##  replicates)
##
## data:  table(df$demandEffect, df$treatment)
## X-squared = 46.611, df = NA, p-value = 0.2164
```

```
## group: 0
##   vars  n mean  sd median trimmed  mad min max range skew kurtosis   se
## 1    1 64 0.93 1.3    0.5     0.7 0.74   0   7     7 2.19     6.39 0.16
## ------------------------------------------------------------
## group: 1
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 83 1.55 1.51      1    1.34 1.48   0   7     7 1.31      2.2 0.17
## ------------------------------------------------------------
## group: 2
##   vars   n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 131 1.52 1.55      1    1.28 1.48   0   7     7 1.35     2.05 0.14
## ------------------------------------------------------------
## group: 3
##   vars  n mean  sd median trimmed  mad min max range skew kurtosis   se
## 1    1 50 1.56 1.7      1    1.29 1.48   0   7     7 1.16     0.79 0.24
## ------------------------------------------------------------
## group: 4
##   vars  n mean  sd median trimmed  mad min max range skew kurtosis   se
## 1    1 26 1.77 1.7      2    1.64 1.85   0   5     5 0.71     -0.6 0.33
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  df$Donation by df$demandEffect
## Kruskal-Wallis chi-squared = 11.166, df = 4, p-value = 0.02476
```

```
##
##                0  1  2  3  4
##   Not donated 28 19 38 16  8
##   Donated     36 64 93 34 18
```

```
##
##  Pearson's Chi-squared test
##
## data:  table(df$Donated, df$demandEffect)
## X-squared = 7.7038, df = 4, p-value = 0.1031
```

```
##
## Call:
## glm(formula = Donated ~ treatment + demandEffectD, family = "binomial",
##     data = df)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.8763  -1.3193   0.7313   0.8531   1.1324
##
## Coefficients:
##                      Estimate Std. Error z value Pr(>|z|)
## (Intercept)           0.32765    0.36696   0.893   0.3719
## treatmentRecNos       0.27420    0.52421   0.523   0.6009
## treatmentDefNos      -0.20703    0.50070  -0.413   0.6793
## treatmentRecNap       0.50819    0.52553   0.967   0.3335
## treatmentDefNap       0.65444    0.53448   1.224   0.2208
## treatmentRecPol       0.94748    0.56155   1.687   0.0916 .
## treatmentDefPol       1.24383    0.61183   2.033   0.0421 *
## treatmentRecPar       0.68534    0.55068   1.245   0.2133
## treatmentDefPar       0.85467    0.54484   1.569   0.1167
## treatmentRecKno       0.50945    0.52693   0.967   0.3336
## treatmentDefKno       0.28336    0.51416   0.551   0.5816
## demandEffectDDemEff -0.01378    0.28906  -0.048   0.9620
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 437.13  on 353  degrees of freedom
## Residual deviance: 425.47  on 342  degrees of freedom
## AIC: 449.47
##
## Number of Fisher Scoring iterations: 4
```

```
##
## Call:
## lm(formula = Donation ~ treatment + demandEffectD, data = df)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.8643 -1.1637 -0.3692  0.7347  5.8951
##
```

```
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)          1.08973    0.28083   3.880 0.000125 ***
## treatmentRecNos      0.06920    0.39529   0.175 0.861125
## treatmentDefNos      0.27951    0.38571   0.725 0.469148
## treatmentRecNap      0.17555    0.38852   0.452 0.651664
## treatmentDefNap      0.26206    0.38865   0.674 0.500587
## treatmentRecPol      0.46907    0.39131   1.199 0.231464
## treatmentDefPol      0.51089    0.40125   1.273 0.203797
## treatmentRecPar      0.56724    0.39787   1.426 0.154874
## treatmentDefPar      0.50518    0.38618   1.308 0.191706
## treatmentRecKno      0.01522    0.38946   0.039 0.968854
## treatmentDefKno      0.41133    0.38760   1.061 0.289337
## demandEffectDDemEff  0.26367    0.20493   1.287 0.199091
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.553 on 342 degrees of freedom
## Multiple R-squared:  0.02072,    Adjusted R-squared:  -0.01078
## F-statistic: 0.6578 on 11 and 342 DF,  p-value: 0.7782


## group: Control
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 26 1.17 1.16   1.25    1.07 1.48   0   4     4 0.41    -0.84 0.23
## ------------------------------------------------------------
## group: RecNos
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 22  1.1 1.36   0.75    0.88 1.11   0 4.5   4.5 1.09     0.11 0.29
## ------------------------------------------------------------
## group: DefNos
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 27  1.5 2.16    0.7    1.15 1.04   0   7     7 1.42     0.75 0.42
## ------------------------------------------------------------
## group: RecNap
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 26 1.14 1.33   0.75    0.94 1.11   0   5     5 1.15     0.86 0.26
## ------------------------------------------------------------
## group: DefNap
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis  se
## 1    1 30 1.43 1.11   1.75    1.35 1.11   0   4     4 0.26    -0.75 0.2
## ------------------------------------------------------------
## group: RecPol
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 27 1.54 1.17    1.5    1.53 1.48   0 3.5   3.5 0.03    -1.44 0.23
## ------------------------------------------------------------
## group: DefPol
##   vars  n mean  sd median trimmed  mad min max range skew kurtosis   se
## 1    1 23 1.65 1.7      1    1.37 1.48   0   7     7 1.55     2.16 0.35
## ------------------------------------------------------------
## group: RecPar
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 27 1.65 1.74      1    1.46 1.48   0   7     7 1.13     0.98 0.33
## ------------------------------------------------------------
## group: DefPar
```

```
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 25 1.54 1.67      1    1.27 1.48   0   7     7 1.64     2.57 0.33
## ------------------------------------------------------------
## group: RecKno
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis   se
## 1    1 23 1.31 1.55      1    1.03 1.48   0   7     7 2.14      5.3 0.32
## ------------------------------------------------------------
## group: DefKno
##   vars  n mean   sd median trimmed  mad min max range skew kurtosis  se
## 1    1 22 1.16 1.43    0.5    0.92 0.74   0   5     5 1.07     0.32 0.3
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  dfnoDE$Donation and dfnoDE$treatment
## Kruskal-Wallis chi-squared = 7.3133, df = 10, p-value = 0.6956
```

```
##
## Call:
## lm(formula = Donation ~ treatment, data = dfnoDE)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.6522 -1.1522 -0.4963  0.8269  5.6913
##
## Coefficients:
##                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)      1.173077   0.297298   3.946 0.000102 ***
## treatmentRecNos -0.068531   0.439139  -0.156 0.876105
## treatmentDefNos  0.323219   0.416532   0.776 0.438449
## treatmentRecNap -0.034615   0.420443  -0.082 0.934445
## treatmentDefNap  0.256923   0.406187   0.633 0.527585
## treatmentRecPol  0.371368   0.416532   0.892 0.373426
## treatmentDefPol  0.479097   0.433937   1.104 0.270556
## treatmentRecPar  0.475071   0.416532   1.141 0.255084
## treatmentDefPar  0.370923   0.424627   0.874 0.383161
## treatmentRecKno  0.135619   0.433937   0.313 0.754881
## treatmentDefKno -0.009441   0.439139  -0.021 0.982865
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.516 on 267 degrees of freedom
## Multiple R-squared:  0.01747,    Adjusted R-squared:  -0.01933
## F-statistic: 0.4748 on 10 and 267 DF,  p-value: 0.9056
```

```
##
## Call:
## glm(formula = Donated ~ treatment, family = "binomial", data = dfnoDE)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.9145  -1.3116   0.7002   0.9854   1.0842
##
```

```
## Coefficients:
##                  Estimate Std. Error z value Pr(>|z|)
## (Intercept)       0.31015    0.39696   0.781   0.4346
## treatmentRecNos   0.05757    0.58789   0.098   0.9220
## treatmentDefNos  -0.08701    0.55460  -0.157   0.8753
## treatmentRecNap   0.15985    0.56575   0.283   0.7775
## treatmentDefNap   0.87943    0.58644   1.500   0.1337
## treatmentRecPol   0.94261    0.60980   1.546   0.1222
## treatmentDefPol   1.24799    0.67839   1.840   0.0658 .
## treatmentRecPar   0.55484    0.57897   0.958   0.3379
## treatmentDefPar   1.34807    0.67468   1.998   0.0457 *
## treatmentRecKno   0.97078    0.64275   1.510   0.1310
## treatmentDefKno   0.05757    0.58789   0.098   0.9220
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 342.31  on 277  degrees of freedom
## Residual deviance: 328.04  on 267  degrees of freedom
## AIC: 350.04
##
## Number of Fisher Scoring iterations: 4
```

Chi²-Test suggests that experience of demand Effect does not depend on the treatment. Kruskal Wallis Test suggests that experiencing a demand effect has an impact on Donation amount. It is not significant (Chi²) with dependent variable Donated (extensive margin). In a logistic regression that incorporates treatment as IV and demandEffect as dummy, therer is no demand effect. In the OLS regression, there is also no effect, when controlling for treatment effects. When only looking at subjects that did not experience a demand effect (judging on the dummy variable), according to the Kruskal Wallis Test, there are also no significant differences across treatments. According to a logistic regression, The likelihood to donate is higher for those without a demand effect-experience that encountered DefPol and DefPar, with Control as base-category.

Change dependent variable Donation to log(Donation+1)

Hurdle Model

```
##
## Call:
## mhurdle(formula = Donation ~ moralD + retireEffD + NosvsSomeD +
##     RecvsDefD | NosvsSomeD + RecvsDefD + belief + gender | 0,
##     data = dfsub)
##
## Frequency of 0:  0.29688
##
## Coefficients :
##                            Estimate Std. Error t-value  Pr(>|t|)
## h1.(Intercept)           -0.215673   0.206372 -1.0451 0.2959906
## h1.moralDMoral duty       0.513003   0.155403  3.3011 0.0009630 ***
## h1.retireEffDEfficient    0.581440   0.170344  3.4133 0.0006418 ***
## h1.NosvsSomeDSome Source  0.367262   0.185555  1.9793 0.0477859 *
## h1.RecvsDefDDef          -0.033698   0.153902 -0.2190 0.8266844
```

```
## h2.(Intercept)           -0.356651   0.151085 -2.3606 0.0182450 *
## h2.NosvsSomeDSome Source -0.174946   0.117336 -1.4910 0.1359659
## h2.RecvsDefDDef           0.089233   0.087665  1.0179 0.3087327
## h2.belief                 0.389188   0.042861  9.0802 < 2.2e-16 ***
## h2.genderWeiblich         0.142373   0.091951  1.5484 0.1215375
## sd                        0.656601   0.030952 21.2132 < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Log-Likelihood: -508.84 on 11 Df
##
## R^2 :
##  Coefficient of determination : 0.31387
##  Likelihood ratio index       : 0.094522


##
## Call:
## glm(formula = Donated ~ moralD + retireEffD + NosvsSomeD * RecvsDefD *
##     Reactance, family = "binomial", data = dfsub)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -2.3432  -1.0774   0.6082   0.8293   1.4927
##
## Coefficients:
##                                                Estimate Std. Error z value
## (Intercept)                                     -3.4639     1.7125  -2.023
## moralDMoral duty                                 0.8887     0.2664   3.336
## retireEffDEfficient                              1.0587     0.3059   3.461
## NosvsSomeDSome Source                            4.0594     1.7738   2.289
## RecvsDefDDef                                     2.9683     1.8659   1.591
## Reactance                                        0.7711     0.4061   1.899
## NosvsSomeDSome Source:RecvsDefDDef              -3.9997     2.0059  -1.994
## NosvsSomeDSome Source:Reactance                 -0.8688     0.4195  -2.071
## RecvsDefDDef:Reactance                          -0.8078     0.4340  -1.861
## NosvsSomeDSome Source:RecvsDefDDef:Reactance     1.0515     0.4599   2.286
##                                                Pr(>|z|)
## (Intercept)                                    0.043107 *
## moralDMoral duty                               0.000850 ***
## retireEffDEfficient                            0.000539 ***
## NosvsSomeDSome Source                          0.022103 *
## RecvsDefDDef                                   0.111658
## Reactance                                      0.057626 .
## NosvsSomeDSome Source:RecvsDefDDef             0.046160 *
## NosvsSomeDSome Source:Reactance                0.038371 *
## RecvsDefDDef:Reactance                         0.062701 .
## NosvsSomeDSome Source:RecvsDefDDef:Reactance 0.022248 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 389.24  on 319  degrees of freedom
## Residual deviance: 350.04  on 310  degrees of freedom
```

```
##   (30 observations deleted due to missingness)
## AIC: 370.04
##
## Number of Fisher Scoring iterations: 5
```

```
##
## Call:
## lm(formula = Donation ~ NosvsSomeD + RecvsDefD + belief + gender,
##     data = dfsub)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -3.8302 -0.8784 -0.0402  0.7205  5.7114
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)           -0.28924    0.23919  -1.209   0.2275
## NosvsSomeDSome Source -0.06009    0.18704  -0.321   0.7482
## RecvsDefDDef           0.17736    0.14902   1.190   0.2349
## belief                 0.70023    0.07208   9.714   <2e-16 ***
## genderWeiblich         0.50097    0.15211   3.293   0.0011 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 1.332 on 315 degrees of freedom
##   (30 observations deleted due to missingness)
## Multiple R-squared:  0.2584, Adjusted R-squared:  0.249
## F-statistic: 27.44 on 4 and 315 DF,  p-value: < 2.2e-16
```

```
##
## Call:
## mhurdle(formula = Donation ~ moralD + retireEffD + NosvsSomeD *
##     RecvsDefD * Reactance + gender + age + income | NosvsSomeD +
##     RecvsDefD + belief + gender + age + income | 0, data = dfsub)
##
## Frequency of 0:  0.30744
##
## Coefficients :
##                                                    Estimate  Std. Error
## h1.(Intercept)                                  -2.1126e+00  1.0664e+00
## h1.moralDMoral duty                              5.4245e-01  1.6571e-01
## h1.retireEffDEfficient                           6.1068e-01  1.7996e-01
## h1.NosvsSomeDSome Source                         2.4963e+00  1.0179e+00
## h1.RecvsDefDDef                                  1.7091e+00  1.0843e+00
## h1.Reactance                                     4.5228e-01  2.2643e-01
## h1.genderWeiblich                                2.9813e-01  1.6771e-01
## h1.age                                          -6.6484e-03  1.8311e-02
## h1.income                                        1.0369e-04  2.0969e-04
## h1.NosvsSomeDSome Source:RecvsDefDDef           -2.4724e+00  1.1728e+00
## h1.NosvsSomeDSome Source:Reactance              -5.4531e-01  2.3638e-01
## h1.RecvsDefDDef:Reactance                       -4.5555e-01  2.4612e-01
## h1.NosvsSomeDSome Source:RecvsDefDDef:Reactance  6.3729e-01  2.6325e-01
## h2.(Intercept)                                  -6.3890e-01  3.0923e-01
## h2.NosvsSomeDSome Source                        -1.7905e-01  1.1894e-01
```

```
## h2.RecvsDefDDef                                    4.6116e-02  9.2134e-02
## h2.belief                                          3.8419e-01  4.4664e-02
## h2.genderWeiblich                                  1.9388e-01  9.5882e-02
## h2.age                                             7.9411e-03  1.0740e-02
## h2.income                                          1.1253e-04  9.0244e-05
## sd                                                 6.5574e-01  3.1696e-02
##                                                   t-value  Pr(>|t|)
## h1.(Intercept)                                    -1.9810 0.0475862 *
## h1.moralDMoral duty                                3.2734 0.0010626 **
## h1.retireEffDEfficient                             3.3934 0.0006903 ***
## h1.NosvsSomeDSome Source                           2.4525 0.0141852 *
## h1.RecvsDefDDef                                    1.5763 0.1149593
## h1.Reactance                                       1.9974 0.0457809 *
## h1.genderWeiblich                                  1.7776 0.0754654 .
## h1.age                                            -0.3631 0.7165457
## h1.income                                          0.4945 0.6209571
## h1.NosvsSomeDSome Source:RecvsDefDDef             -2.1082 0.0350146 *
## h1.NosvsSomeDSome Source:Reactance                -2.3069 0.0210582 *
## h1.RecvsDefDDef:Reactance                         -1.8509 0.0641795 .
## h1.NosvsSomeDSome Source:RecvsDefDDef:Reactance    2.4209 0.0154841 *
## h2.(Intercept)                                    -2.0661 0.0388161 *
## h2.NosvsSomeDSome Source                          -1.5054 0.1322126
## h2.RecvsDefDDef                                    0.5005 0.6167000
## h2.belief                                          8.6018 < 2.2e-16 ***
## h2.genderWeiblich                                  2.0221 0.0431691 *
## h2.age                                             0.7394 0.4596472
## h2.income                                          1.2469 0.2124325
## sd                                                20.6882 < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Log-Likelihood: -481.12 on 21 Df
##
## R^2 :
##  Coefficient of determination : 0.3122
##  Likelihood ratio index       : 0.10987
```

Potentially interesting story. Is it possible to link regression to explain believes with regression to explain donations, of which belief is one independent variable? Probably overly complex. Of course here I will also have to check whether the assumptions for these models are met.

Checking model assumptions for models that I will use