Load data and dependencies.

```
cat("\014")
```

```
rm(list=ls())
if (!require("pacman")) install.packages("pacman"); library(pacman)

## Loading required package:  pacman

load("/Users/hectorbahamonde/research/democratic_backsliding/chile_data.RData")
load("/Users/hectorbahamonde/research/democratic_backsliding/estonia_data.RData")
```

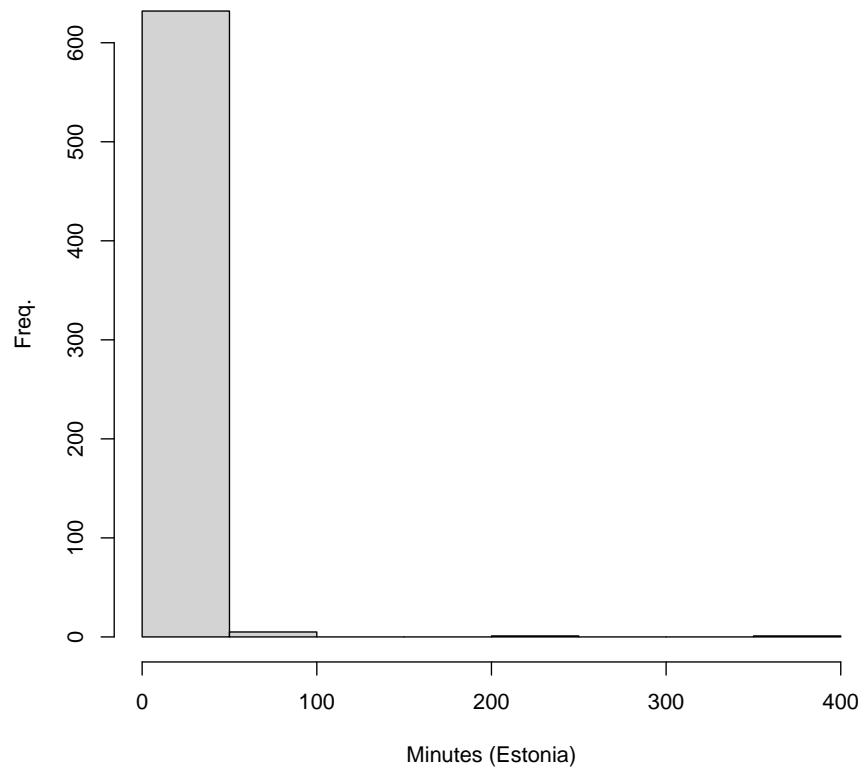Let's see how long people take to answer the study

```
hist(as.numeric(dat.chile$Duration..in.seconds.)/60, ylab="Freq.", xlab="Minutes (Chile)")
```

Histogram of as.numeric(dat.chile$Duration..in.seconds.)/60
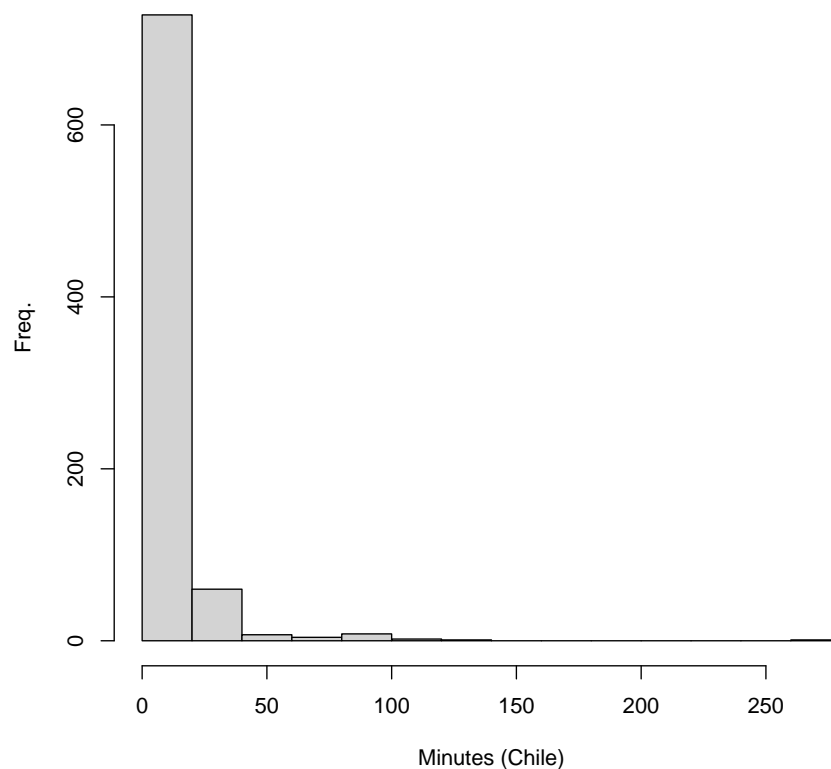

```
hist(as.numeric(dat.estonia$Duration..in.seconds.)/60, ylab="Freq.", xlab="Minutes (Estoni
```

1

Histogram of as.numeric(dat.estonia$Duration..in.seconds.)/60

Minutes (Estonia)

```
#
summary(as.numeric(dat.chile$Duration..in.seconds.))

##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   165.0   363.0   494.0   721.9   750.5 15642.0

summary(as.numeric(dat.estonia$Duration..in.seconds.))

##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   159.0   279.5   383.0   543.6   543.0 21682.0
```

```
table(dat.chile$Q3) # age

##
##     18-24     25-34     35-44     45-54 Más de 55
##       115       170       146       152       228

table(dat.estonia$Q3) # age

##
##   18-24   25-34   35-44   45-54 Üle 55
##      76     134     125     115     189
```

```r
table(dat.chile$Q4) # gender

##
##   Man Woman Other
##   388   420     3

table(dat.estonia$Q4) # gender

##
##         Man       Woman Do not know       Other
##         303         333           2           1
```

```r
# Import Data
dat.chile <- read.csv("/Users/hectorbahamonde/research/democratic_backsliding/data/Qualtri
dat.estonia <- read.csv("/Users/hectorbahamonde/research/democratic_backsliding/data/Qualt


# var names
chile.d.var.names = data.frame(
  variable.number = c(colnames(dat.chile)),
  variable.name = c(dat.chile[1,])
  )
estonia.d.var.names = data.frame(
  variable.number = c(colnames(dat.estonia)),
  variable.name = c(dat.estonia[1,])
)

# delete first two/three rows
dat.chile = dat.chile[-c(1, 2), ]
dat.estonia = dat.estonia[-c(1, 2), ]

# sample size data
chile.sample.size = as.numeric(nrow(dat.chile))
estonia.sample.size = as.numeric(nrow(dat.estonia))

# insert country name
dat.chile$Country <- "Chile"
dat.estonia$Country <- "Estonia"

# convert all character columns to factor
#### THIS BELOW WAS CONVERTING TIME IN A WEIRD WAY
# dat.chile[sapply(dat.chile, is.character)] <- lapply(dat.chile[sapply(dat.chile, is.char

############################################################
# Re-coding // Descriptive [Chile and Estonia]
############################################################

# Recode Original Dataset
p_load("dplyr")
```

```r
# dat.chile£Gender = as.factor(dat.chile£Q4)


# Boric.Kast
dat.chile$winners.losers <- recode_factor(dat.chile$Q13,
                                          `GABRIEL BORIC FONT` = "Winner", #"Boric",
                                          `JOSÉ ANTONIO KAST RIST` = "Loser", # "Kast",
                                          `Blanco/Nulo.` = "Other", # "Other", "Null"
                                          `No voté.` = "Other", # "Other", "Didn't vote"
                                          `Prefiero no decir.` = "Other", # "Other", "Don'
                                          .ordered = TRUE)


# dat.chile <- dat.chile[ which(dat.chile£Boric.Kast=="Boric" | dat.chile£Boric.Kast == "K
# dat.chile£Boric.Kast <- droplevels(dat.chile£Boric.Kast)

# Losers / Winners (Q13)
dat.estonia$winners.losers <- recode_factor(dat.estonia$Q13,
                                            # winners
                                            `Eesti Reformierakond` = "Winner", #  113
                                            `Eesti 200` = "Winner", # 55
                                            `Sotsiaaldemokraatlik Erakond` = "Winner", # 9
                                            # losers
                                            `Eesti Keskerakond` = "Loser", # 53
                                            `Eesti Konservatiivne Rahvaerakond` = "Loser",
                                            `Isamaa Erakond` = "Loser", # 41
                                            `Eestimaa Ühendatud Vasakpartei` = "Loser",
                                            `Erakond Eestimaa Rohelised` = "Loser",
                                            `Erakond Parempoolsed` = "Loser",
                                            `Muu` = "Loser",
                                            # other
                                            `Ma ei käinud valimas` = "Other", # "Other",
                                            `Ma ei taha öelda` = "Other", # "Other",
                                            .ordered = TRUE)

## From Mart (2024)
# Winners (currently in governing coalition):
# 1. Eesti Reformierakond.
# 4. Eesti 200,
# 5. Sotsiaaldemokraatlik Erakond.
#
# Losers (in opposition):
# 2. Eesti Keskerakond
# 3. Eesti Konservatiivne Rahvaerakond
# 6. Isamaa Erakond

# Losers / Winners (Q13)
dat.estonia$Vote.Choice <- recode_factor(dat.estonia$Q13,
                                         `Sotsiaaldemokraatlik Erakond` = "Social Democrat
```

```r
                                                    `Eesti 200` = "Estonia 200",
                                                    `Eesti Keskerakond` = "Estonian Centre Party",
                                                    `Eesti Konservatiivne Rahvaerakond` = "Estonian C
                                                    `Eesti Reformierakond` = "Estonian Reform Party",
                                                    `Eestimaa Ühendatud Vasakpartei` = "United Left P
                                                    `Erakond Eestimaa Rohelised` = "Estonian Green Pa
                                                    `Erakond Parempoolsed` = "Party of Right-Wingers"
                                                    `Isamaa Erakond` = "Pro Patria Party",
                                                    `Ma ei käinud valimas` = "I did not vote",
                                                    `Ma ei taha öelda` = "I do not want to say",
                                                    `Muu` = "Other",
                                                    .ordered = TRUE)

# Language (Q7) // Only for Estonia data
dat.estonia$Language <- recode_factor(dat.estonia$Q7,
                                      `Eesti` = "Estonian", #  561
                                      `Mõni teine keel` = "Other", # 8
                                      #`Ukraina` = "Ukrainian", # 2
                                      `Ukraina` = "Other", # 2
                                      `Vene` = "Russian", # 68
                                      .ordered = TRUE)

# gender
dat.chile$Q4  <- recode_factor(as.factor(dat.chile$Q4), `Hombre` = "Man", `Mujer` = "Woman
dat.estonia$Q4  <- recode_factor(as.factor(dat.estonia$Q4), `Mees` = "Man", `Naine` = "Wom
Q4.chile <- dat.chile %>% select(Q4, Country)
Q4.estonia <- dat.estonia %>% select(Q4, Country)
Q4.d <- rbind(Q4.chile, Q4.estonia)

lattice::histogram(~ Q4.d$Q4 | Q4.d$Country , type = "percent", scales=list(y=list(rot=15)
```
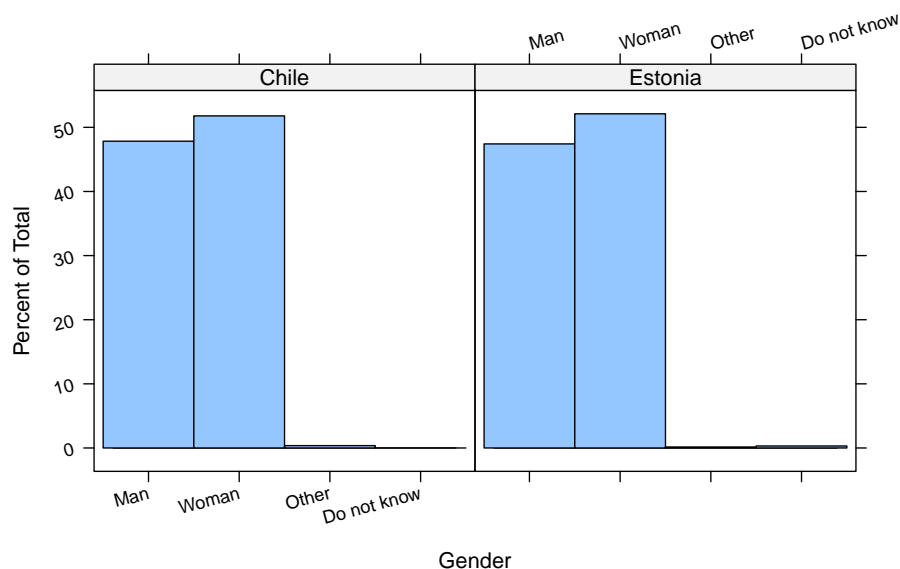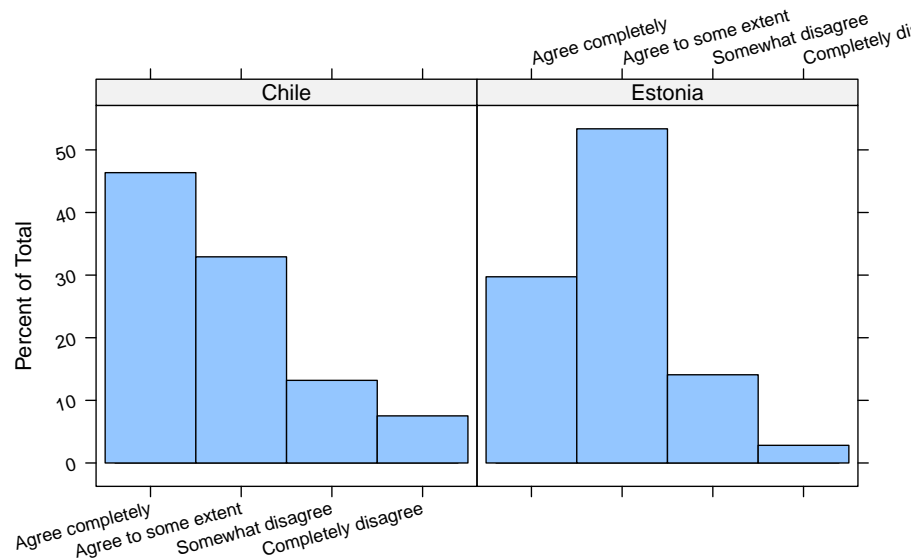
```r
# Democracy might have problems but it's better...
dat.chile$Q10_1  <- recode_factor(as.factor(dat.chile$Q10_1),
                                  "Completamente de acuerdo" = "Agree completely",
                                  "Un poco de acuerdo" = "Agree to some extent",
                                  "Un poco en desacuerdo" = "Somewhat disagree",
                                  "Completamente en desacuerdo" = "Completely disagree",
                                  .ordered = TRUE)

dat.estonia$Q10_1  <- recode_factor(as.factor(dat.estonia$Q10_1),
                                    "Täiesti nõus" = "Agree completely",
                                    "Nõus" = "Agree to some extent",
                                    "Ei ole nõus" = "Somewhat disagree",
                                    "Üldse ei ole nõus" = "Completely disagree",
                                    .ordered = TRUE)

Q10_1.chile <- dat.chile %>% select(Q10_1, Country)
Q10_1.estonia <- dat.estonia %>% select(Q10_1, Country)
Q10_1.d <- rbind(Q10_1.chile, Q10_1.estonia)
lattice::histogram(~ Q10_1.d$Q10_1 | Q10_1.d$Country , type = "percent", scales=list(y=lis
```

Democracy may have problems, but it is better than other forms of government.

```r
# Democracy might have problems but it's better... RECODED
dat.chile$Q10_1.r  <- recode_factor(as.factor(dat.chile$Q10_1),
                                    "Agree completely" = "Agree",
                                    "Agree to some extent" = "Agree",
                                    "Somewhat disagree" = "Disagree",
                                    "Completely disagree" = "Disagree",
                                    .ordered = TRUE)

dat.estonia$Q10_1.r  <- recode_factor(as.factor(dat.estonia$Q10_1),
                                      "Agree completely" = "Agree",
                                      "Agree to some extent" = "Agree",
                                      "Somewhat disagree" = "Disagree",
                                      "Completely disagree" = "Disagree",
                                      .ordered = TRUE)

# Democracy is not an effective form of government...better a strong leader
dat.chile$Q10_2  <- recode_factor(as.factor(dat.chile$Q10_2),
                                  "Completamente de acuerdo" = "Agree completely",
                                  "Un poco de acuerdo" = "Agree to some extent",
                                  "Un poco en desacuerdo" = "Somewhat disagree",
```

```
                                           "Completamente en desacuerdo" = "Completely disagree",
                                           .ordered = TRUE)

dat.estonia$Q10_2  <- recode_factor(as.factor(dat.estonia$Q10_2),
                                    "Täiesti nõus" = "Agree completely",
                                    "Nõus" = "Agree to some extent",
                                    "Ei ole nõus" = "Somewhat disagree",
                                    "Üldse ei ole nõus" = "Completely disagree",
                                    .ordered = TRUE)

Q10_2.chile <- dat.chile %>% select(Q10_2, Country)
Q10_2.estonia <- dat.estonia %>% select(Q10_2, Country)
Q10_2.d <- rbind(Q10_2.chile, Q10_2.estonia)
lattice::histogram(~ Q10_2.d$Q10_2 | Q10_2.d$Country , type = "percent", scales=list(y=lis
                   xlab = "Democracy is not an efficient form of government,\nand it would
```
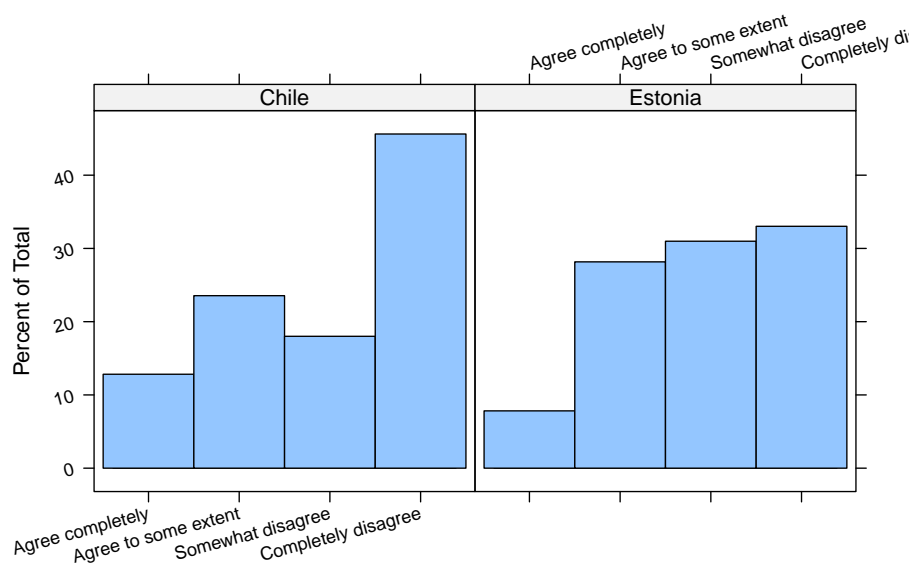

Democracy is not an efficient form of government,
and it would be better for [country] to be governed by a strong leader
who does not have to worry about winning elections.

```
# Democracy is not an effective form of government...better a strong leader RECODED
dat.chile$Q10_2.r  <- recode_factor(as.factor(dat.chile$Q10_2),
                                    "Agree completely" = "Agree",
                                    "Agree to some extent" = "Agree",
```

```r
                                        "Somewhat disagree" = "Disagree",
                                        "Completely disagree" = "Disagree",
                                        .ordered = TRUE)

dat.estonia$Q10_2.r  <- recode_factor(as.factor(dat.estonia$Q10_2),
                                        "Agree completely" = "Agree",
                                        "Agree to some extent" = "Agree",
                                        "Somewhat disagree" = "Disagree",
                                        "Completely disagree" = "Disagree",
                                        .ordered = TRUE)

# Civil rights that guarantee political protest should not be restricted
dat.chile$Q10_3  <- recode_factor(as.factor(dat.chile$Q10_3),  # right to protest
                                  "Completamente de acuerdo" = "Agree completely",
                                  "Un poco de acuerdo" = "Agree to some extent",
                                  "Un poco en desacuerdo" = "Somewhat disagree",
                                  "Completamente en desacuerdo" = "Completely disagree",
                                  .ordered = TRUE)

dat.estonia$Q10_3  <- recode_factor(as.factor(dat.estonia$Q10_3),  # right to protest
                                  "Täiesti nõus" = "Agree completely",
                                  "Nõus" = "Agree to some extent",
                                  "Ei ole nõus" = "Somewhat disagree",
                                  "Üldse ei ole nõus" = "Completely disagree",
                                  .ordered = TRUE)

Q10_3.chile <- dat.chile %>% select(Q10_3, Country)
Q10_3.estonia <- dat.estonia %>% select(Q10_3, Country)
Q10_3.d <- rbind(Q10_3.chile, Q10_3.estonia)
lattice::histogram(~ Q10_3.d$Q10_3 | Q10_3.d$Country , type = "percent", scales=list(y=lis
                 xlab = "Civil rights that guarantee political protest should not be res
```
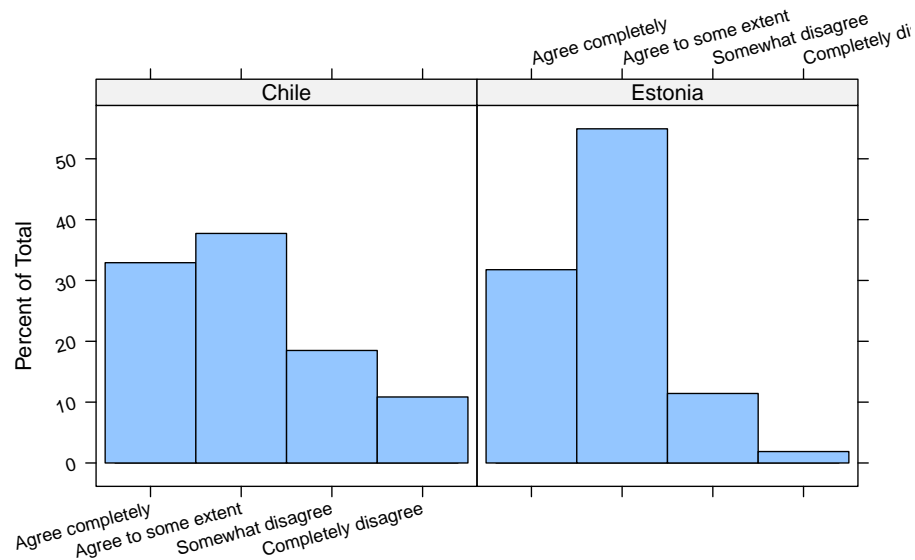
Civil rights that guarantee political protest should not be restricted.

```r
# Civil rights that guarantee political protest should not be restricted... RECODED
dat.chile$Q10_3.r  <- recode_factor(as.factor(dat.chile$Q10_3),  # right to protest
                              "Agree completely" = "Agree",
                              "Agree to some extent" = "Agree",
                              "Somewhat disagree" = "Disagree",
                              "Completely disagree" = "Disagree",
                              .ordered = TRUE)

dat.estonia$Q10_3.r  <- recode_factor(as.factor(dat.estonia$Q10_3),  # right to protest
                                "Agree completely" = "Agree",
                                "Agree to some extent" = "Agree",
                                "Somewhat disagree" = "Disagree",
                                "Completely disagree" = "Disagree",
                                .ordered = TRUE)

# It is important that there are free and politically independent media in [country]
dat.chile$Q10_4  <- recode_factor(as.factor(dat.chile$Q10_4),
                                "Completamente de acuerdo" = "Agree completely",
                                "Un poco de acuerdo" = "Agree to some extent",
                                "Un poco en desacuerdo" = "Somewhat disagree",
```

```
                                   "Completamente en desacuerdo" = "Completely disagree",
                                   .ordered = TRUE)

dat.estonia$Q10_4  <- recode_factor(as.factor(dat.estonia$Q10_4),
                                   "Täiesti nõus" = "Agree completely",
                                   "Nõus" = "Agree to some extent",
                                   "Ei ole nõus" = "Somewhat disagree",
                                   "Üldse ei ole nõus" = "Completely disagree",
                                   .ordered = TRUE)

Q10_4.chile <- dat.chile %>% select(Q10_4, Country)
Q10_4.estonia <- dat.estonia %>% select(Q10_4, Country)
Q10_4.d <- rbind(Q10_4.chile, Q10_4.estonia)
lattice::histogram(~ Q10_4.d$Q10_4 | Q10_4.d$Country , type = "percent", scales=list(y=lis
                  xlab = "It is important that there are free and politically independent
```
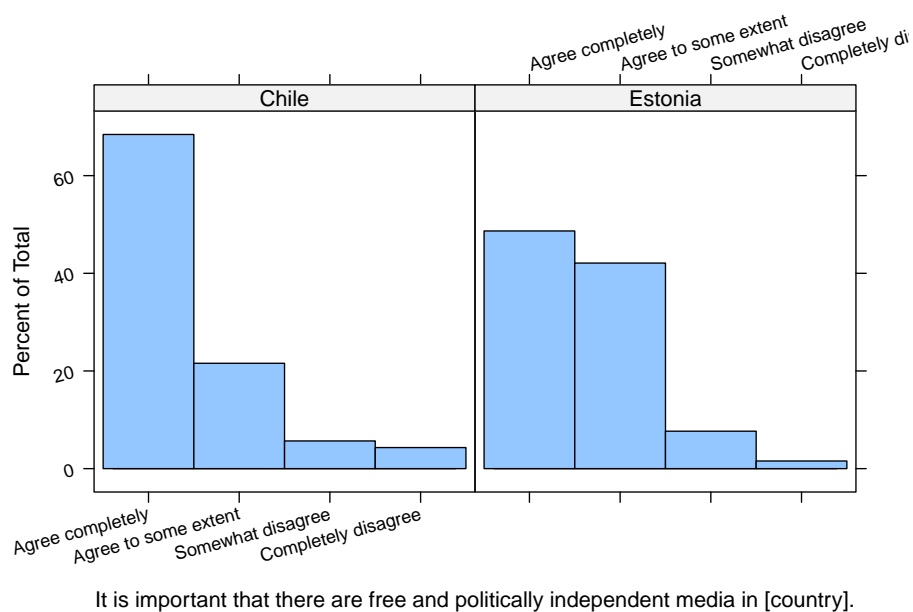

It is important that there are free and politically independent media in [country].

```
# It is important that there are free and politically independent media in [country]... RE
dat.chile$Q10_4.r  <- recode_factor(as.factor(dat.chile$Q10_4),
                                   "Agree completely" = "Agree",
                                   "Agree to some extent" = "Agree",
```

11

```r
                                       "Somewhat disagree" = "Disagree",
                                       "Completely disagree" = "Disagree",
                                       .ordered = TRUE)


dat.estonia$Q10_4.r  <- recode_factor(as.factor(dat.estonia$Q10_4),
                                  "Agree completely" = "Agree",
                                  "Agree to some extent" = "Agree",
                                  "Somewhat disagree" = "Disagree",
                                  "Completely disagree" = "Disagree",
                                  .ordered = TRUE)


# Governments should tax the rich to help the poor
dat.chile$Q12_1 = recode_factor(as.factor(dat.chile$Q12_1),
             "1" = "Not at all",
             "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8"="8", "9"="9",
             "10" = "Definitely essential",
             .ordered = TRUE)


dat.estonia$Q12_1 = recode_factor(as.factor(dat.estonia$Q12_1),
                                "1" = "Not at all",
                                "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8
                                "10" = "Definitely essential",
                                .ordered = TRUE)



Q12_1.chile <- dat.chile %>% select(Q12_1, Country)
Q12_1.estonia <- dat.estonia %>% select(Q12_1, Country)
Q12_1.d <- rbind(Q12_1.chile, Q12_1.estonia)
lattice::histogram(~ Q12_1.d$Q12_1 | Q12_1.d$Country , type = "percent", scales=list(y=lis
                xlab = "Governments should tax the rich to help the poor\nAn essential
```
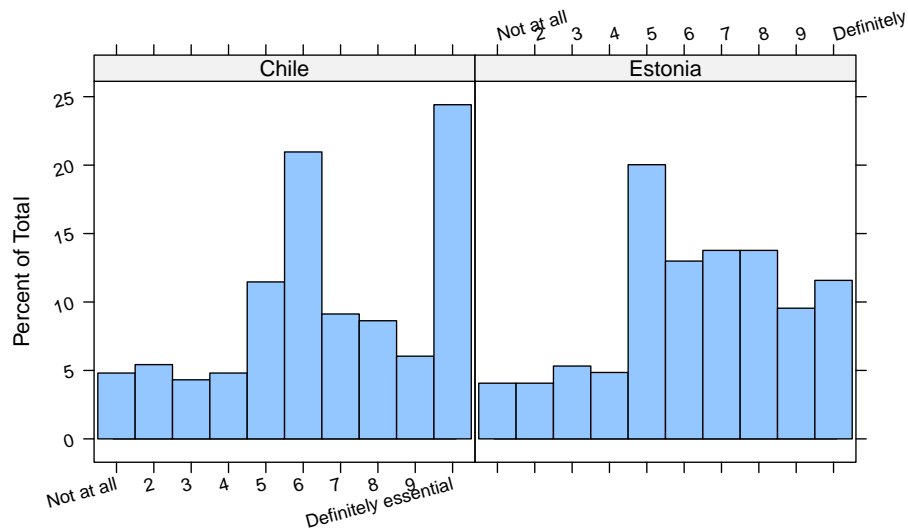
Governments should tax the rich to help the poor
An essential characteristic of democracy...

```r
# Governments should tax the rich to help the poor... RECODED
dat.chile$Q12_1.r = recode_factor(as.factor(dat.chile$Q12_1),
                                   "Not at all" = "Not essential",
                                   "2" = "Not essential",
                                   "3" = "Not essential",
                                   "4" = "Not essential",
                                   "5" = "Intermediate",
                                   "6" = "Intermediate",
                                   "7" = "Definitely essential",
                                   "8" = "Definitely essential",
                                   "9" = "Definitely essential",
                                   "Definitely essential" = "Definitely essential",
                                   .ordered = TRUE)

dat.estonia$Q12_1.r = recode_factor(as.factor(dat.estonia$Q12_1),
                                     "Not at all" = "Not essential",
                                     "2" = "Not essential",
                                     "3" = "Not essential",
                                     "4" = "Not essential",
                                     "5" = "Intermediate",
```

```r
                                            "6" = "Intermediate",
                                            "7" = "Definitely essential",
                                            "8" = "Definitely essential",
                                            "9" = "Definitely essential",
                                            "Definitely essential" = "Definitely essential",
                                            .ordered = TRUE)

# Thinking on a scale where one means far left and ten means far right, where do you place
dat.chile$Q8_1 = recode_factor(as.factor(dat.chile$Q8_1),
                                    "1" = "Left",
                                    "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8"=
                                    "10" = "Right",
                                    .ordered = TRUE)

dat.estonia$Q8_1 = recode_factor(as.factor(dat.estonia$Q8_1),
                                    "1" = "Left",
                                    "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8"=
                                    "10" = "Right",
                                    .ordered = TRUE)


Q8_1.chile <- dat.chile %>% select(Q8_1, Country)
Q8_1.estonia <- dat.estonia %>% select(Q8_1, Country)
Q8_1.d <- rbind(Q8_1.chile, Q8_1.estonia)
lattice::histogram(~ Q8_1.d$Q8_1 | Q8_1.d$Country , type = "percent", scales=list(y=list(r
                    xlab = "Thinking on a scale where one means far left and ten means far
```
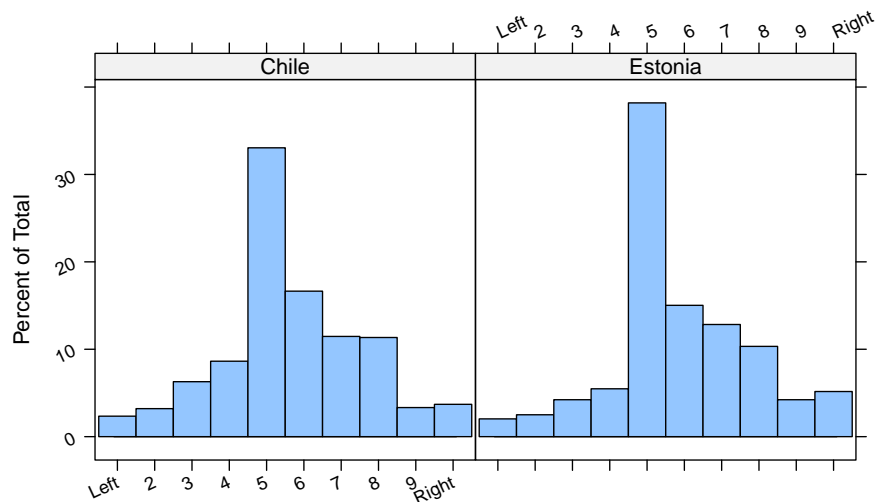
Thinking on a scale where one means far left and ten means far right,
where do you place yourself?

```r
# Thinking on a scale where one means far left and ten means far right, where do you place
dat.chile$Q8_1.r = recode_factor(as.factor(dat.chile$Q8_1),
                                 "Not at all" = "Left",
                                 "2" = "Left",
                                 "3" = "Left",
                                 "4" = "Left",
                                 "5" = "Center",
                                 "6" = "Center",
                                 "7" = "Right",
                                 "8" = "Right",
                                 "9" = "Right",
                                 "Right" = "Right",
                                 .ordered = TRUE)

dat.estonia$Q8_1.r = recode_factor(as.factor(dat.estonia$Q8_1),
                                   "Not at all" = "Left",
                                   "2" = "Left",
                                   "3" = "Left",
                                   "4" = "Left",
                                   "5" = "Center",
```

```r
                                         "6" = "Center",
                                         "7" = "Right",
                                         "8" = "Right",
                                         "9" = "Right",
                                         "Right" = "Right",
                                         .ordered = TRUE)


# Religious authorities have the final say in interpreting the country's laws.
dat.chile$Q12_2 = recode_factor(as.factor(dat.chile$Q12_2),
                                "1" = "Not at all",
                                "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8
                                "10" = "Definitely essential",
                                .ordered = TRUE)


dat.estonia$Q12_2 = recode_factor(as.factor(dat.estonia$Q12_2),
                                  "1" = "Not at all",
                                  "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8"=
                                  "10" = "Definitely essential",
                                  .ordered = TRUE)


Q12_2.chile <- dat.chile %>% select(Q12_2, Country)
Q12_2.estonia <- dat.estonia %>% select(Q12_2, Country)
Q12_2.d <- rbind(Q12_2.chile, Q12_2.estonia)
lattice::histogram(~ Q12_2.d$Q12_2 | Q12_2.d$Country , type = "percent", scales=list(y=lis
                   xlab = "Religious authorities have the final say in interpreting the co
```
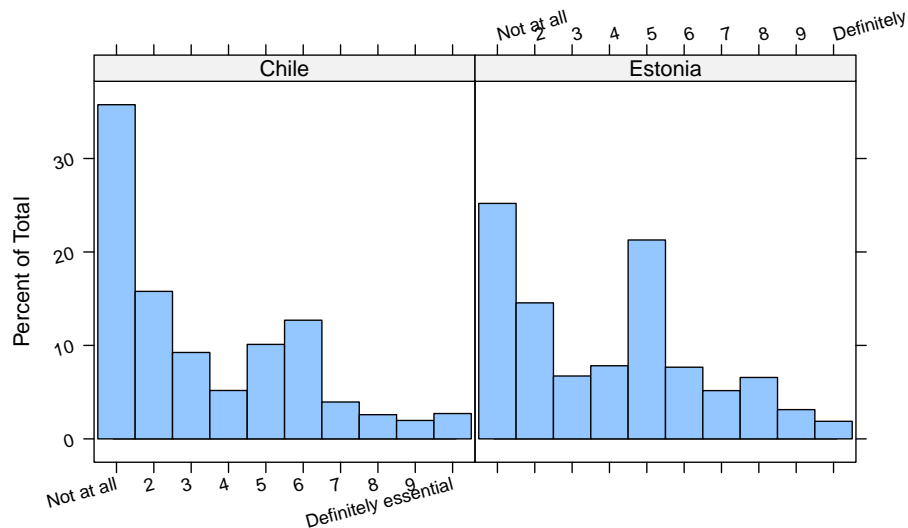
Religious authorities have the final say in interpreting the country's laws.
An essential characteristic of democracy...

```r
# Religious authorities have the final say in interpreting the country's laws... RECODED
dat.chile$Q12_2.r = recode_factor(as.factor(dat.chile$Q12_2),
                                  "Not at all" = "Not essential",
                                  "2" = "Not essential",
                                  "3" = "Not essential",
                                  "4" = "Not essential",
                                  "5" = "Intermediate",
                                  "6" = "Intermediate",
                                  "7" = "Definitely essential",
                                  "8" = "Definitely essential",
                                  "9" = "Definitely essential",
                                  "Definitely essential" = "Definitely essential",
                                  .ordered = TRUE)

dat.estonia$Q12_2.r = recode_factor(as.factor(dat.estonia$Q12_2),
                                    "Not at all" = "Not essential",
                                    "2" = "Not essential",
                                    "3" = "Not essential",
                                    "4" = "Not essential",
                                    "5" = "Intermediate",
```
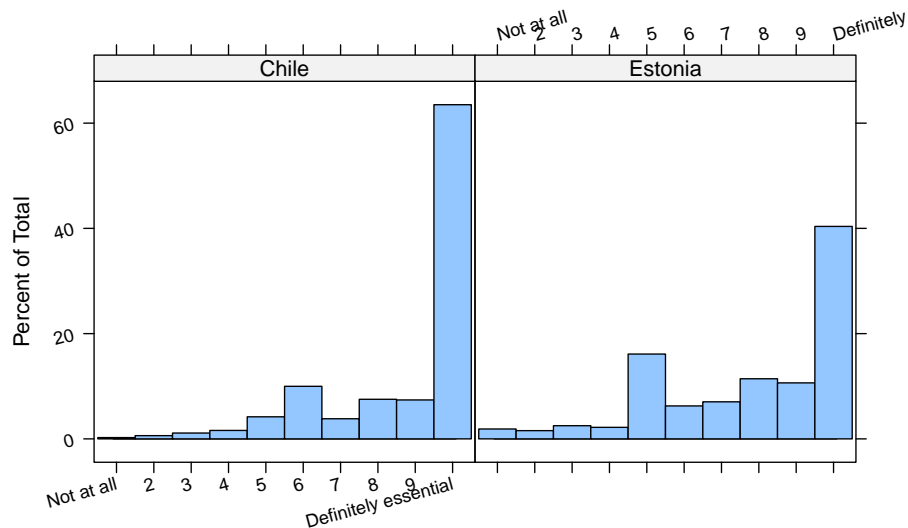
```r
                                      "6" = "Intermediate",
                                      "7" = "Definitely essential",
                                      "8" = "Definitely essential",
                                      "9" = "Definitely essential",
                                      "Definitely essential" = "Definitely essential",
                                      .ordered = TRUE)

# The people should choose their leaders in free elections.
dat.chile$Q12_3 = recode_factor(as.factor(dat.chile$Q12_3),
                                "1" = "Not at all",
                                "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8"=
                                "10" = "Definitely essential",
                                .ordered = TRUE)

dat.estonia$Q12_3 = recode_factor(as.factor(dat.estonia$Q12_3),
                                  "1" = "Not at all",
                                  "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8
                                  "10" = "Definitely essential",
                                  .ordered = TRUE)

Q12_3.chile <- dat.chile %>% select(Q12_3, Country)
Q12_3.estonia <- dat.estonia %>% select(Q12_3, Country)
Q12_3.d <- rbind(Q12_3.chile, Q12_3.estonia)
lattice::histogram(~ Q12_3.d$Q12_3 | Q12_3.d$Country , type = "percent", scales=list(y=lis
                   xlab = "The people should choose their leaders in free elections.\nAn e
```

The people should choose their leaders in free elections.
An essential characteristic of democracy...

```r
# The people should choose their leaders in free elections... RECODED
dat.chile$Q12_3.r = recode_factor(as.factor(dat.chile$Q12_3),
                                  "Not at all" = "Not essential",
                                  "2" = "Not essential",
                                  "3" = "Not essential",
                                  "4" = "Not essential",
                                  "5" = "Intermediate",
                                  "6" = "Intermediate",
                                  "7" = "Definitely essential",
                                  "8" = "Definitely essential",
                                  "9" = "Definitely essential",
                                  "Definitely essential" = "Definitely essential",
                                  .ordered = TRUE)

dat.estonia$Q12_3.r = recode_factor(as.factor(dat.estonia$Q12_3),
                                    "Not at all" = "Not essential",
                                    "2" = "Not essential",
                                    "3" = "Not essential",
                                    "4" = "Not essential",
                                    "5" = "Intermediate",
```

```
                                        "6" = "Intermediate",
                                        "7" = "Definitely essential",
                                        "8" = "Definitely essential",
                                        "9" = "Definitely essential",
                                        "Definitely essential" = "Definitely essential",
                                       .ordered = TRUE)

# The Army should take control of the state when the Government is not functioning well.
dat.chile$Q12_5 = recode_factor(as.factor(dat.chile$Q12_5),
                                "1" = "Not at all",
                                "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8"=
                                "10" = "Definitely essential",
                                .ordered = TRUE)

dat.estonia$Q12_5 = recode_factor(as.factor(dat.estonia$Q12_5),
                                  "1" = "Not at all",
                                  "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8
                                  "10" = "Definitely essential",
                                  .ordered = TRUE)

Q12_5.chile <- dat.chile %>% select(Q12_5, Country, winners.losers)
Q12_5.estonia <- dat.estonia %>% select(Q12_5, Country, winners.losers)
Q12_5.d <- rbind(Q12_5.chile, Q12_5.estonia)
lattice::histogram(~ Q12_5.d$Q12_5 | Q12_5.d$winners.losers * Q12_5.d$Country, type = "per
                   xlab = "The Army should take control of the state when the Government i
```
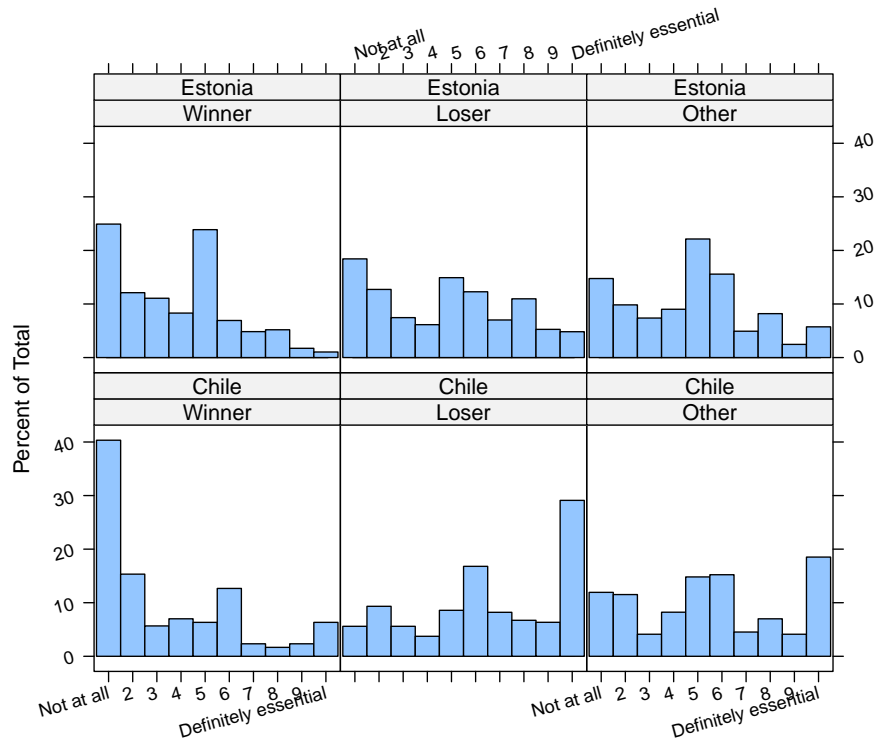
The Army should take control of the state when the Government is not functioning well.
An essential characteristic of democracy...

```r
# The Army should take control of the state when the Government is not functioning well...
dat.chile$Q12_5.r = recode_factor(as.factor(dat.chile$Q12_5),
                                  "Not at all" = "Not essential",
                                  "2" = "Not essential",
                                  "3" = "Not essential",
                                  "4" = "Not essential",
                                  "5" = "Intermediate",
                                  "6" = "Intermediate",
                                  "7" = "Definitely essential",
                                  "8" = "Definitely essential",
                                  "9" = "Definitely essential",
                                  "Definitely essential" = "Definitely essential",
                                  .ordered = TRUE)

dat.estonia$Q12_5.r = recode_factor(as.factor(dat.estonia$Q12_5),
                                    "Not at all" = "Not essential",
                                    "2" = "Not essential",
                                    "3" = "Not essential",
                                    "4" = "Not essential",
                                    "5" = "Intermediate",
```

```r
                                          "6" = "Intermediate",
                                          "7" = "Definitely essential",
                                          "8" = "Definitely essential",
                                          "9" = "Definitely essential",
                                          "Definitely essential" = "Definitely essential",
                                          .ordered = TRUE)

# The state should ensure that wages are more equal.
dat.chile$Q12_7 = recode_factor(as.factor(dat.chile$Q12_7),
                                "1" = "Not at all",
                                "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8"=
                                "10" = "Definitely essential",
                                .ordered = TRUE)

dat.estonia$Q12_7 = recode_factor(as.factor(dat.estonia$Q12_7),
                                  "1" = "Not at all",
                                  "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8"=
                                  "10" = "Definitely essential",
                                  .ordered = TRUE)

Q12_7.chile <- dat.chile %>% select(Q12_7, Country)
Q12_7.estonia <- dat.estonia %>% select(Q12_7, Country)
Q12_7.d <- rbind(Q12_7.chile, Q12_7.estonia)
lattice::histogram(~ Q12_7.d$Q12_7 | Q12_7.d$Country , type = "percent", scales=list(y=lis
                   xlab = "The state should ensure that wages are more equal.\nAn essentia
```
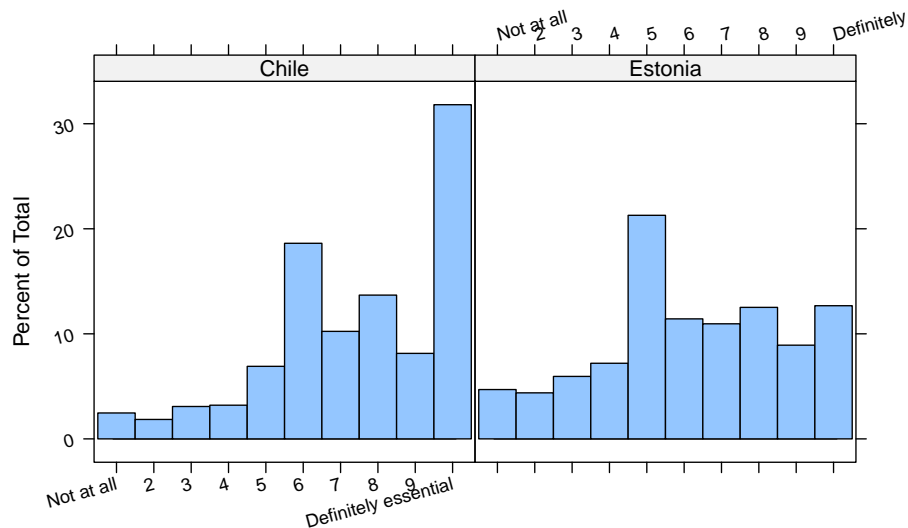
The state should ensure that wages are more equal.
An essential characteristic of democracy...

```r
# People should always obey their rulers.
dat.chile$Q12_8 = recode_factor(as.factor(dat.chile$Q12_8),
                                "1" = "Not at all",
                                "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8"=
                                "10" = "Definitely essential",
                                .ordered = TRUE)


dat.estonia$Q12_8 = recode_factor(as.factor(dat.estonia$Q12_8),
                                  "1" = "Not at all",
                                  "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8
                                  "10" = "Definitely essential",
                                  .ordered = TRUE)


Q12_8.chile <- dat.chile %>% select(Q12_8, Country)
Q12_8.estonia <- dat.estonia %>% select(Q12_8, Country)
Q12_8.d <- rbind(Q12_8.chile, Q12_8.estonia)
lattice::histogram(~ Q12_8.d$Q12_8 | Q12_8.d$Country , type = "percent", scales=list(y=lis
                   xlab = "People should always obey their rulers.\nAn essential character
```
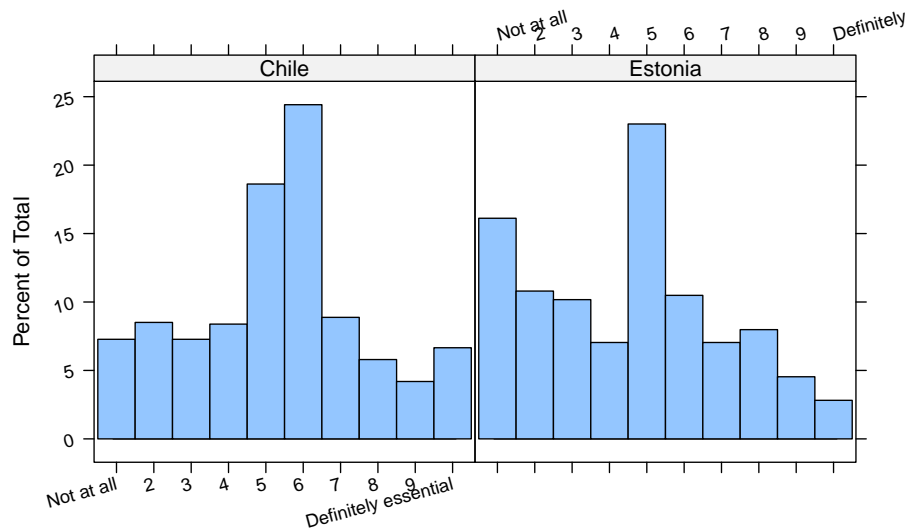
People should always obey their rulers.
An essential characteristic of democracy...

```r
# People should always obey their rulers... RECODED
dat.chile$Q12_8.r = recode_factor(as.factor(dat.chile$Q12_8),
                                   "Not at all" = "Not essential",
                                   "2" = "Not essential",
                                   "3" = "Not essential",
                                   "4" = "Not essential",
                                   "5" = "Intermediate",
                                   "6" = "Intermediate",
                                   "7" = "Definitely essential",
                                   "8" = "Definitely essential",
                                   "9" = "Definitely essential",
                                   "Definitely essential" = "Definitely essential",
                                   .ordered = TRUE)

dat.estonia$Q12_8.r = recode_factor(as.factor(dat.estonia$Q12_8),
                                     "Not at all" = "Not essential",
                                     "2" = "Not essential",
                                     "3" = "Not essential",
                                     "4" = "Not essential",
                                     "5" = "Intermediate",
```

```
                                           "6" = "Intermediate",
                                           "7" = "Definitely essential",
                                           "8" = "Definitely essential",
                                           "9" = "Definitely essential",
                                           "Definitely essential" = "Definitely essential",
                                           .ordered = TRUE)

# Women should have the same rights as men.
dat.chile$Q12_9 = recode_factor(as.factor(dat.chile$Q12_9),
                                "1" = "Not at all",
                                "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8"=
                                "10" = "Definitely essential",
                                .ordered = TRUE)

dat.estonia$Q12_9 = recode_factor(as.factor(dat.estonia$Q12_9),
                                  "1" = "Not at all",
                                  "2"="2", "3"="3", "4"="4", "5"="5", "6"="6", "7"="7", "8
                                  "10" = "Definitely essential",
                                  .ordered = TRUE)

Q12_9.chile <- dat.chile %>% select(Q12_9, Country)
Q12_9.estonia <- dat.estonia %>% select(Q12_9, Country)
Q12_9.d <- rbind(Q12_9.chile, Q12_9.estonia)
lattice::histogram(~ Q12_9.d$Q12_9 | Q12_9.d$Country , type = "percent", scales=list(y=lis
                   xlab = "Women should have the same rights as men.\nAn essential charact
```
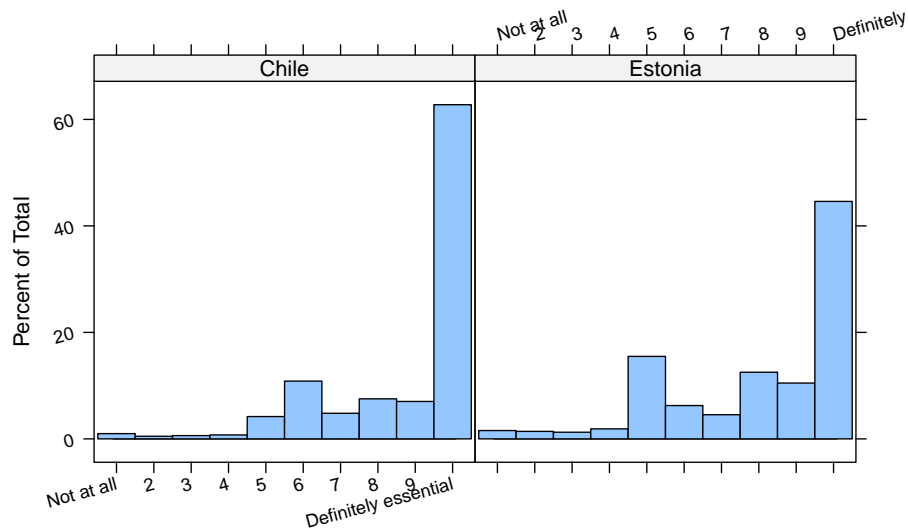
Women should have the same rights as men.
An essential characteristic of democracy...

```r
# Income Low/Mid/High
dat.chile$IncomeLowMidHigh <- recode_factor(
  dat.chile$Q6,
  `Menos de $35.000 mensuales liquidos` = "Low",
  `De $35.001 a $75.000 mensuales liquidos` = "Low",
  `De $75.001 a $110.000 mensuales liquidos` = "Low",
  `De $110.001 a $150.000 mensuales liquidos ` = "Low",
  `De $150.001 a $225.000 mensuales liquidos` = "Low",
  `De $225.001 a $350.000 mensuales liquidos` = "Low",
  `De $350.001 a $450.000 mensuales liquidos ` = "Mid",
  `De $450.001 a $550.000 mensuales liquidos` = "Mid",
  `De $550.001 a $700.000 mensuales liquidos` = "Mid",
  `De $700.001 a $1.000.000 mensuales liquidos` = "Mid",
  `De $1000.001 a $2.000.000 mensuales liquidos`   = "Mid",
  `De $2.000.001 a $3.000.000 mensuales liquidos` = "High",
  `De $3.000.001 a $4.500.000 mensuales liquidos` = "High",
  `Más de $4.500.000 mensuales liquidos` = "High",
  `No sabe / No contesta` = "Don't know",
  .ordered = TRUE)
```

```r
dat.estonia$IncomeLowMidHigh <- recode_factor(dat.estonia$Q6,
                                    `0-699` = "Low",
                                    `700-1099` = "Low",
                                    `1100-1399` = "Mid",
                                    `1400-1699` = "Mid",
                                    `1700-1999` = "Mid",
                                    `2000-2299` = "Mid",
                                    `2300-2899` = "High",
                                    `2900-3499` = "High",
                                    `3500-4199` = "High",
                                    `Rohkem kui 4200` = "High",
                                    .ordered = TRUE)


# Age young/old
dat.chile$Q3_young_old <- recode_factor(dat.chile$Q3,
                                    `18-24` = "Young",
                                    `25-34` = "Old",
                                    `35-44` = "Old", # ouch...
                                    `45-54` = "Old",
                                    `Más de 55` = "Old",
                                    .ordered = TRUE
                                    )

dat.estonia$Q3_young_old <- recode_factor(dat.estonia$Q3,
                                    `18-24` = "Young",
                                    `25-34` = "Old",
                                    `35-44` = "Old", # ouch...
                                    `45-54` = "Old",
                                    `Üle 55` = "Old",
                                    .ordered = TRUE)


# Education High/Low
dat.chile$Educ.HighLow <- recode_factor(
  dat.chile$Q5,
  `Menos que educación básica (menos que octavo básico).` = "Low",
  `Educación básica completa (hasta octavo básico).` = "Low",
  `Educación media completa.` = "Low",
  `Educación técnico-profesional completa.` = "Mid.",
  `Educación universitaria completa.` = "High",
  `Magister o Doctorado completo.` = "High",
  `Otro/Prefiero no decir` = "Other",
  .ordered = TRUE)

dat.estonia$Educ.HighLow <- recode_factor(
  dat.estonia$Q5,
  `Põhiariduseta` = "Low", #  "Without primary education"
  `Põhiharidus` = "Low", # "Primary education"
  `Keskharidus` = "Low", # "Secondary education"
  `Kutseharidus` = "Mid.", # "Vocational education"
```

```
  `Ülikooli bakalaureusekraad (3-4 aastat õpinguid)` = "High", # "University Bachelor's de
  `Magistri- või doktorikraad` = "High", # "Master's or Doctorate degree"
  `Ei tea` = "Other", # "Don't know"
  `Muu` = "Other", # "Other"
  .ordered = TRUE)

table(dat.chile$Educ.HighLow)

##
##    Low  Mid.  High Other
##    210   236   355    10

table(dat.estonia$Educ.HighLow)

##
##    Low  Mid.  High Other
##    207   135   294     3

# generate id variable
dat.chile$respondent = 1:nrow(dat.chile)
dat.chile <- dat.chile %>% select(respondent, everything()) # reorder

dat.estonia$respondent = 1:nrow(dat.estonia)
dat.estonia <- dat.estonia %>% select(respondent, everything()) # reorder

# summary stats demographics
p_load(vtable,kableExtra)

vars = c('Q3', # Age
         'Q4', # Gender
         'Q5', # Educ
         'Q6' # Income
         )

labs <- c('Age',
          'Gender',
          'Education',
          'Income')

# save dataset
save(dat.chile, file = "/Users/hectorbahamonde/research/democratic_backsliding/chile_data.
save(dat.estonia, file = "/Users/hectorbahamonde/research/democratic_backsliding/estonia_d
## ----


######################################
# Conjoint Data Prep [Estonia]
######################################

cat("\014")
```

```r
rm(list=ls())
setwd("/Users/hectorbahamonde/research/democratic_backsliding/")

# Pacman
if (!require("pacman")) install.packages("pacman"); library(pacman)

# Load Data
load("/Users/hectorbahamonde/research/democratic_backsliding/estonia_data.RData") # Load d

# name structure is = [4 features][h tasks][2 candidates]

# rename
p_load("dplyr")
dat.estonia <- dat.estonia %>%
  rename(
    # features
    "feature1a1" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.1.1_CBCONJOINT",
    "feature2a1" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.1.1_CBCONJOINT",
    "feature3a1" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.1.1_CBCONJOINT",
    "feature4a1" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.1.1_CBCONJOINT",
    "feature1a2" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.1.2_CBCONJOINT",
    "feature2a2" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.1.2_CBCONJOINT",
    "feature3a2" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.1.2_CBCONJOINT",
    "feature4a2" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.1.2_CBCONJOINT",
    "feature1b1" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.2.1_CBCONJOINT",
    "feature2b1" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.2.1_CBCONJOINT",
    "feature3b1" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.2.1_CBCONJOINT",
    "feature4b1" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.2.1_CBCONJOINT",
    "feature1b2" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.2.2_CBCONJOINT",
    "feature2b2" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.2.2_CBCONJOINT",
    "feature3b2" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.2.2_CBCONJOINT",
    "feature4b2" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.2.2_CBCONJOINT",
    "feature1c1" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.3.1_CBCONJOINT",
    "feature2c1" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.3.1_CBCONJOINT",
    "feature3c1" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.3.1_CBCONJOINT",
    "feature4c1" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.3.1_CBCONJOINT",
    "feature1c2" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.3.2_CBCONJOINT",
    "feature2c2" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.3.2_CBCONJOINT",
    "feature3c2" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.3.2_CBCONJOINT",
    "feature4c2" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.3.2_CBCONJOINT",
    "feature1d1" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.4.1_CBCONJOINT",
    "feature2d1" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.4.1_CBCONJOINT",
    "feature3d1" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.4.1_CBCONJOINT",
    "feature4d1" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.4.1_CBCONJOINT",
    "feature1d2" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.4.2_CBCONJOINT",
    "feature2d2" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.4.2_CBCONJOINT",
    "feature3d2" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.4.2_CBCONJOINT",
    "feature4d2" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.4.2_CBCONJOINT",
    "feature1e1" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.5.1_CBCONJOINT",
```

```r
    "feature2e1" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.5.1_CBCONJOINT",
    "feature3e1" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.5.1_CBCONJOINT",
    "feature4e1" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.5.1_CBCONJOINT",
    "feature1e2" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.5.2_CBCONJOINT",
    "feature2e2" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.5.2_CBCONJOINT",
    "feature3e2" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.5.2_CBCONJOINT",
    "feature4e2" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.5.2_CBCONJOINT",
    "feature1f1" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.6.1_CBCONJOINT",
    "feature2f1" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.6.1_CBCONJOINT",
    "feature3f1" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.6.1_CBCONJOINT",
    "feature4f1" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.6.1_CBCONJOINT",
    "feature1f2" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.6.2_CBCONJOINT",
    "feature2f2" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.6.2_CBCONJOINT",
    "feature3f2" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.6.2_CBCONJOINT",
    "feature4f2" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.6.2_CBCONJOINT",
    "feature1g1" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.7.1_CBCONJOINT",
    "feature2g1" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.7.1_CBCONJOINT",
    "feature3g1" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.7.1_CBCONJOINT",
    "feature4g1" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.7.1_CBCONJOINT",
    "feature1g2" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.7.2_CBCONJOINT",
    "feature2g2" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.7.2_CBCONJOINT",
    "feature3g2" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.7.2_CBCONJOINT",
    "feature4g2" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.7.2_CBCONJOINT",
    "feature1h1" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.8.1_CBCONJOINT",
    "feature2h1" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.8.1_CBCONJOINT",
    "feature3h1" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.8.1_CBCONJOINT",
    "feature4h1" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.8.1_CBCONJOINT",
    "feature1h2" = "d2796cd0.1d9f.4eb0.ba54.81aa3835a25f.8.2_CBCONJOINT",
    "feature2h2" = "X33b5bd0f.eaf2.4b73.8859.ff542e570638.8.2_CBCONJOINT",
    "feature3h2" = "X6965f897.4fef.400d.b747.aa7fd2ab1dc6.8.2_CBCONJOINT",
    "feature4h2" = "X567734f3.ac66.4120.a1a8.ee68b0db61a4.8.2_CBCONJOINT",
    # choice
    "choice_a" = "C1" ,
    "choice_b" = "C2" ,
    "choice_c" = "C3" ,
    "choice_d" = "C4" ,
    "choice_e" = "C5" ,
    "choice_f" = "C6" ,
    "choice_g" = "C7" ,
    "choice_h" = "C8")

# keep conjoint columns
conjoint.d.estonia <- dat.estonia %>% dplyr:: select(grep("feature", names(dat.estonia)),
                                            grep("respondent", names(dat.estonia)
                                            grep("choice", names(dat.estonia)))

# CREGGG Approach
p_load(cregg,dplyr)
# https://thomasleeper.com/cregg/
```

```r
# https://thomasleeper.com/cregg/reference/cj_tidy.html#examples
# "If a variable in the original format records which of the two profiles was chosen (e.g.

## profile_variables
list1 <- list(
  feature1 = list( # feature 1
    names(conjoint.d.estonia)[grep("^feature1.{1}1", names(conjoint.d.estonia))],
    names(conjoint.d.estonia)[grep("^feature1.{1}2", names(conjoint.d.estonia))]
  ),
  feature2 = list(# feature 2
    names(conjoint.d.estonia)[grep("^feature2.{1}1", names(conjoint.d.estonia))],
    names(conjoint.d.estonia)[grep("^feature2.{1}2", names(conjoint.d.estonia))]
  ),
  feature3 = list(# feature 3
    names(conjoint.d.estonia)[grep("^feature3.{1}1", names(conjoint.d.estonia))],
    names(conjoint.d.estonia)[grep("^feature3.{1}2", names(conjoint.d.estonia))]
  ),
  feature4 = list(# feature 4
    names(conjoint.d.estonia)[grep("^feature4.{1}1", names(conjoint.d.estonia))],
    names(conjoint.d.estonia)[grep("^feature4.{1}2", names(conjoint.d.estonia))]
  )
)

# task variables
list2 <- list(choice = paste0("choice_", letters[1:8]))

# perform reshape
conjoint.d.estonia <- cj_tidy(conjoint.d.estonia,
                              profile_variables = list1,
                              task_variables = list2,
                              id = ~ respondent)

# checking (if nothing happens, it's true)
# stopifnot(nrow(conjoint.d.estonia) == nrow(dat.estonia)*8*2) # 8 tasks and 2 candidates

# recode outcome so it is coded sensibly
conjoint.d.estonia$chosen <- ifelse((conjoint.d.estonia$profile == "A" & conjoint.d.estoni
                                    (conjoint.d.estonia$profile == "B" & conjoint.d.esto

# rename features
# p_load("dplyr")
conjoint.d.estonia <- conjoint.d.estonia %>%
  rename("attr.Gender" = "feature1",
         "attr.Age" = "feature2",
         "attr.Protest" = "feature3",
         "attr.Pensions" = "feature4")

# features to factor
```

```r
conjoint.d.estonia$attr.Gender = as.factor(conjoint.d.estonia$attr.Gender)
conjoint.d.estonia$attr.Age = as.factor(conjoint.d.estonia$attr.Age)
conjoint.d.estonia$attr.Protest = as.factor(conjoint.d.estonia$attr.Protest)
conjoint.d.estonia$attr.Pensions = as.factor(conjoint.d.estonia$attr.Pensions)

## Gender
conjoint.d.estonia$attr.Gender <- recode_factor(
  conjoint.d.estonia$attr.Gender,
  `Mees` = "Man",
  `Naine` = "Woman")

## Age
conjoint.d.estonia$attr.Age <- recode_factor(conjoint.d.estonia$attr.Age,
                                          `Alla 35` = "Younger than 35 years old",
                                          `35-50` = "Between 35-50 years old",
                                          `Üle 50` = "Over 50 years old")

## Protest
conjoint.d.estonia$attr.Protest <- recode_factor(
  conjoint.d.estonia$attr.Protest,
  `Kandidaat TOETAB meeleavaldusi tänavatel praeguse valitsuse destabiliseerimiseks.` =
    "The candidate SUPPORTS anti-government protest\nthat will seek to de-destabilize the
  `Kandidaat ON VASTU meeleavaldustele tänavatel praeguse valitsuse destabiliseerimiseks.`
    "The candidate OPPOSES anti-government protest\nthat will seek to de-destabilize the c

## Pensions
conjoint.d.estonia$attr.Pensions <- recode_factor(
  conjoint.d.estonia$attr.Pensions,
  `Kandidaat TOETAB pensionite tõstmist.` =
    "The candidate SUPPORTS increases in pensions for the elderly",
  `Kandidaat ON VASTU pensionite tõstmisele.` =
    "The candidate OPPOSES increases in pensions for the elderly")

#############################
# MERGING WITH LARGER DATASET [Estonia]
#############################

# Q10_1 # Democracy might have problems but it's better...
# Q10_2 # Democracy is not an effective form of government...better a strong leader
# Q10_3 # Civil rights that guarantee political protest should not be restricted
# Q10_4 # It is important that there are free and politically independent media in [countr
# Q12_1 # Governments should tax the rich to help the poor
# Q8_1 # Thinking on a scale where one means far left and ten means far right, where do yo
# Q12_2 # Religious authorities have the final say in interpreting the country's laws.
# Q12_3 # The people should choose their leaders in free elections.
# Q12_5 # The Army should take control of the state when the Government is not functioning
# Q12_7 # The state should ensure that wages are more equal.
# Q12_8 # People should always obey their rulers.
# Q12_9 # Women should have the same rights as men.
```

```r
# IncomeLowMidHigh # Income Low/Mid/High
# Q3_young_old # Age young/old
# Educ.HighLow # Education High/Low
# Vote.Choice
# Language

# subset vars from the big dataset to be merged to the conjoint dataset
dat.subset.estonia = dat.estonia %>% dplyr::select(
  respondent,
  winners.losers,
  Q10_1, Q10_1.r, Q10_2, Q10_2.r, Q10_3, Q10_3.r, Q10_4, Q10_4.r, Q12_1, Q12_1.r, Q8_1, Q8
  Q12_7, Q12_8, Q12_8.r, Q12_9, IncomeLowMidHigh, Q3_young_old, Educ.HighLow,
  Vote.Choice, Language
  )


# Merge
conjoint.d.estonia = merge(dat.subset.estonia, conjoint.d.estonia, by.x = "respondent")


#######################################
# Conjoint Data Prep [Chile]
#######################################

#cat("\014")
#rm(list=ls())
#setwd("/Users/hectorbahamonde/research/democratic_backsliding/")

# Pacman
if (!require("pacman")) install.packages("pacman"); library(pacman)

# Load Data
load("/Users/hectorbahamonde/research/democratic_backsliding/chile_data.RData") # Load dat


## ---- conjoint:prep ----
# name structure is = [4 features][h tasks][2 candidates]

# rename
p_load("dplyr")
dat.chile <- dat.chile %>%
  rename(
    # features
    "feature1a1" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.1.1_CBCONJOINT" ,
    "feature2a1" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.1.1_CBCONJOINT" ,
    "feature3a1" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.1.1_CBCONJOINT" ,
    "feature4a1" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.1.1_CBCONJOINT" ,
    "feature1a2" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.1.2_CBCONJOINT" ,
    "feature2a2" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.1.2_CBCONJOINT" ,
    "feature3a2" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.1.2_CBCONJOINT" ,
    "feature4a2" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.1.2_CBCONJOINT" ,
```

```
"feature1b1" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.2.1_CBCONJOINT" ,
"feature2b1" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.2.1_CBCONJOINT" ,
"feature3b1" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.2.1_CBCONJOINT" ,
"feature4b1" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.2.1_CBCONJOINT" ,
"feature1b2" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.2.2_CBCONJOINT" ,
"feature2b2" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.2.2_CBCONJOINT" ,
"feature3b2" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.2.2_CBCONJOINT" ,
"feature4b2" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.2.2_CBCONJOINT" ,
"feature1c1" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.3.1_CBCONJOINT" ,
"feature2c1" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.3.1_CBCONJOINT" ,
"feature3c1" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.3.1_CBCONJOINT" ,
"feature4c1" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.3.1_CBCONJOINT" ,
"feature1c2" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.3.2_CBCONJOINT" ,
"feature2c2" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.3.2_CBCONJOINT" ,
"feature3c2" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.3.2_CBCONJOINT" ,
"feature4c2" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.3.2_CBCONJOINT" ,
"feature1d1" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.4.1_CBCONJOINT" ,
"feature2d1" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.4.1_CBCONJOINT" ,
"feature3d1" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.4.1_CBCONJOINT" ,
"feature4d1" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.4.1_CBCONJOINT" ,
"feature1d2" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.4.2_CBCONJOINT" ,
"feature2d2" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.4.2_CBCONJOINT" ,
"feature3d2" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.4.2_CBCONJOINT" ,
"feature4d2" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.4.2_CBCONJOINT" ,
"feature1e1" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.5.1_CBCONJOINT" ,
"feature2e1" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.5.1_CBCONJOINT" ,
"feature3e1" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.5.1_CBCONJOINT" ,
"feature4e1" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.5.1_CBCONJOINT" ,
"feature1e2" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.5.2_CBCONJOINT" ,
"feature2e2" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.5.2_CBCONJOINT" ,
"feature3e2" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.5.2_CBCONJOINT" ,
"feature4e2" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.5.2_CBCONJOINT" ,
"feature1f1" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.6.1_CBCONJOINT" ,
"feature2f1" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.6.1_CBCONJOINT" ,
"feature3f1" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.6.1_CBCONJOINT" ,
"feature4f1" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.6.1_CBCONJOINT" ,
"feature1f2" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.6.2_CBCONJOINT" ,
"feature2f2" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.6.2_CBCONJOINT" ,
"feature3f2" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.6.2_CBCONJOINT" ,
"feature4f2" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.6.2_CBCONJOINT" ,
"feature1g1" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.7.1_CBCONJOINT" ,
"feature2g1" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.7.1_CBCONJOINT" ,
"feature3g1" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.7.1_CBCONJOINT" ,
"feature4g1" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.7.1_CBCONJOINT" ,
"feature1g2" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.7.2_CBCONJOINT" ,
"feature2g2" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.7.2_CBCONJOINT" ,
"feature3g2" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.7.2_CBCONJOINT" ,
"feature4g2" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.7.2_CBCONJOINT" ,
"feature1h1" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.8.1_CBCONJOINT" ,
```

```r
    "feature2h1" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.8.1_CBCONJOINT" ,
    "feature3h1" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.8.1_CBCONJOINT" ,
    "feature4h1" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.8.1_CBCONJOINT" ,
    "feature1h2" = "X13773a6d.7567.418e.9a54.5ed4a9e1be74.8.2_CBCONJOINT" ,
    "feature2h2" = "X5e2374ad.f827.494e.ae28.c6a2430508ba.8.2_CBCONJOINT" ,
    "feature3h2" = "X39381113.09d9.4f5e.a4d9.5ce7e8a27c88.8.2_CBCONJOINT" ,
    "feature4h2" = "b1429583.39b1.42fc.8ee2.2559edc4ca94.8.2_CBCONJOINT",
    # choice
    "choice_a" = "C1" ,
    "choice_b" = "C2" ,
    "choice_c" = "C3" ,
    "choice_d" = "C4" ,
    "choice_e" = "C5" ,
    "choice_f" = "C6" ,
    "choice_g" = "C7" ,
    "choice_h" = "C8")


# keep conjoint columns
conjoint.d.chile <- dat.chile %>% dplyr:: select(grep("feature", names(dat.chile)),
                                                  grep("respondent", names(dat.chile)),
                                                  grep("choice", names(dat.chile)))


# CREGGG Approach
p_load(cregg,dplyr)
# https://thomasleeper.com/cregg/
# https://thomasleeper.com/cregg/reference/cj_tidy.html#examples
# "If a variable in the original format records which of the two profiles was chosen (e.g.

## profile_variables
list1 <- list(
  feature1 = list( # feature 1
    names(conjoint.d.chile)[grep("^feature1.{1}1", names(conjoint.d.chile))],
    names(conjoint.d.chile)[grep("^feature1.{1}2", names(conjoint.d.chile))]
  ),
  feature2 = list(# feature 2
    names(conjoint.d.chile)[grep("^feature2.{1}1", names(conjoint.d.chile))],
    names(conjoint.d.chile)[grep("^feature2.{1}2", names(conjoint.d.chile))]
  ),
  feature3 = list(# feature 3
    names(conjoint.d.chile)[grep("^feature3.{1}1", names(conjoint.d.chile))],
    names(conjoint.d.chile)[grep("^feature3.{1}2", names(conjoint.d.chile))]
  ),
  feature4 = list(# feature 4
    names(conjoint.d.chile)[grep("^feature4.{1}1", names(conjoint.d.chile))],
    names(conjoint.d.chile)[grep("^feature4.{1}2", names(conjoint.d.chile))]
  )
)

# task variables
```

```r
list2 <- list(choice = paste0("choice_", letters[1:8]))

# perform reshape
conjoint.d.chile <- cj_tidy(conjoint.d.chile,
                             profile_variables = list1,
                             task_variables = list2,
                             id = ~ respondent)

# checking (if nothing happens, it's true)
# stopifnot(nrow(conjoint.d.chile) == nrow(dat.chile)*8*2) # 8 tasks and 2 candidates

# recode outcome so it is coded sensibly
conjoint.d.chile$chosen <- ifelse((conjoint.d.chile$profile == "A" & conjoint.d.chile$choi
                                   (conjoint.d.chile$profile == "B" & conjoint.d.chile$ch

# rename features
# p_load("dplyr")
conjoint.d.chile <- conjoint.d.chile %>%
  rename("attr.Gender" = "feature1", "attr.Age" = "feature2","attr.Protest" = "feature3","

# features to factor
conjoint.d.chile$attr.Gender = as.factor(conjoint.d.chile$attr.Gender)
conjoint.d.chile$attr.Age = as.factor(conjoint.d.chile$attr.Age)
conjoint.d.chile$attr.Protest = as.factor(conjoint.d.chile$attr.Protest)
conjoint.d.chile$attr.Pensions = as.factor(conjoint.d.chile$attr.Pensions)

# Translate // Recode

## Gender
conjoint.d.chile$attr.Gender <- recode_factor(conjoint.d.chile$attr.Gender, `Mujer` = "Wom

## Age
conjoint.d.chile$attr.Age <- recode_factor(conjoint.d.chile$attr.Age,
                                            `Menos de 35 años` = "Younger than 35 years old
                                            `Entre 35 y 50 años` = "Between 35-50 years old
                                            `Sobre 50 años` = "Over 50 years old")

## Protest
conjoint.d.chile$attr.Protest <- recode_factor(
  conjoint.d.chile$attr.Protest,
  `El candidato APOYA protestas que busquen desestabilizar el actual gobierno.` =
    "The candidate SUPPORTS anti-government protest\nthat will seek to de-destabilize the
  `El candidato SE OPONE a protestas que busquen desestabilizar el actual gobierno.` =
    "The candidate OPPOSES anti-government protest\nthat will seek to de-destabilize the c

## Pensions
conjoint.d.chile$attr.Pensions <- recode_factor(
  conjoint.d.chile$attr.Pensions,
  `El candidato APOYA un aumento en las pensiones para la tercera edad.` =
```

```r
    "The candidate SUPPORTS increases in pensions for the elderly",
  `El candidato SE OPONE a un aumento en las pensiones para la tercera edad.` =
    "The candidate OPPOSES increases in pensions for the elderly")


# use for analysis
# cj(conjoint.d.chile, chosen ~ attr.Gender + attr.Age + attr.Protest + attr.Pensions, id

# descriptive plotting
# plot(mm(conjoint.d.chile, chosen ~ attr.Gender + attr.Age + attr.Protest + attr.Pensions


##############################
# MERGING WITH LARGER DATASET
##############################


## Q10_1 # Democracy might have problems but it's better...
## Q10_2 # Democracy is not an effective form of government...better a strong leader
## Q10_3 # Civil rights that guarantee political protest should not be restricted
## Q10_4 # It is important that there are free and politically independent media in [count
## Q12_1 # Governments should tax the rich to help the poor
## Q8_1 # Thinking on a scale where one means far left and ten means far right, where do y
## Q12_2 # Religious authorities have the final say in interpreting the country's laws.
## Q12_3 # The people should choose their leaders in free elections.
## Q12_5 # The Army should take control of the state when the Government is not functionin
# Q12_7 # The state should ensure that wages are more equal.
## Q12_8 # People should always obey their rulers.
# Q12_9 # Women should have the same rights as men.
## IncomeLowMidHigh # Income Low/Mid/High
# Q3_young_old # Age young/old
## Educ.HighLow # Education High/Low

# subset vars from the big dataset to be merged to the conjoint dataset
dat.subset = dat.chile %>% dplyr::select(respondent, winners.losers, Educ.HighLow,
                                         IncomeLowMidHigh, Q3, Q3_young_old, Q4,
                                         Q10_1, Q10_1.r, Q10_2, Q10_2.r, Q10_3, Q10_3.r, Q
                                         Q12_2, Q12_2.r, Q12_3, Q12_3.r, Q12_5, Q12_5.r, Q

# Merge
conjoint.d.chile = merge(dat.subset, conjoint.d.chile, by.x = "respondent")
## ----

##############################
# CONOINT Data Analyses
##############################


# We explore sub-group differences in the propensity to support anti-systemic action by
# -respondents' partisanship,
# -democratic satisfaction and
# -support for democratic norms
```

```r
p_load(ggplot2)


#####################################################
# Marginal Means // Subgroup Analyses:
# Winners.Losers
#####################################################

mm_Winner_Loser_Chile <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr
                                             id = ~ respondent,
                                             estimate = "mm",
                                             by = ~winners.losers))

mm_Winner_Loser_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender +
                                             id = ~ respondent,
                                             estimate = "mm",
                                             by = ~winners.losers))



mm_Winner_Loser_Chile$Country <- "Chile"
mm_Winner_Loser_Estonia$Country <- "Estonia"

mm_Winner_Loser.d = rbind(mm_Winner_Loser_Chile, mm_Winner_Loser_Estonia)
mm_Winner_Loser.p <- plot(mm_Winner_Loser.d, group = "winners.losers", vline = 0.5)
mm_Winner_Loser.p %+% facet_wrap(~Country)
```
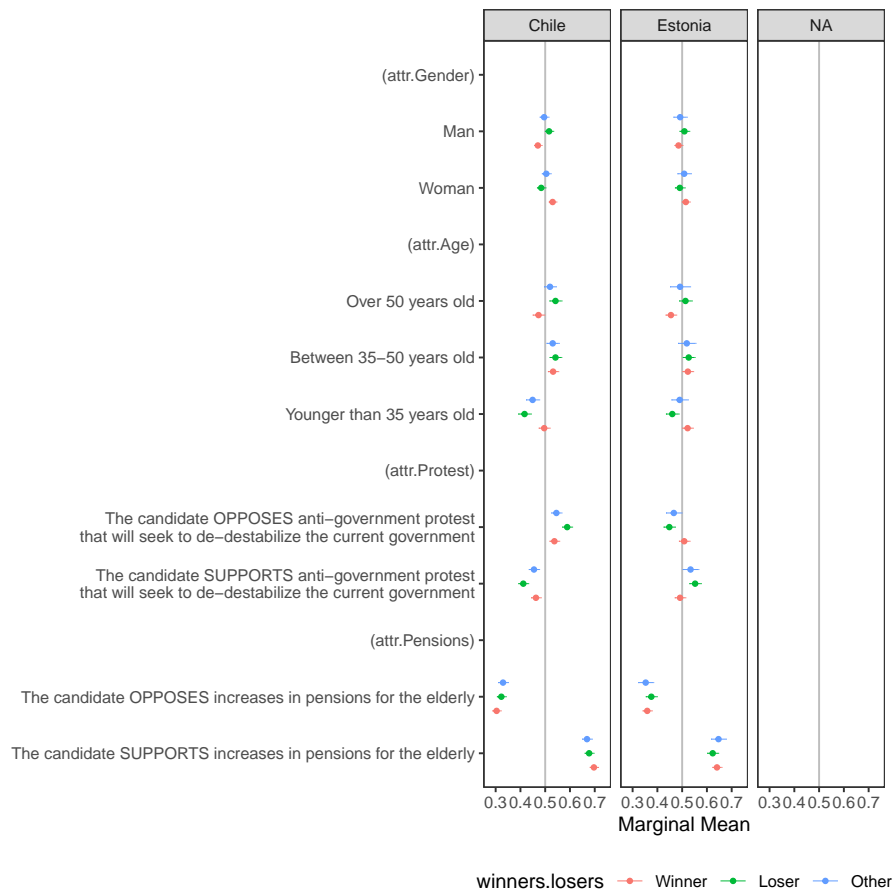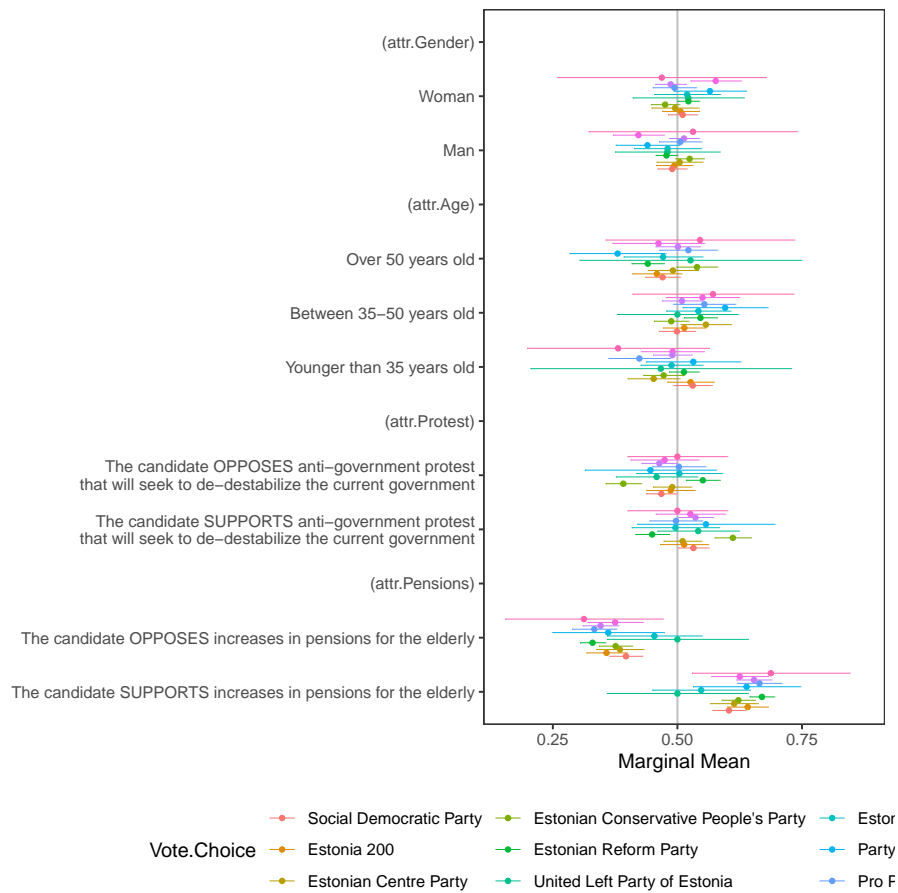
```
######################################################
# Marginal Means // Subgroup Analyses:
# Vote.Choice
# ONLY ESTONIA
######################################################

mm_Vote_Choice_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + a
                                   id = ~ respondent,
                                   estimate = "mm",
                                   by = ~Vote.Choice))
plot(mm_Vote_Choice_Estonia, group = "Vote.Choice", vline = 0.5)
```

Figure axis labels:

(attr.Gender)

Woman

Man

(attr.Age)

Over 50 years old

Between 35–50 years old

Younger than 35 years old

(attr.Protest)

The candidate OPPOSES anti–government protest
that will seek to de–destabilize the current government

The candidate SUPPORTS anti–government protest
that will seek to de–destabilize the current government

(attr.Pensions)

The candidate OPPOSES increases in pensions for the elderly

The candidate SUPPORTS increases in pensions for the elderly

0.25   0.50   0.75
Marginal Mean

Vote.Choice
Social Democratic Party   Estonian Conservative People's Party   Estor
Estonia 200   Estonian Reform Party   Party
Estonian Centre Party   United Left Party of Estonia   Pro F

```
####################################################
# Marginal Means // Subgroup Analyses:
# Language
# ONLY ESTONIA
####################################################

mm_Language_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + attr
                                           id = ~ respondent,
                                           estimate = "mm",
                                           by = ~Language))
plot(mm_Language_Estonia, group = "Language", vline = 0.5)
```
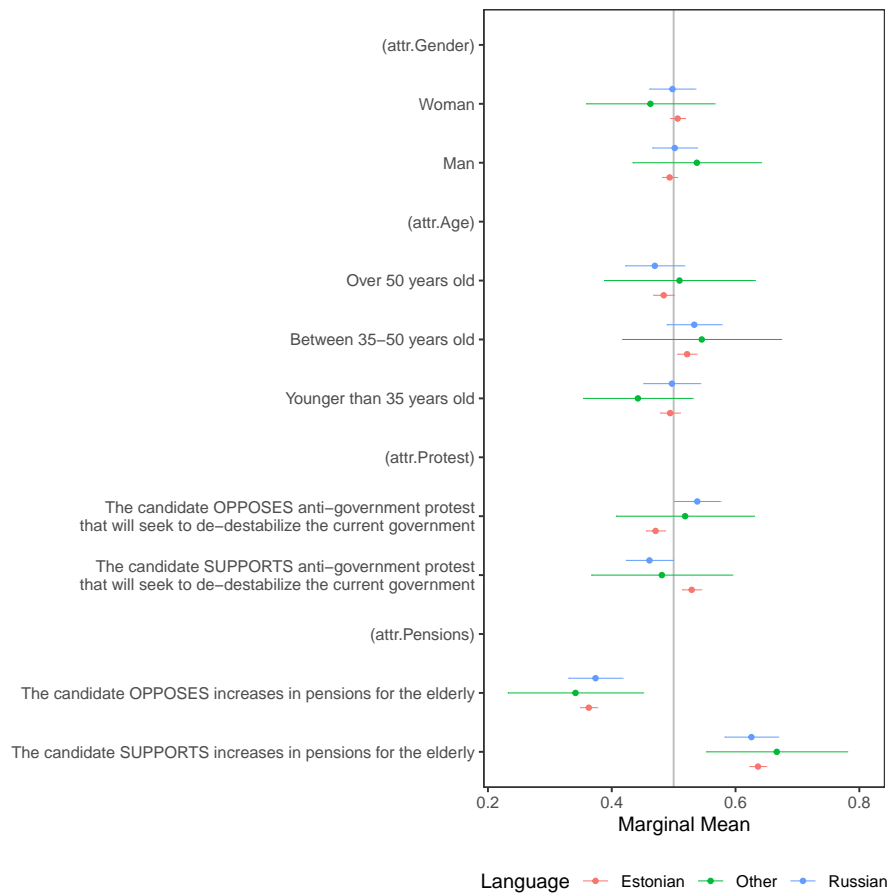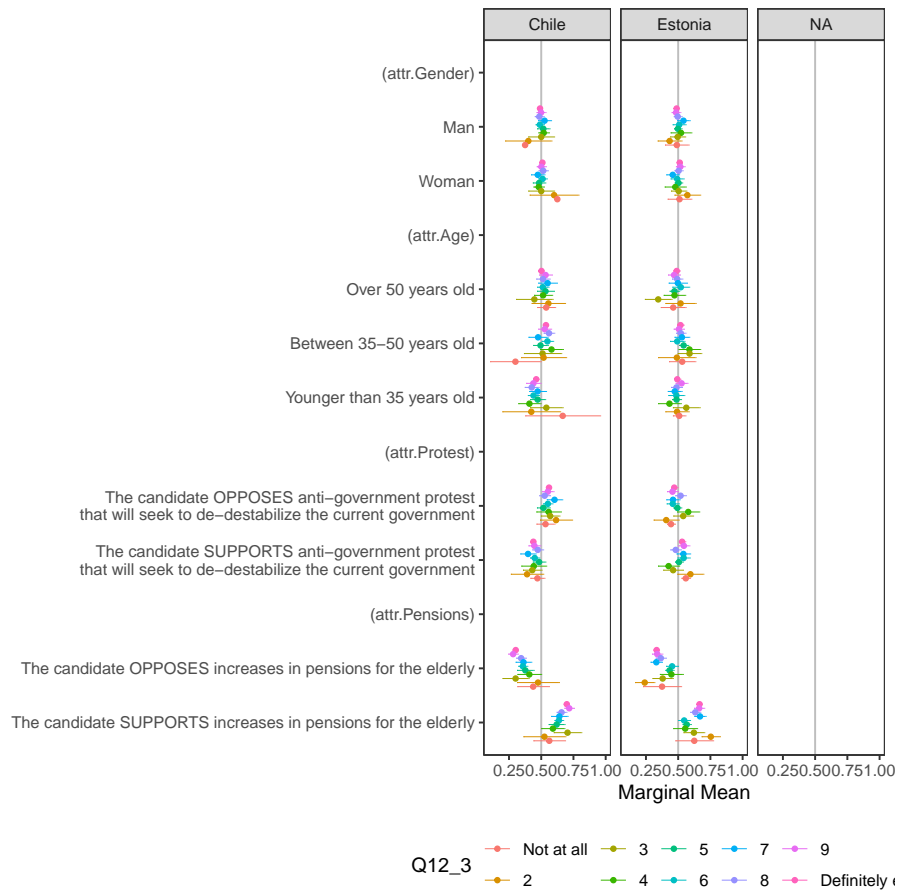
Language   ● Estonian   ● Other   ● Russian

```
##################################################
# Marginal Means // Subgroup Analyses:
# Q12_3 # The people should choose their leaders in free elections.
##################################################

mm_Free_Elec_Chile <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.Ag
                                  id = ~ respondent,
                                  estimate = "mm",
                                  by = ~Q12_3))

mm_Free_Elec_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + att
                                  id = ~ respondent,
                                  estimate = "mm",
                                  by = ~Q12_3))


mm_Free_Elec_Chile$Country <- "Chile"
mm_Free_Elec_Estonia$Country <- "Estonia"

mm_Free_Elec.d = rbind(mm_Free_Elec_Chile, mm_Free_Elec_Estonia)
```

```r
mm_Free_Elec.p <- plot(mm_Free_Elec.d, group = "Q12_3", vline = 0.5)
mm_Free_Elec.p %+% facet_wrap(~Country)
```



```
####################################################
# Marginal Means // Subgroup Analyses:
# Q12_3 # The people should choose their leaders in free elections... RECODED
####################################################

mm_Free_Elec_Chile.r <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.
                              id = ~ respondent,
                              estimate = "mm",
                              by = ~Q12_3.r))

mm_Free_Elec_Estonia.r <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + a
                              id = ~ respondent,
                              estimate = "mm",
                              by = ~Q12_3.r))


mm_Free_Elec_Chile.r$Country <- "Chile"
```

```
mm_Free_Elec_Estonia.r$Country <- "Estonia"

mm_Free_Elec.d.r = rbind(mm_Free_Elec_Chile.r, mm_Free_Elec_Estonia.r)
mm_Free_Elec.p.r <- plot(mm_Free_Elec.d.r, group = "Q12_3.r", vline = 0.5)
mm_Free_Elec.p.r %+% facet_wrap(~Country)
```
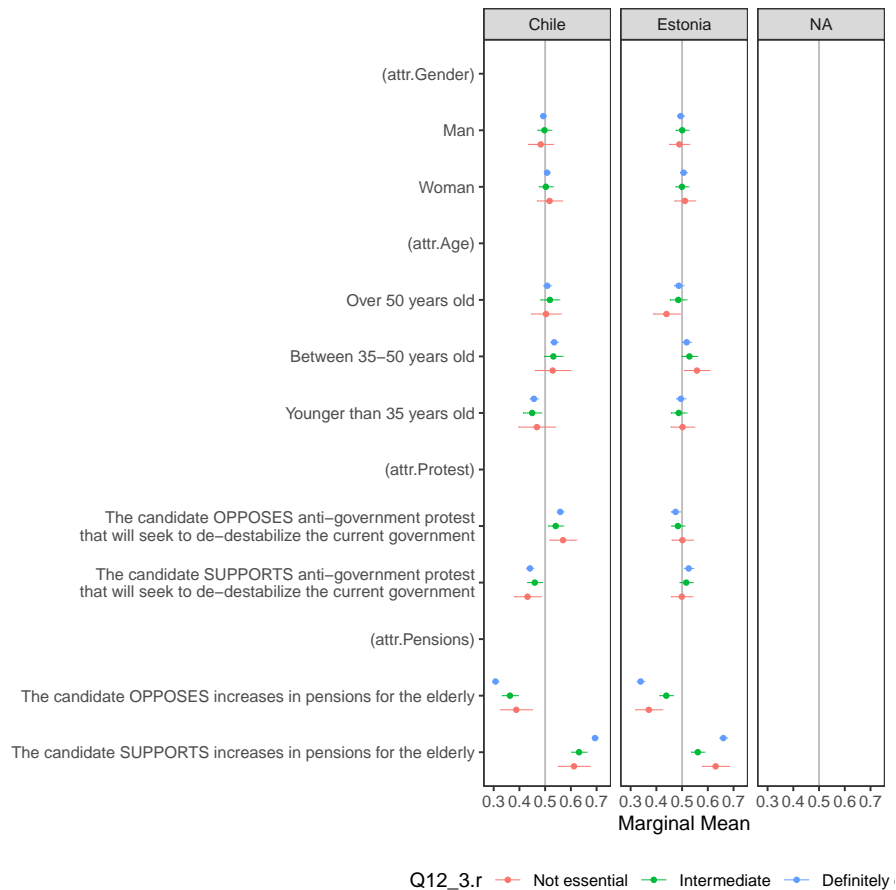


```
#######################################################
# Marginal Means // Subgroup Analyses:
# Q12_2 # Religious authorities have the final say in interpreting the country's laws.
#######################################################

mm_Rel_Auth_Chile <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.Age
                                  id = ~ respondent,
                                  estimate = "mm",
                                  by = ~Q12_2))

mm_Rel_Auth_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + attr
                                  id = ~ respondent,
                                  estimate = "mm",
                                  by = ~Q12_2))
```

```
mm_Rel_Auth_Chile$Country <- "Chile"
mm_Rel_Auth_Estonia$Country <- "Estonia"

mm_Rel_Auth.d = rbind(mm_Rel_Auth_Chile, mm_Rel_Auth_Estonia)
mm_Rel_Auth.p <- plot(mm_Rel_Auth.d, group = "Q12_2", vline = 0.5)
mm_Rel_Auth.p %+% facet_wrap(~Country)
```
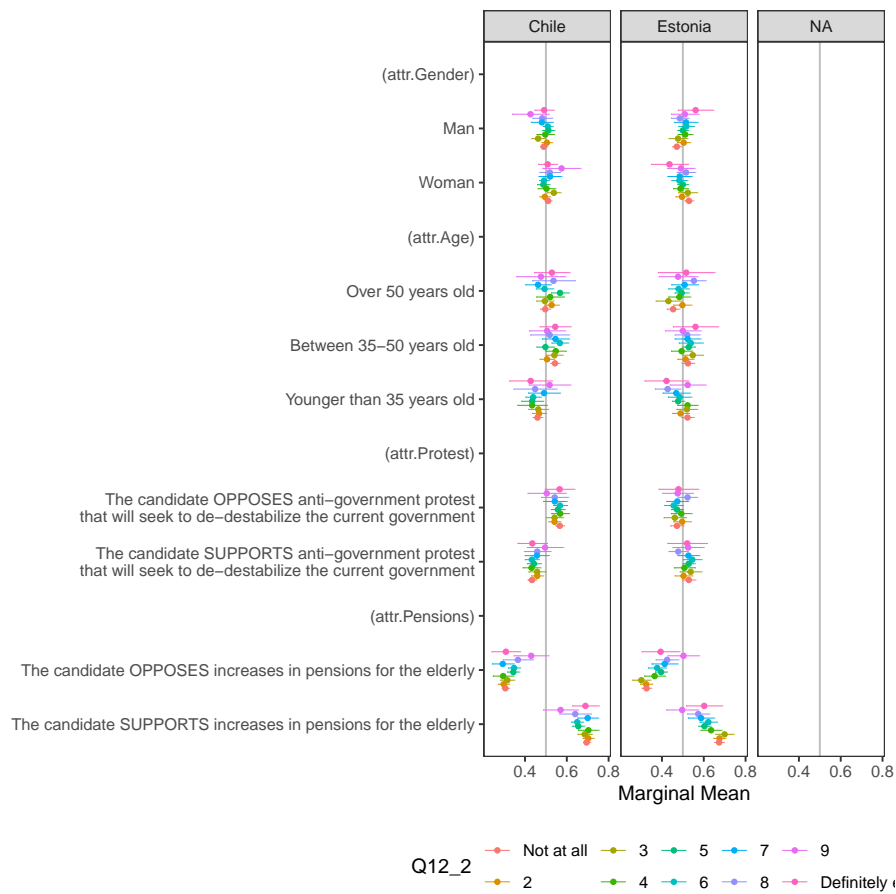


```
#################################################
# Marginal Means // Subgroup Analyses:
# Q12_2 # Religious authorities have the final say in interpreting the country's laws... R
#################################################

mm_Rel_Auth_Chile.r <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.A
                                       id = ~ respondent,
                                       estimate = "mm",
                                       by = ~Q12_2.r))

mm_Rel_Auth_Estonia.r <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + at
```

```
                                            id = ~ respondent,
                                            estimate = "mm",
                                            by = ~Q12_2.r))


mm_Rel_Auth_Chile.r$Country <- "Chile"
mm_Rel_Auth_Estonia.r$Country <- "Estonia"

mm_Rel_Auth.d.r = rbind(mm_Rel_Auth_Chile.r, mm_Rel_Auth_Estonia.r)
mm_Rel_Auth.p.r <- plot(mm_Rel_Auth.d.r, group = "Q12_2.r", vline = 0.5)
mm_Rel_Auth.p.r %+% facet_wrap(~Country)
```
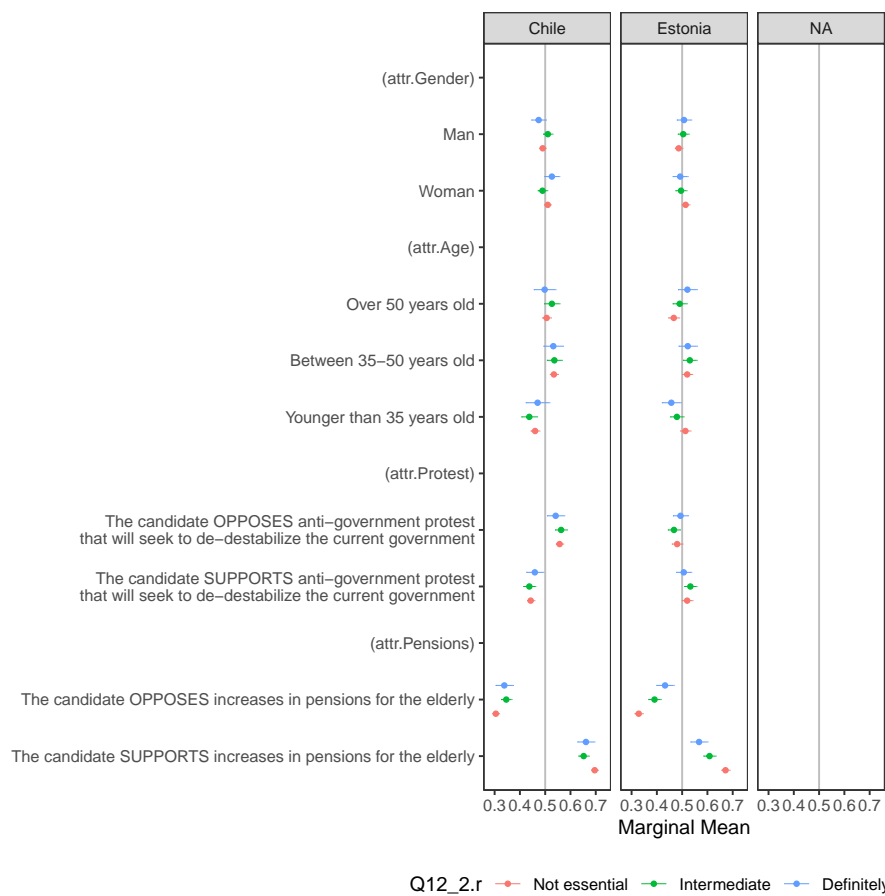


```
####################################################
# Marginal Means // Subgroup Analyses:
# Q12_8 # People should always obey their rulers.
####################################################

mm_Obey_Rulers_Chile <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.
                                            id = ~ respondent,
                                            estimate = "mm",
```

```
                                     by = ~Q12_8))

mm_Obey_Rulers_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + a
                                     id = ~ respondent,
                                     estimate = "mm",
                                     by = ~Q12_8))


mm_Obey_Rulers_Chile$Country <- "Chile"
mm_Obey_Rulers_Estonia$Country <- "Estonia"

mm_Obey_Rulers.d = rbind(mm_Obey_Rulers_Chile, mm_Obey_Rulers_Estonia)
mm_Obey_Rulers.p <- plot(mm_Obey_Rulers.d, group = "Q12_8", vline = 0.5)
mm_Obey_Rulers.p %+% facet_wrap(~Country)
```
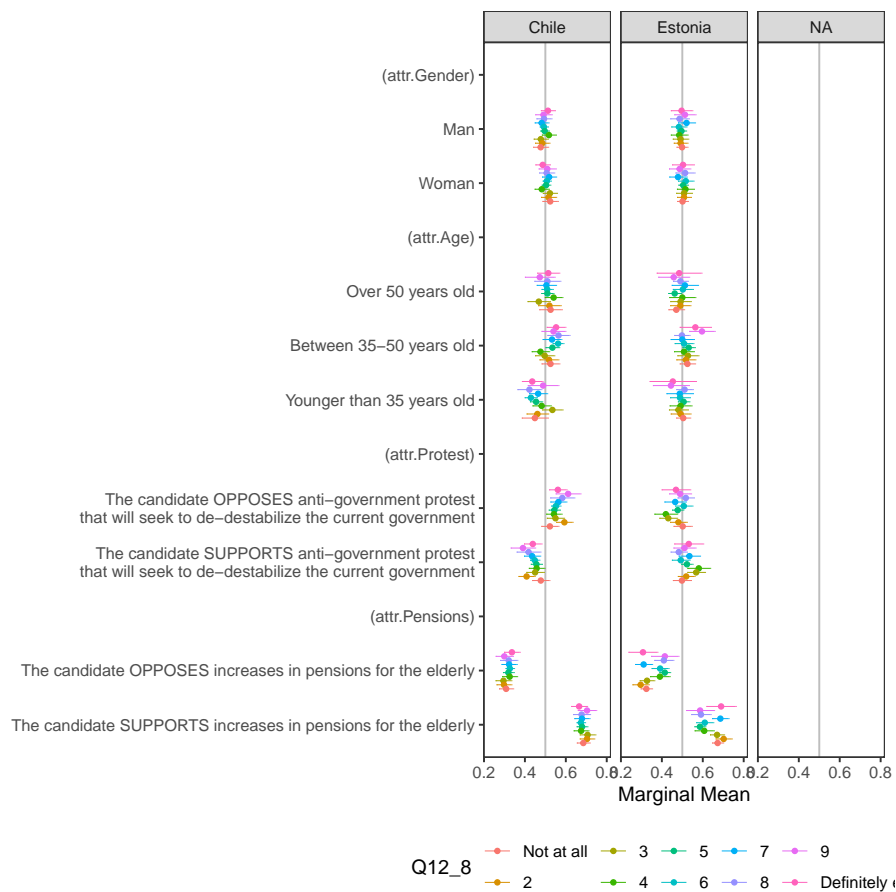


```
####################################################
# Marginal Means // Subgroup Analyses:
# Q12_8 # People should always obey their rulers... RECODED
####################################################
```

```
mm_Obey_Rulers_Chile.r <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + att
                                   id = ~ respondent,
                                   estimate = "mm",
                                   by = ~Q12_8.r))

mm_Obey_Rulers_Estonia.r <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender +
                                   id = ~ respondent,
                                   estimate = "mm",
                                   by = ~Q12_8.r))


mm_Obey_Rulers_Chile.r$Country <- "Chile"
mm_Obey_Rulers_Estonia.r$Country <- "Estonia"

mm_Obey_Rulers.d.r = rbind(mm_Obey_Rulers_Chile.r, mm_Obey_Rulers_Estonia.r)
mm_Obey_Rulers.p.r <- plot(mm_Obey_Rulers.d.r, group = "Q12_8.r", vline = 0.5)
mm_Obey_Rulers.p.r %+% facet_wrap(~Country)
```


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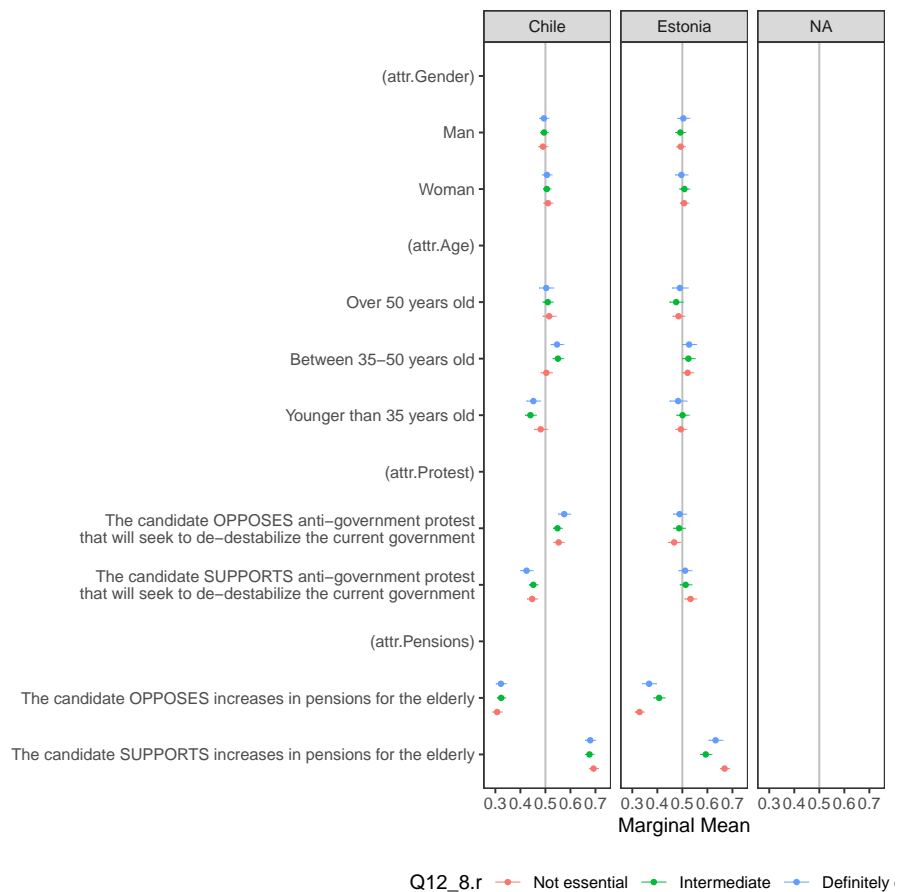
```r
####################################################
# Marginal Means // Subgroup Analyses:
# Q10_4 # It is important that there are free and politically independent media in [countr
####################################################
mm_Free_Media_Chile <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.A
                                           id = ~ respondent,
                                           estimate = "mm",
                                           by = ~Q10_4))


mm_Free_Media_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + at
                                             id = ~ respondent,
                                             estimate = "mm",
                                             by = ~Q10_4))



mm_Free_Media_Chile$Country <- "Chile"
mm_Free_Media_Estonia$Country <- "Estonia"

mm_Free_Media.d = rbind(mm_Free_Media_Chile, mm_Free_Media_Estonia)
mm_Free_Media.p <- plot(mm_Free_Media.d, group = "Q10_4", vline = 0.5)
mm_Free_Media.p %+% facet_wrap(~Country)
```
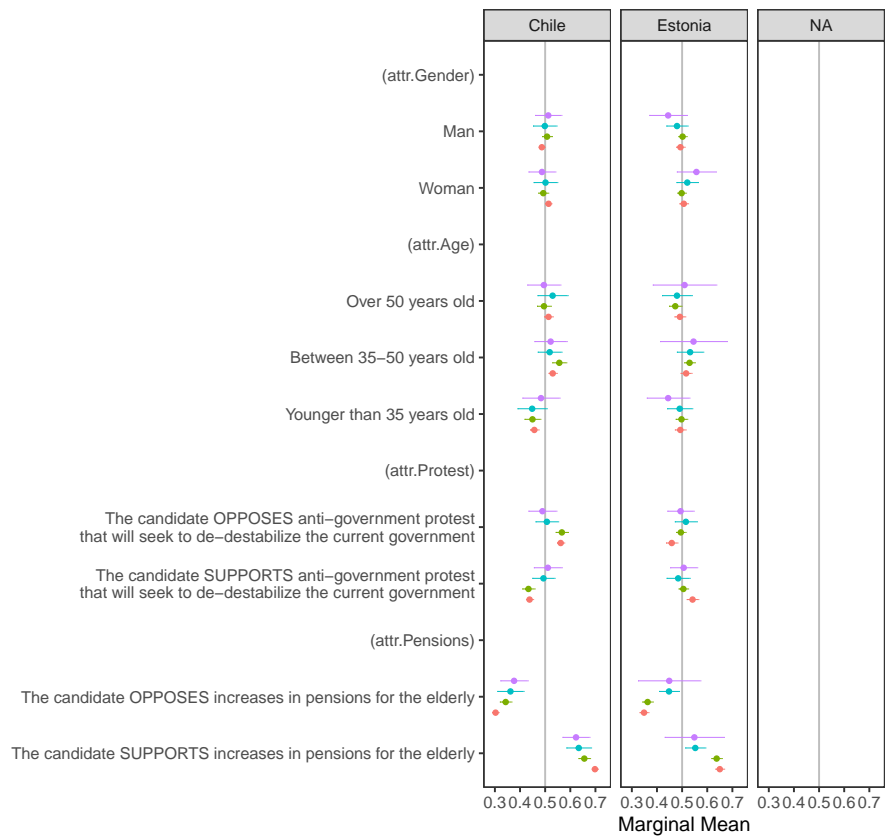
Q10_4 — ● Agree completely — ● Agree to some extent — ● Somewhat disagre

```
#####################################################
# Marginal Means // Subgroup Analyses:
# Q10_4.r # It is important that there are free and politically independent media in [coun
#####################################################
mm_Free_Media_Chile.r <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr
                                    id = ~ respondent,
                                    estimate = "mm",
                                    by = ~Q10_4.r))

mm_Free_Media_Estonia.r <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender +
                                    id = ~ respondent,
                                    estimate = "mm",
                                    by = ~Q10_4.r))


mm_Free_Media_Chile.r$Country <- "Chile"
mm_Free_Media_Estonia.r$Country <- "Estonia"

mm_Free_Media.d.r = rbind(mm_Free_Media_Chile.r, mm_Free_Media_Estonia.r)
mm_Free_Media.p.r <- plot(mm_Free_Media.d.r, group = "Q10_4.r", vline = 0.5)
```
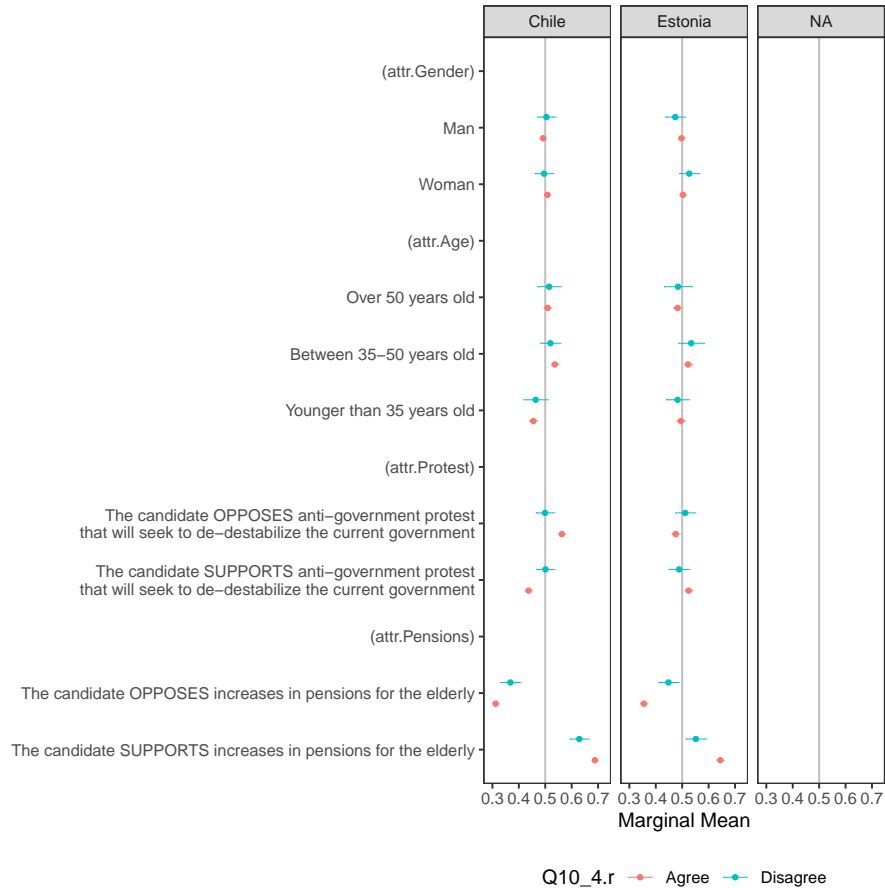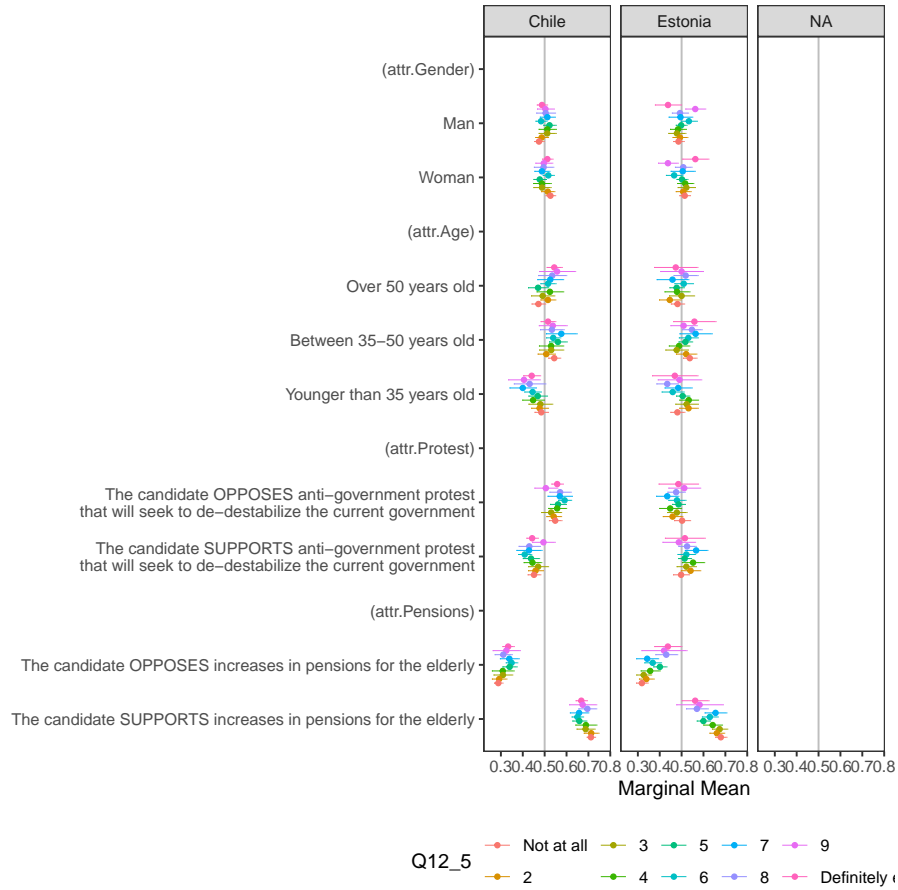
```
mm_Free_Media.p.r %+% facet_wrap(~Country)
```



```
#####################################################
# Marginal Means // Subgroup Analyses
# Q12_5 : The Army should take control of the state when the Government is not functioning
#####################################################
mm_Army_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + attr.Age
                                    id = ~ respondent,
                                    estimate = "mm",
                                    by = ~Q12_5))

mm_Army_Chile <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.Age + a
                                    id = ~respondent,
                                    estimate = "mm",
                                    by = ~Q12_5))

mm_Army_Chile$Country <- "Chile"
mm_Army_Estonia$Country <- "Estonia"

mm_Army.d = rbind(mm_Army_Chile, mm_Army_Estonia)
```

```r
mm_Army.p <- plot(mm_Army.d, group = "Q12_5", vline = 0.5)
mm_Army.p %+% facet_wrap(~Country)
```



```
####################################################
# Marginal Means // Subgroup Analyses
# Q12_5 : The Army should take control of the state when the Government is not functioning
####################################################
mm_Army_Estonia.r <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + attr.A
                                         id = ~ respondent,
                                         estimate = "mm",
                                         by = ~Q12_5.r))

mm_Army_Chile.r <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.Age +
                                       id = ~respondent,
                                       estimate = "mm",
                                       by = ~Q12_5.r))

mm_Army_Chile.r$Country <- "Chile"
mm_Army_Estonia.r$Country <- "Estonia"
```

```r
mm_Army.d.r = rbind(mm_Army_Chile.r, mm_Army_Estonia.r)
mm_Army.p.r <- plot(mm_Army.d.r, group = "Q12_5.r", vline = 0.5)
mm_Army.p.r %+% facet_wrap(~Country)
```
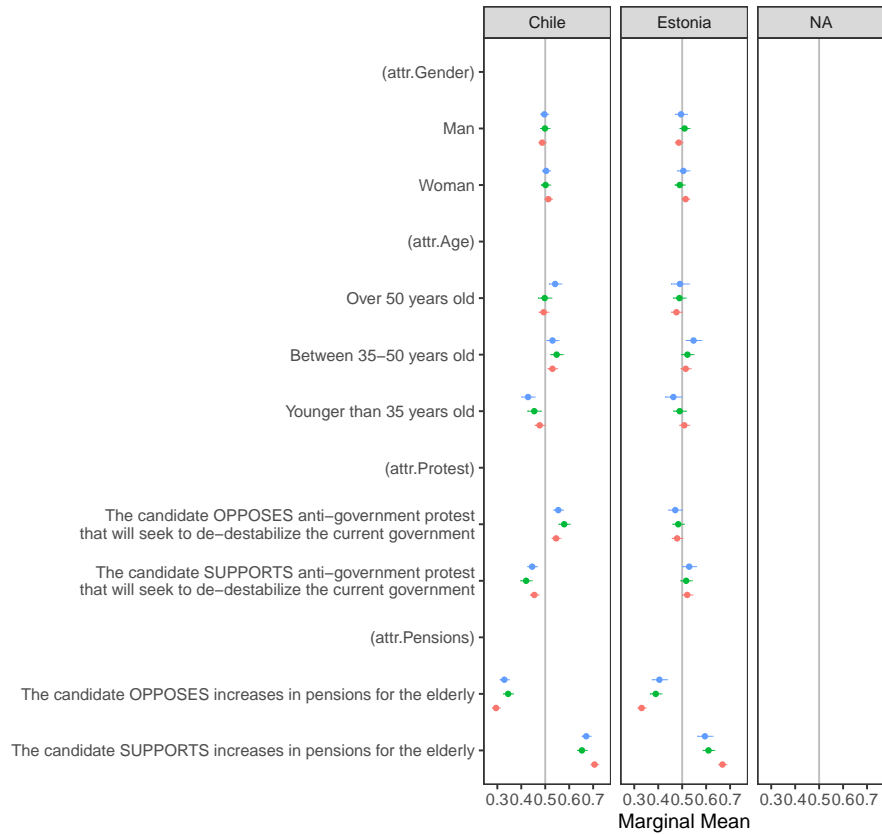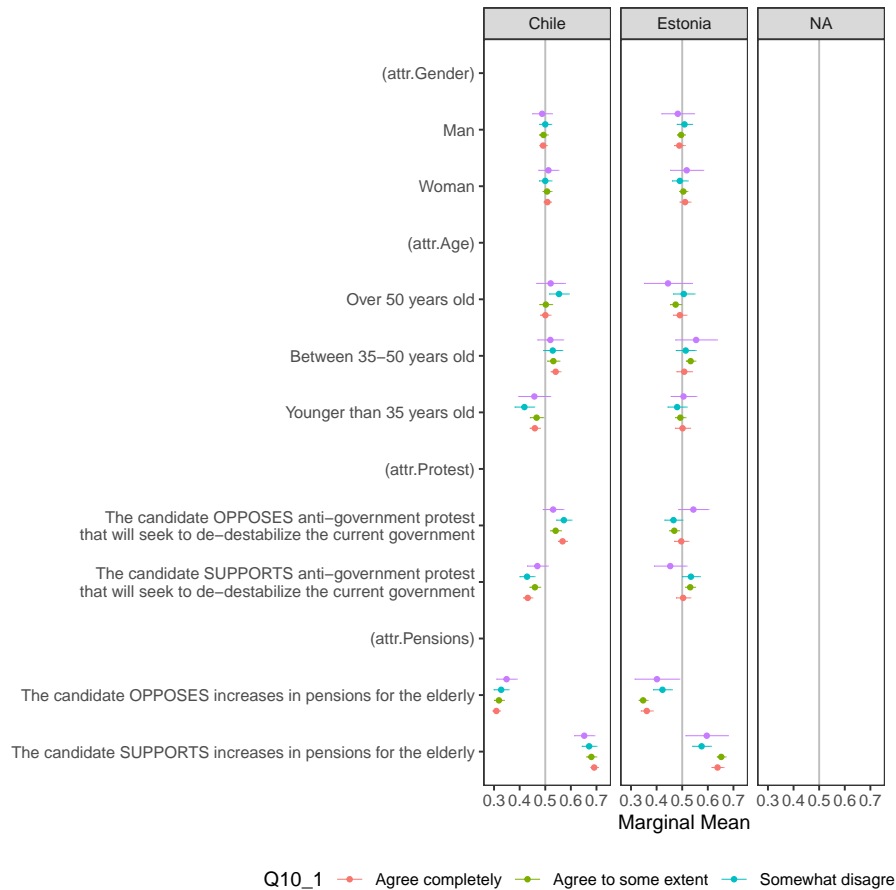


```r
###################################################
# Marginal Means // Subgroup Analyses
# Q10_1 # Democracy might have problems but it's better...
###################################################
mm_DemBetter_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + att
                                    id = ~ respondent,
                                    estimate = "mm",
                                    by = ~Q10_1))


mm_DemBetter_Chile <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.Ag
                                    id = ~ respondent,
                                    estimate = "mm",
                                    by = ~Q10_1))


mm_DemBetter_Chile$Country <- "Chile"
mm_DemBetter_Estonia$Country <- "Estonia"
```

```
mm_DemBetter.d = rbind(mm_DemBetter_Chile, mm_DemBetter_Estonia)
mm_DemBetter.p <- plot(mm_DemBetter.d, group = "Q10_1", vline = 0.5)
mm_DemBetter.p %+% facet_wrap(~Country)
```



```
####################################################
# Marginal Means // Subgroup Analyses
# Q10_1.r # Democracy might have problems but it's better... RECODED
####################################################
mm_DemBetter_Estonia.r <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + a
                                    id = ~ respondent,
                                    estimate = "mm",
                                    by = ~Q10_1.r))

mm_DemBetter_Chile.r <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.
                                    id = ~ respondent,
                                    estimate = "mm",
                                    by = ~Q10_1.r))

mm_DemBetter_Chile.r$Country <- "Chile"
```

```
mm_DemBetter_Estonia.r$Country <- "Estonia"

mm_DemBetter.d.r = rbind(mm_DemBetter_Chile.r, mm_DemBetter_Estonia.r)
mm_DemBetter.p.r <- plot(mm_DemBetter.d.r, group = "Q10_1.r", vline = 0.5)
mm_DemBetter.p.r %+% facet_wrap(~Country)
```
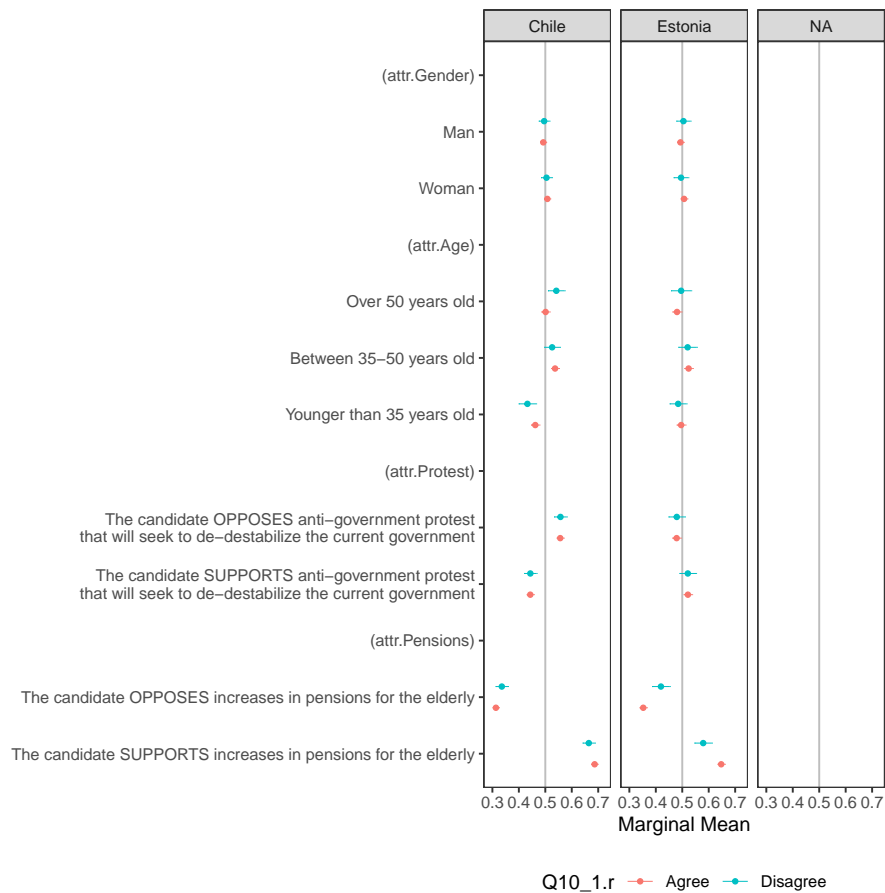


```
##########################################################
# Marginal Means // Subgroup Analyses:
# Q10_2: Democracy is not an effective form of government...better a strong leader
##########################################################
mm_StrongLeader_Chile <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr
                                   id = ~respondent,
                                   estimate = "mm",
                                   by = ~Q10_2))

mm_StrongLeader_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender +
                                   id = ~respondent,
                                   estimate = "mm",
                                   by = ~Q10_2))
```

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```
mm_StrongLeader_Chile$Country <- "Chile"
mm_StrongLeader_Estonia$Country <- "Estonia"

mm_StrongLeader.d = rbind(mm_StrongLeader_Chile, mm_StrongLeader_Estonia)
mm_StrongLeader.p <- plot(mm_StrongLeader.d, group = "Q10_2", vline = 0.5)
mm_StrongLeader.p %+% facet_wrap(~Country)
```



```
#####################################################
# Marginal Means // Subgroup Analyses:
# Q10_2: # Democracy is not an effective form of government...better a strong leader RECOD
#####################################################
mm_StrongLeader_Chile.r <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + at
                                               id = ~respondent,
                                               estimate = "mm",
                                               by = ~Q10_2.r))

mm_StrongLeader_Estonia.r <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender
                                                 id = ~respondent,
                                                 estimate = "mm",
```
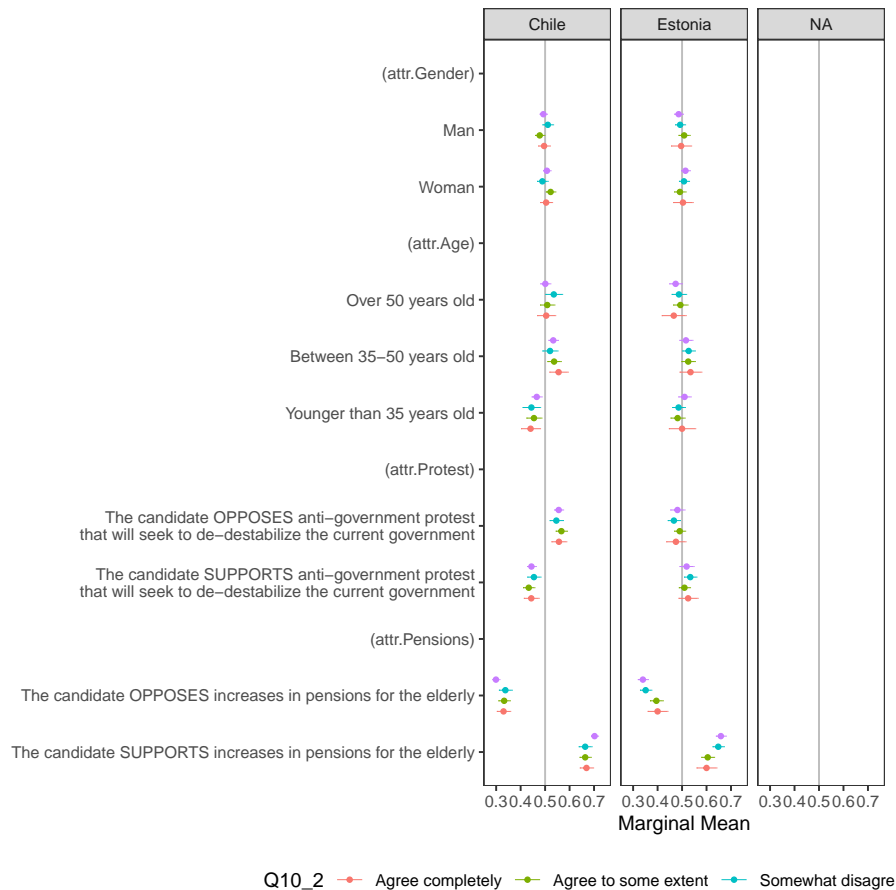
```
                                          by = ~Q10_2.r))


mm_StrongLeader_Chile.r$Country <- "Chile"
mm_StrongLeader_Estonia.r$Country <- "Estonia"

mm_StrongLeader.d.r = rbind(mm_StrongLeader_Chile.r, mm_StrongLeader_Estonia.r)
mm_StrongLeader.p.r <- plot(mm_StrongLeader.d.r, group = "Q10_2.r", vline = 0.5)
mm_StrongLeader.p.r %+% facet_wrap(~Country)
```



```
############################################################
# Marginal Means // Subgroup Analyses:
# Q10_3: Civil rights that guarantee political protest should not be restricted
############################################################
mm_RightToProtest_Chile <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + at
                                    id = ~respondent,
                                    estimate = "mm",
                                    by = ~Q10_3))

mm_RightToProtest_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender
```

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```
                                              id = ~respondent,
                                              estimate = "mm",
                                              by = ~Q10_3))
```

```
mm_RightToProtest_Chile$Country <- "Chile"
mm_RightToProtest_Estonia$Country <- "Estonia"

mm_RightToProtest.d = rbind(mm_RightToProtest_Chile, mm_RightToProtest_Estonia)
mm_RightToProtest.p <- plot(mm_RightToProtest.d, group = "Q10_3", vline = 0.5)
mm_RightToProtest.p %+% facet_wrap(~Country)
```
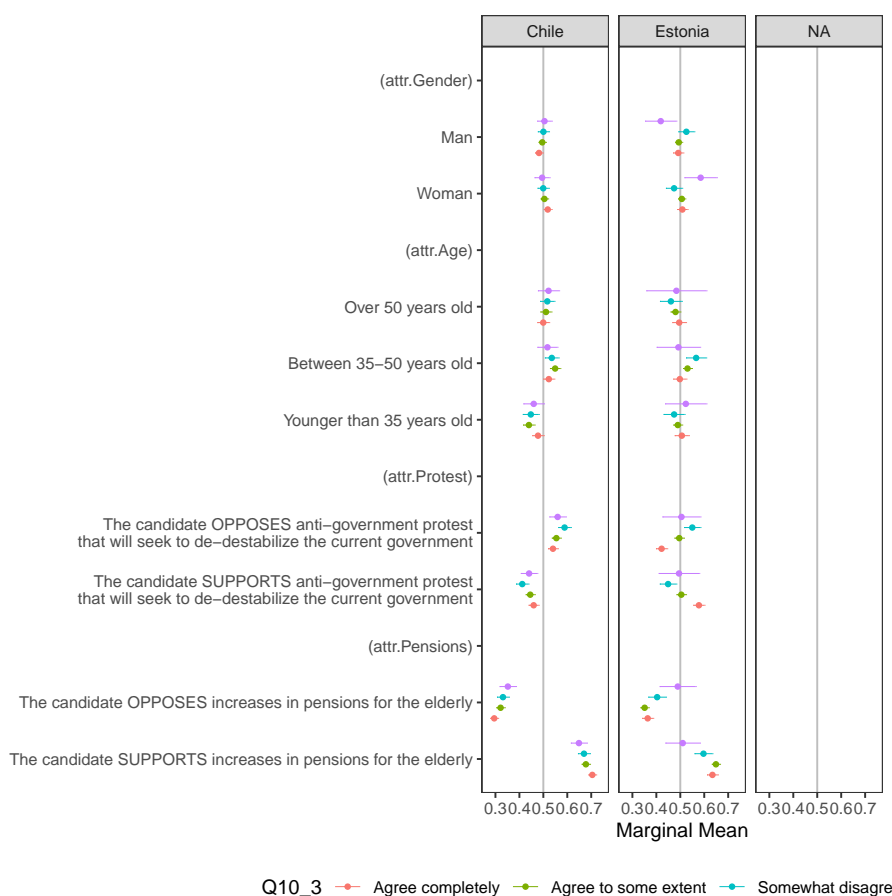


```
############################################################
# Marginal Means // Subgroup Analyses:
# Q10_3.r: Civil rights that guarantee political protest should not be restricted... RECOD
############################################################
mm_RightToProtest_Chile.r <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender +
                                              id = ~respondent,
                                              estimate = "mm",
```
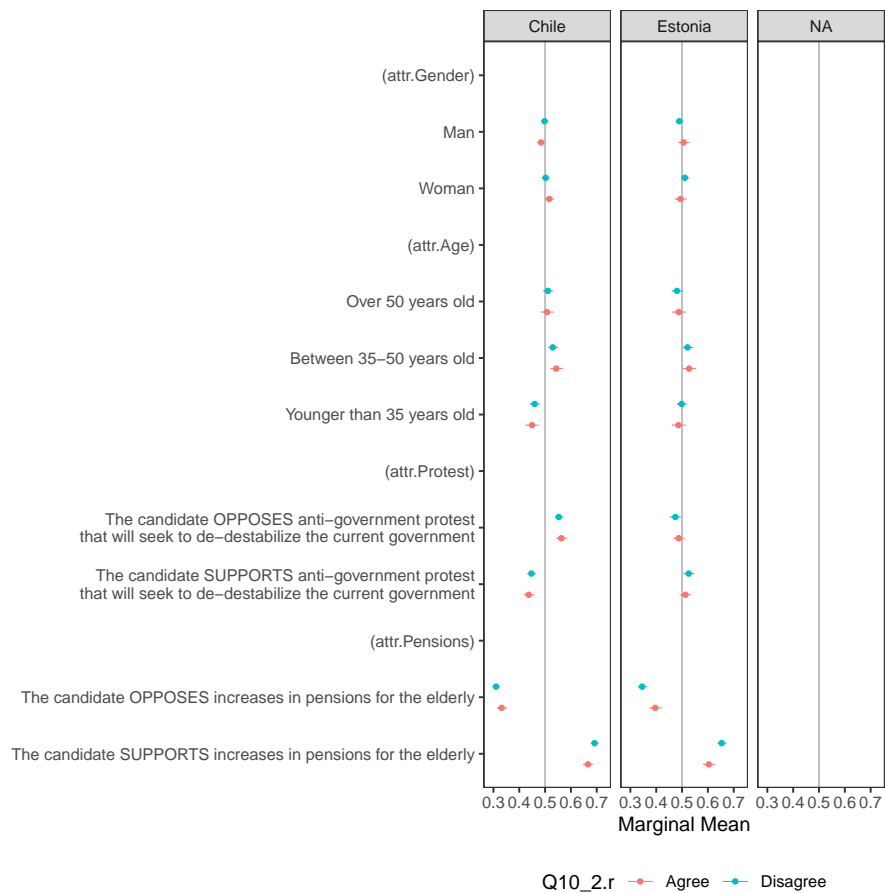
```
                                                        by = ~Q10_3.r))

mm_RightToProtest_Estonia.r <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gende
                                        id = ~respondent,
                                        estimate = "mm",
                                        by = ~Q10_3.r))



mm_RightToProtest_Chile.r$Country <- "Chile"
mm_RightToProtest_Estonia.r$Country <- "Estonia"

mm_RightToProtest.d.r = rbind(mm_RightToProtest_Chile.r, mm_RightToProtest_Estonia.r)
mm_RightToProtest.p.r <- plot(mm_RightToProtest.d.r, group = "Q10_3.r", vline = 0.5)
mm_RightToProtest.p.r %+% facet_wrap(~Country)
```



```
##########################################################
# Marginal Means // Subgroup Analyses:
# Q8_1: Thinking on a scale where one means far left and ten means far right, where do you
##########################################################
```

```
mm_LeftRight_Chile <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.Ag
                                          id = ~respondent,
                                          estimate = "mm",
                                          by = ~Q8_1))

mm_LeftRight_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + att
                                           id = ~respondent,
                                           estimate = "mm",
                                           by = ~Q8_1))

mm_LeftRight_Chile$Country <- "Chile"
mm_LeftRight_Estonia$Country <- "Estonia"

mm_LeftRight.d = rbind(mm_LeftRight_Chile, mm_LeftRight_Estonia)
mm_LeftRight.p <- plot(mm_LeftRight.d, group = "Q8_1", vline = 0.5)
mm_LeftRight.p %+% facet_wrap(~Country)
```
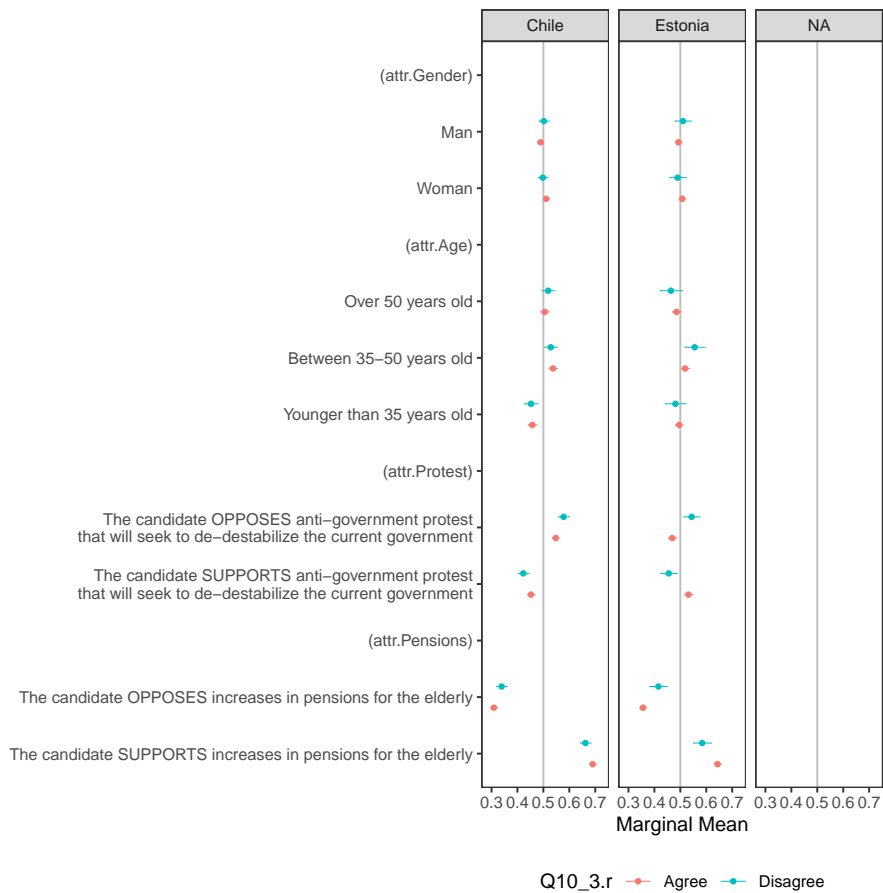


```
###########################################################
# Marginal Means // Subgroup Analyses:
# Q8_1: Thinking on a scale where one means far left and ten means far right, where do you
```
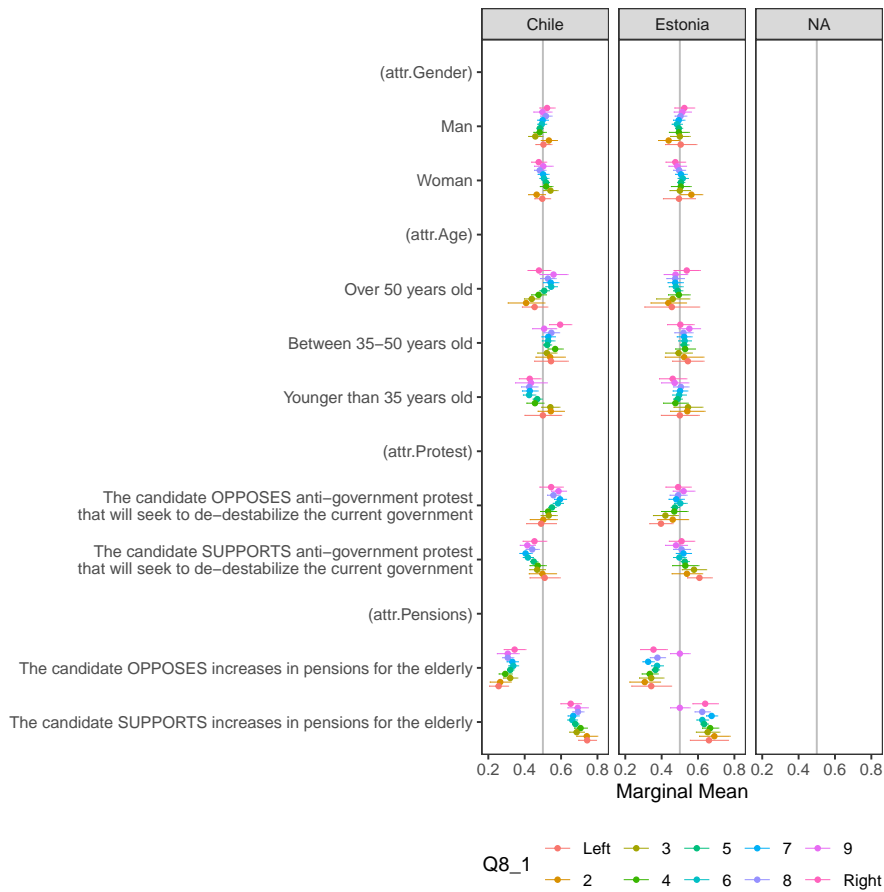
```
#########################################################
mm_LeftRight_Chile.r <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.
                                       id = ~respondent,
                                       estimate = "mm",
                                       by = ~Q8_1.r))

mm_LeftRight_Estonia.r <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + a
                                       id = ~respondent,
                                       estimate = "mm",
                                       by = ~Q8_1.r))

mm_LeftRight_Chile.r$Country <- "Chile"
mm_LeftRight_Estonia.r$Country <- "Estonia"

mm_LeftRight.d.r = rbind(mm_LeftRight_Chile.r, mm_LeftRight_Estonia.r)
mm_LeftRight.p.r <- plot(mm_LeftRight.d.r, group = "Q8_1.r", vline = 0.5)
mm_LeftRight.p.r %+% facet_wrap(~Country)
```
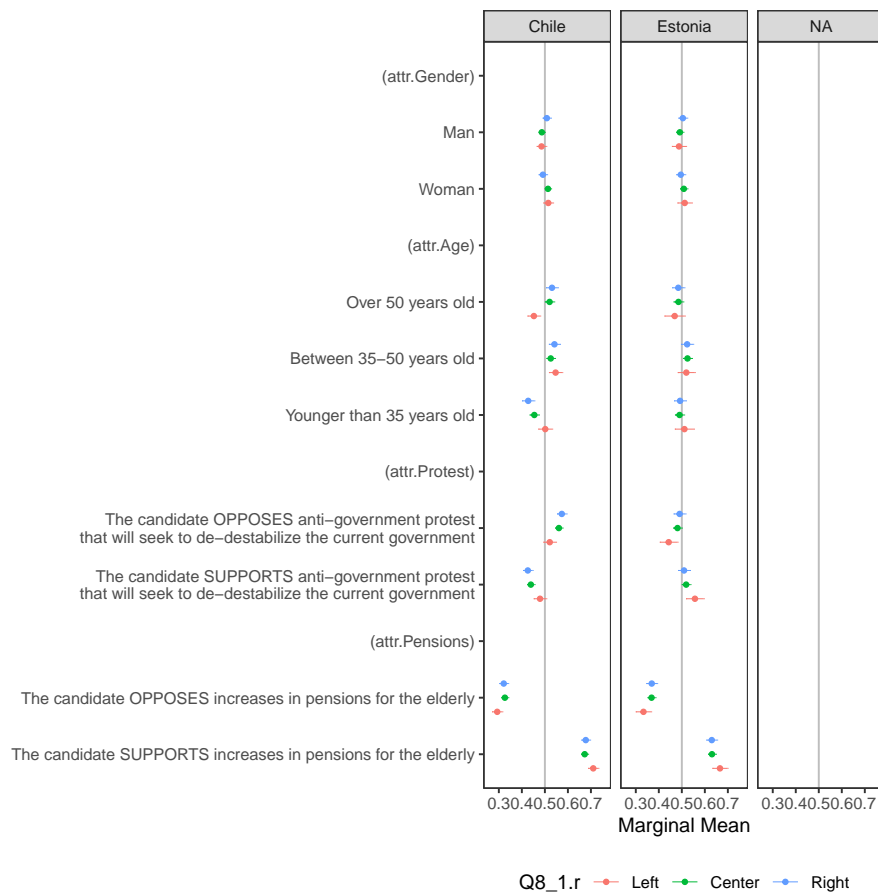
```r
###################################################
# Marginal Means // Subgroup Analyses:
# Q12_7 # The state should ensure that wages are more equal.
###################################################

mm_Wages_Equal_Chile <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.
                                            id = ~ respondent,
                                            estimate = "mm",
                                            by = ~Q12_7))

mm_Wages_Equal_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + a
                                              id = ~ respondent,
                                              estimate = "mm",
                                              by = ~Q12_7))


mm_Wages_Equal_Chile$Country <- "Chile"
mm_Wages_Equal_Estonia$Country <- "Estonia"

mm_Wages_Equal.d = rbind(mm_Wages_Equal_Chile, mm_Wages_Equal_Estonia)
mm_Wages_Equal.p <- plot(mm_Wages_Equal.d, group = "Q12_7", vline = 0.5)
mm_Wages_Equal.p %+% facet_wrap(~Country)
```

Chile | Estonia | NA

(attr.Gender)

Man

Woman

(attr.Age)

Over 50 years old

Between 35–50 years old

Younger than 35 years old

(attr.Protest)

The candidate OPPOSES anti–government protest
that will seek to de–destabilize the current government

The candidate SUPPORTS anti–government protest
that will seek to de–destabilize the current government

(attr.Pensions)

The candidate OPPOSES increases in pensions for the elderly

The candidate SUPPORTS increases in pensions for the elderly

Marginal Mean

Q12_7   Not at all   3   5   7   9
         2   4   6   8   Definitely

```
####################################################
# Marginal Means // Subgroup Analyses:
# Q12_1 # Governments should tax the rich to help the poor
####################################################

mm_Tax_Rich_Chile <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.Age
                              id = ~ respondent,
                              estimate = "mm",
                              by = ~Q12_1))

mm_Tax_Rich_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + attr
                              id = ~ respondent,
                              estimate = "mm",
                              by = ~Q12_1))


mm_Tax_Rich_Chile$Country <- "Chile"
mm_Tax_Rich_Estonia$Country <- "Estonia"

mm_Tax_Rich.d = rbind(mm_Tax_Rich_Chile, mm_Tax_Rich_Estonia)
```

```r
mm_Tax_Rich.p <- plot(mm_Tax_Rich.d, group = "Q12_1", vline = 0.5)
mm_Tax_Rich.p %+% facet_wrap(~Country)
```



```r
#####################################################
# Marginal Means // Subgroup Analyses:
# Q12_1 # Governments should tax the rich to help the poor... RECODED
#####################################################


mm_Tax_Rich_Chile.r <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.A
                                    id = ~ respondent,
                                    estimate = "mm",
                                    by = ~Q12_1.r))

mm_Tax_Rich_Estonia.r <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + at
                                    id = ~ respondent,
                                    estimate = "mm",
                                    by = ~Q12_1.r))


mm_Tax_Rich_Chile.r$Country <- "Chile"
```
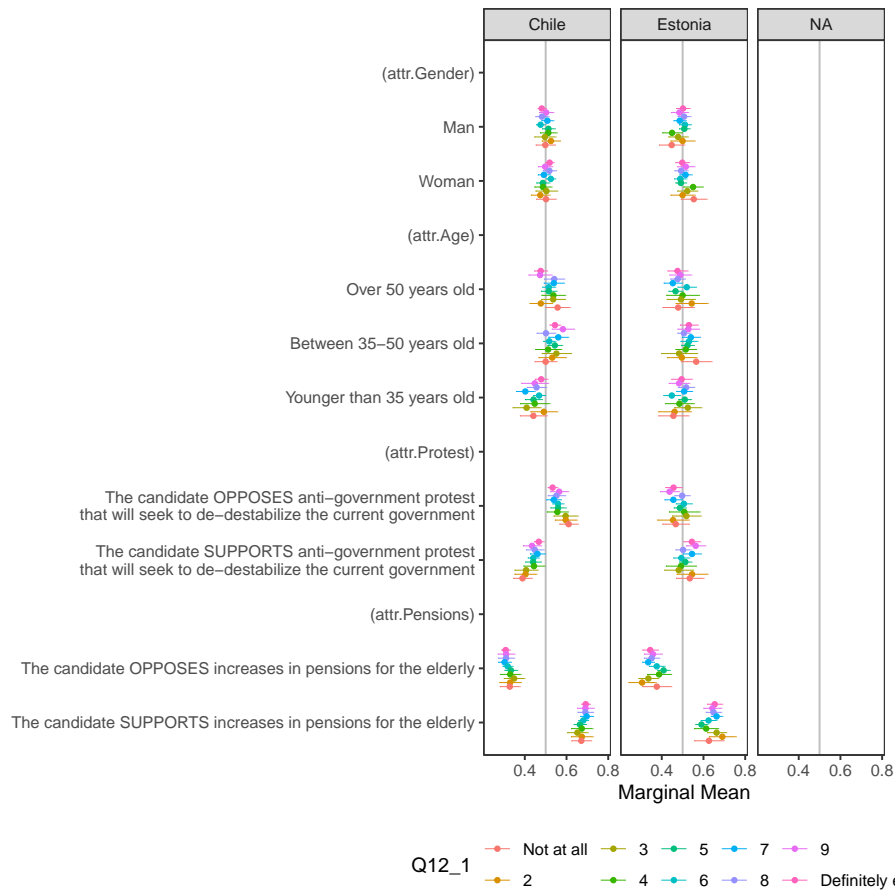
```r
mm_Tax_Rich_Estonia.r$Country <- "Estonia"

mm_Tax_Rich.d.r = rbind(mm_Tax_Rich_Chile.r, mm_Tax_Rich_Estonia.r)
mm_Tax_Rich.p.r <- plot(mm_Tax_Rich.d.r, group = "Q12_1.r", vline = 0.5)
mm_Tax_Rich.p.r %+% facet_wrap(~Country)
```



```r
############################################################
# Marginal Means // Subgroup Analyses:
# Educ.HighLow
############################################################

mm_EducHighLow_Chile <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender + attr.
                                            id = ~respondent,
                                            estimate = "mm",
                                            by = ~Educ.HighLow))

mm_EducHighLow_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gender + a
                                              id = ~respondent,
                                              estimate = "mm",
                                              by = ~Educ.HighLow))
```
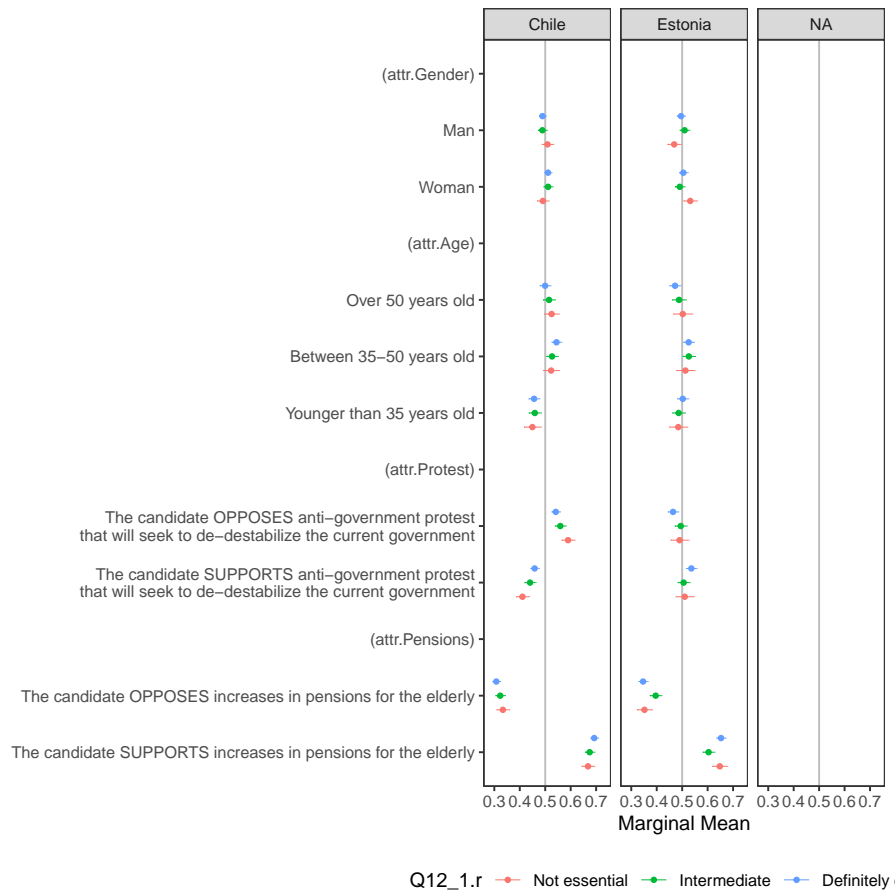
```
mm_EducHighLow_Chile$Country <- "Chile"
mm_EducHighLow_Estonia$Country <- "Estonia"

mm_EducHighLow.d = rbind(mm_EducHighLow_Chile, mm_EducHighLow_Estonia)
mm_EducHighLow.p <- plot(mm_EducHighLow.d, group = "Educ.HighLow", vline = 0.5)
mm_EducHighLow.p %+% facet_wrap(~Country)
```
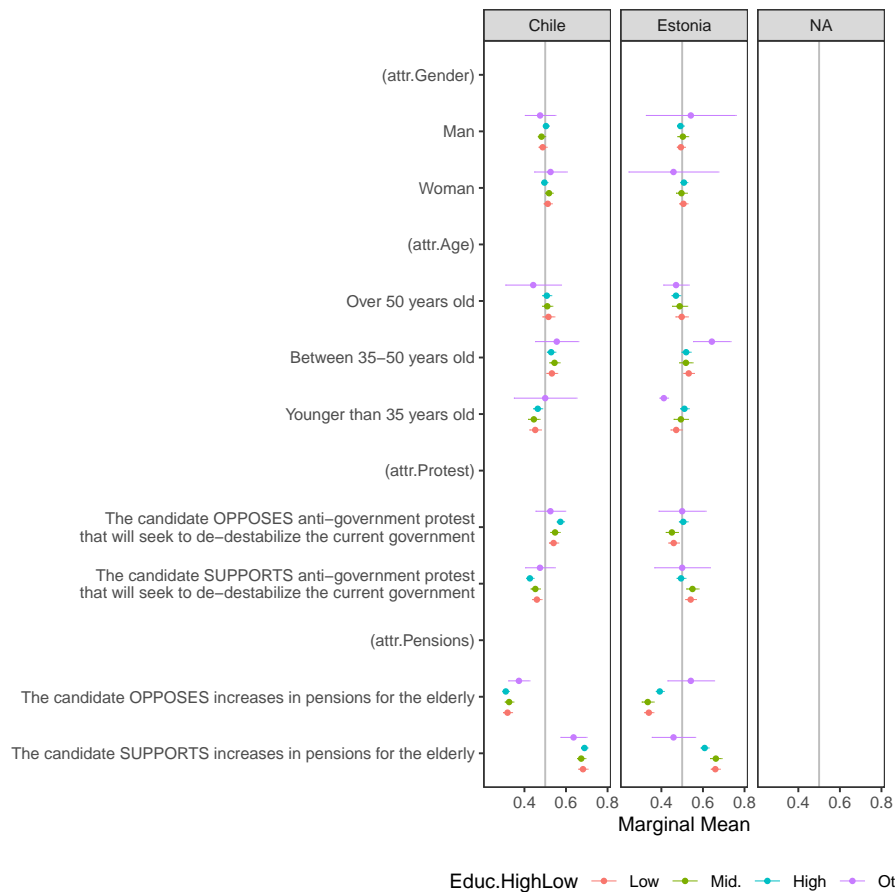


```
#######################################################
# Marginal Means // Subgroup Analyses:
# IncomeLowMidHigh
#######################################################

mm_IncomeHighMidLow_Chile <- suppressWarnings(cj(conjoint.d.chile, chosen ~ attr.Gender +
                                     id = ~respondent,
                                     estimate = "mm",
                                     by = ~IncomeLowMidHigh))

mm_IncomeHighMidLow_Estonia <- suppressWarnings(cj(conjoint.d.estonia, chosen ~ attr.Gende
                                     id = ~respondent,
```

```
                                                    estimate = "mm",
                                                    by = ~IncomeLowMidHigh))

mm_IncomeHighMidLow_Chile$Country <- "Chile"
mm_IncomeHighMidLow_Estonia$Country <- "Estonia"

mm_IncomeHighMidLow.d = rbind(mm_IncomeHighMidLow_Chile, mm_IncomeHighMidLow_Estonia)
mm_IncomeHighMidLow.p <- plot(mm_IncomeHighMidLow.d, group = "IncomeLowMidHigh", vline = 0
mm_IncomeHighMidLow.p %+% facet_wrap(~Country)
```
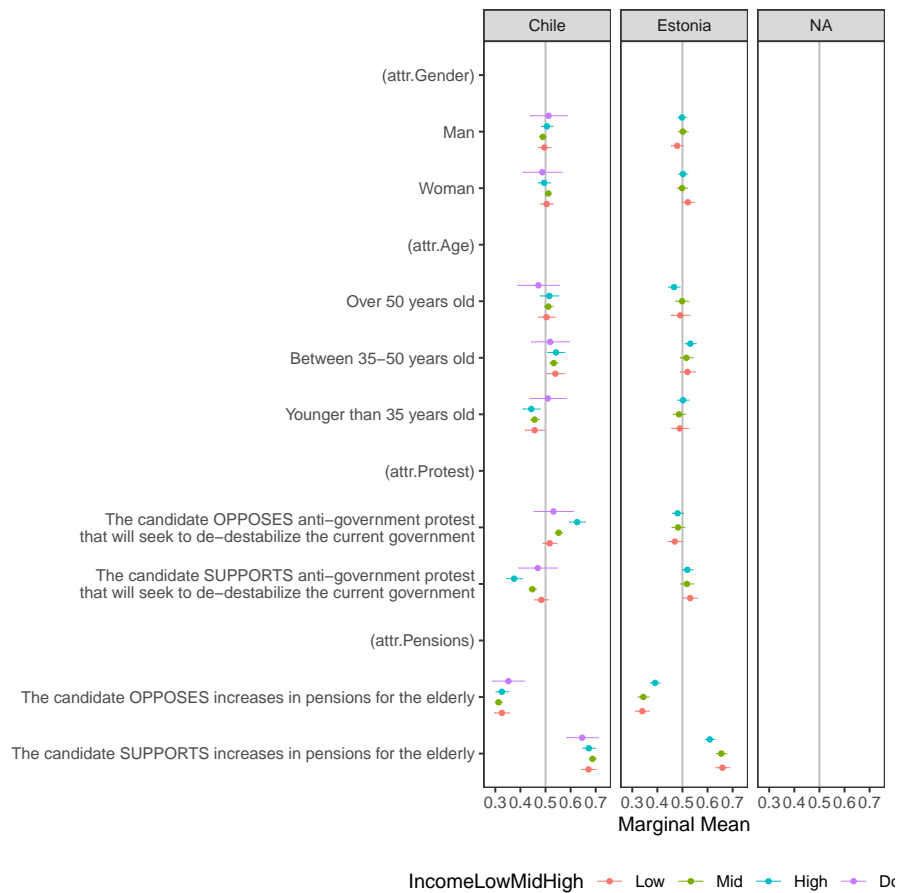
```
##########
# VDEM
##########


# import data
vdem.d <- readRDS("/Users/hectorbahamonde/research/democratic_backsliding/data/vdem.rds")

# Keep Chile and Estonia
vdem.d <- vdem.d[which(vdem.d$country_name=='Chile'  | vdem.d$country_name=='Estonia'),]
```

```r
# free up memory
gc()

##             used  (Mb) gc trigger  (Mb) limit (Mb)  max used   (Mb)
## Ncells   3869773 206.7    6798468 363.1        NA   6798468  363.1
## Vcells  10440219  79.7  106967708 816.1      16384 124981042 953.6

# keep variables
p_load(dplyr)

vdem.d = vdem.d %>% dplyr::select(
  country_name,
  year,
  v2elfrfair, # Election free and fair
  v2elaccept, # Election losers accept results
  v2psbars,# Barriers to parties
  v2psparban, # Party ban
  # v2psbantar, # Party ban target
  v2exrescon, # Executive respects constitution
  # v2regsupgroups, # Regime support groups
  v2regimpgroup, # Regime most important support group
  v2regsupgroupssize, # Regime support groups size
  v2regsuploc, # Regime support location,
  v2regproreg, # Strongest pro-regime preferences
  v2regantireg, # Strongest anti-regime preferences
  v2regpower, # Most powerful group in affecting regime duration and change
  v2dlcommon, # Common good
  v2dlcountr, # Respect counterarguments
  v2dlengage, # Engaged society
  v2dlencmps, # Particularistic or public goods
  v2jupoatck, # Government attacks on judiciary
  v2clrspct, # Rigorous and impartial public administration
  v2clacjust, # Social class equality in respect for civil liberty
  v2clacfree, # Freedom of academic and cultural expression
  v2clstown, # State ownership of economy
  v2clprptym, # Property rights for men
  v2clprptyw, # Property rights for women
  v2stcritapparm, # Criteria for appointment decisions in the armed forces
  v2strenarm, # Remuneration in the Armed Forces
  # v2csanmvch, # Civil Society CSO anti-system movement character
  v2mecenefm, # Government censorship effort | Media
  v2mecenefi, # Internet censorship effort
  v2mecrit, # Print/broadcast media critical
  v2merange, # Print/broadcast media perspectives
  v2meharjrn, # Harassment of journalists
  v2meslfcen, # Media self-censorship
  v2mebias, # Media bias
  v2pepwrses, # Power distributed by socioeconomic position
  v2pepwrsoc, # Power distributed by social group
```

```r
  v2peapsecon, # Access to public services distributed by socio-economic position
  v2peasjsoecon, # Access to state jobs by socio-economic position
  v2clpolcl, # Political group equality in respect for civil liberties
  v2cacamps, # Political polarization
  v2caviol, # Political violence
  v2caassemb, # Freedom of peaceful assembly
  # v2casoe, # State of emergency
  v2cagenmob, # Mass mobilization
  v2caconmob, # Mass mobilization concentration
  v2cademmob, # Mobilization for democracy
  v2caautmob, # Mobilization for autocracy
  v2catrauni, # Engagement in independent trade unions
  v2capolit, # Engagement in independent political associations
  v2canonpol, # Engagement in independent non-political associations
  v2cauni, # Existence of universities
  v2caprotac, # Constitutional protection for academic freedom
  v2cafres, # Freedom to research and teach
  v2cainsaut, # Institutional autonomy
  v2cacritic, # Academics as critics
  v3partyid, # Party identification
  v3lgbudglo, # Lower chamber budget
  v2xnp_client, # Clientelism Index
  v2x_rule, # Rule of law index
  v2smgovdom, # Government dissemination of false information domestic
  v2smgovab, # Government dissemination of false information abroad
  v2smgovsmmon, # Government social media monitoring
  v2smgovsmcenprc, # Government social media censorship in practice
  v2smregcap, # Government capacity to regulate online content
  # v2smhargr, # Online harassment groups
  v2smarrest, # Arrests for political content
  v2smpolsoc, # Polarization of society
  v2smpolhate, # Political parties hate speech
  e_polcomp, # Political competition
  e_ti_cpi # Corruption perception index
  #everything()
)


p_load(ggplot2)

p1 = ggplot(vdem.d, aes(year, v2elfrfair, col=country_name)) + geom_smooth() + theme_light
  labs(y="Election free and fair") + theme(legend.position = "none", aspect.ratio=1)
p2 = ggplot(vdem.d, aes(year, v2elaccept, col=country_name)) + geom_smooth() + theme_light
  labs(y="Election losers accept results") + theme(legend.position = "none", aspect.ratio=
p3 = ggplot(vdem.d, aes(year, v2psbars, col=country_name)) + geom_smooth() + theme_light()
  labs(y="Barriers to parties") + theme(legend.position = "none", aspect.ratio=1)
p4 = ggplot(vdem.d, aes(year, v2psparban, col=country_name)) + geom_smooth() + theme_light
  labs(y="Party ban") + theme(legend.position = "none", aspect.ratio=1)
p5 = ggplot(vdem.d, aes(year, v2exrescon, col=country_name)) + geom_smooth() + theme_light
```

```r
  labs(y="Executive respects constitution") + theme(legend.position = "none", aspect.ratio
p6 = ggplot(vdem.d, aes(year, v2regimpgroup, col=country_name)) + geom_smooth() + theme_li
  labs(y="Regime most important support group") + theme(legend.position = "none", aspect.r
p7 = ggplot(vdem.d, aes(year, v2regsupgroupssize, col=country_name)) + geom_smooth() + the
  labs(y="Regime support groups size") + theme(legend.position = "none", aspect.ratio=1)
p8 = ggplot(vdem.d, aes(year, v2regsuploc, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Regime support location") + theme(legend.position = "none", aspect.ratio=1)
p9 = ggplot(vdem.d, aes(year, v2regproreg, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Strongest pro-regime preferences") + theme(legend.position = "none", aspect.rati
p10 = ggplot(vdem.d, aes(year, v2regantireg, col=country_name)) + geom_smooth() + theme_li
  labs(y="Strongest anti-regime preferences") + theme(legend.position = "none", aspect.rat
p11 = ggplot(vdem.d, aes(year, v2regpower, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Most powerful group in affecting regime duration and change") + theme(legend.pos
p12 = ggplot(vdem.d, aes(year, v2dlcommon, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Common good") + theme(legend.position = "none", aspect.ratio=1)
p13 = ggplot(vdem.d, aes(year, v2dlcountr, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Respect counterarguments") + theme(legend.position = "none", aspect.ratio=1)
p14 = ggplot(vdem.d, aes(year, v2dlengage, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Engaged society") + theme(legend.position = "none", aspect.ratio=1)
p15 = ggplot(vdem.d, aes(year, v2dlencmps, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Particularistic or public goods") + theme(legend.position = "none", aspect.ratio
p16 = ggplot(vdem.d, aes(year, v2jupoatck, col=country_name)) + geom_smooth() + theme_ligh
  abs(y="Government attacks on judiciary") + theme(legend.position = "bottom", aspect.rati

## Error in abs(y = "Government attacks on judiciary"):  supplied argument
name 'y' does not match 'x'

#
p17 = ggplot(vdem.d, aes(year, v2clrspct, col=country_name)) + geom_smooth() + theme_light
  labs(y="Rigorous and impartial public administration") + theme(legend.position = "none",
p18 = ggplot(vdem.d, aes(year, v2clacjust, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Social class equality in respect for civil liberty") + theme(legend.position = "
p19 = ggplot(vdem.d, aes(year, v2clacfree, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Freedom of academic and cultural expression") + theme(legend.position = "none",
p20 = ggplot(vdem.d, aes(year, v2clstown, col=country_name)) + geom_smooth() + theme_light
  labs(y="State ownership of economy") + theme(legend.position = "none", aspect.ratio=1)
p21 = ggplot(vdem.d, aes(year, v2clprptym, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Property rights for men") + theme(legend.position = "none", aspect.ratio=1)
p22 = ggplot(vdem.d, aes(year, v2clprptyw, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Property rights for women") + theme(legend.position = "none", aspect.ratio=1)
p23 = ggplot(vdem.d, aes(year, v2stcritapparm, col=country_name)) + geom_smooth() + theme_
  labs(y="Criteria for appointment decisions in the armed forces") + theme(legend.position
p24 = ggplot(vdem.d, aes(year, v2strenarm, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Remuneration in the Armed Forces") + theme(legend.position = "none", aspect.rati
p25 = ggplot(vdem.d, aes(year, v2mecenefm, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Government censorship effort | Media") + theme(legend.position = "none", aspect.
p26 = ggplot(vdem.d, aes(year, v2mecenefi, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Internet censorship effort")  + theme(legend.position = "none", aspect.ratio=1)
p27 = ggplot(vdem.d, aes(year, v2mecrit, col=country_name)) + geom_smooth() + theme_light(
  labs(y="Print/broadcast media critical")  + theme(legend.position = "none", aspect.ratio
```

```r
p28 = ggplot(vdem.d, aes(year, v2merange, col=country_name)) + geom_smooth() + theme_light
  labs(y="Print/broadcast media perspectives") + theme(legend.position = "none", aspect.ra
p29 = ggplot(vdem.d, aes(year, v2meharjrn, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Harassment of journalists") + theme(legend.position = "none", aspect.ratio=1)
p30 = ggplot(vdem.d, aes(year, v2meslfcen, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Media self-censorship") + theme(legend.position = "none", aspect.ratio=1)
p31 = ggplot(vdem.d, aes(year, v2mebias, col=country_name)) + geom_smooth() + theme_light(
  labs(y="Media bias") + theme(legend.position = "none", aspect.ratio=1)
p32 = ggplot(vdem.d, aes(year, v2pepwrses, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Power distributed by socioeconomic position") + theme(legend.position = "bottom"
#
p33 = ggplot(vdem.d, aes(year, v2pepwrsoc, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Power distributed by social group") + theme(legend.position = "none", aspect.rat
p34 = ggplot(vdem.d, aes(year, v2peapsecon, col=country_name)) + geom_smooth() + theme_lig
  labs(y="Access to public services distributed by socio-economic position") + theme(legen
p35 = ggplot(vdem.d, aes(year, v2peasjsoecon, col=country_name)) + geom_smooth() + theme_l
  labs(y="Access to state jobs by socio-economic position") + theme(legend.position = "non
p36 = ggplot(vdem.d, aes(year, v2clpolcl, col=country_name)) + geom_smooth() + theme_light
  labs(y="Political group equality in respect for civil liberties") + theme(legend.positio
p37 = ggplot(vdem.d, aes(year, v2cacamps, col=country_name)) + geom_smooth() + theme_light
  labs(y="Political polarization") + theme(legend.position = "none", aspect.ratio=1)
p38 = ggplot(vdem.d, aes(year, v2caviol, col=country_name)) + geom_smooth() + theme_light(
  labs(y="Political violence") + theme(legend.position = "none", aspect.ratio=1)
p39 = ggplot(vdem.d, aes(year, v2caassemb, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Freedom of peaceful assembly") + theme(legend.position = "none", aspect.ratio=1)
p40 = ggplot(vdem.d, aes(year, v2cagenmob, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Mass mobilization") + theme(legend.position = "none", aspect.ratio=1)
p41 = ggplot(vdem.d, aes(year, v2caconmob, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Mass mobilization concentration") + theme(legend.position = "none", aspect.ratio
p42 = ggplot(vdem.d, aes(year, v2cademmob, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Mobilization for democracy") + theme(legend.position = "none", aspect.ratio=1)
p43 = ggplot(vdem.d, aes(year, v2caautmob, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Mobilization for autocracy") + theme(legend.position = "none", aspect.ratio=1)
p44 = ggplot(vdem.d, aes(year, v2catrauni, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Engagement in independent trade unions") + theme(legend.position = "none", aspec
p45 = ggplot(vdem.d, aes(year, v2capolit, col=country_name)) + geom_smooth() + theme_light
  labs(y="Engagement in independent political associations") + theme(legend.position = "no
p46 = ggplot(vdem.d, aes(year, v2canonpol, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Engagement in independent non-political associations") + theme(legend.position =
p47 = ggplot(vdem.d, aes(year, v2cauni, col=country_name)) + geom_smooth() + theme_light()
  labs(y="Existence of universities") + theme(legend.position = "none", aspect.ratio=1)
p48 = ggplot(vdem.d, aes(year, v2caprotac, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Constitutional protection for academic freedom") + theme(legend.position = "bott
#
p49 = ggplot(vdem.d, aes(year, v2cafres, col=country_name)) + geom_smooth() + theme_light(
  labs(y="Freedom to research and teach") + theme(legend.position = "none", aspect.ratio=1
p50 = ggplot(vdem.d, aes(year, v2cainsaut, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Institutional autonomy") + theme(legend.position = "none", aspect.ratio=1)
p51 = ggplot(vdem.d, aes(year, v2cacritic, col=country_name)) + geom_smooth() + theme_ligh
```

```
  labs(y="Academics as critics") + theme(legend.position = "none", aspect.ratio=1)
p52 = ggplot(vdem.d, aes(year, v3partyid, col=country_name)) + geom_smooth() + theme_light
  labs(y="Party identification") + theme(legend.position = "none", aspect.ratio=1)
p53 = ggplot(vdem.d, aes(year, v3lgbudglo, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Lower chamber budget") + theme(legend.position = "none", aspect.ratio=1)
p54 = ggplot(vdem.d, aes(year, v2xnp_client, col=country_name)) + geom_smooth() + theme_li
  labs(y="Clientelism Index") + theme(legend.position = "none", aspect.ratio=1)
p55 = ggplot(vdem.d, aes(year, v2x_rule, col=country_name)) + geom_smooth() + theme_light(
  labs(y="Rule of law index") + theme(legend.position = "none", aspect.ratio=1)
p56 = ggplot(vdem.d, aes(year, v2smgovdom, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Government dissemination of false information domestic") + theme(legend.position
p57 = ggplot(vdem.d, aes(year, v2smgovab, col=country_name)) + geom_smooth() + theme_light
  labs(y="Government dissemination of false information abroad") + theme(legend.position =
p58 = ggplot(vdem.d, aes(year, v2smgovsmmon, col=country_name)) + geom_smooth() + theme_li
  labs(y="Government social media monitoring") + theme(legend.position = "none", aspect.ra
p59 = ggplot(vdem.d, aes(year, v2smgovsmcenprc, col=country_name)) + geom_smooth() + theme
  labs(y="Government social media censorship in practice") + theme(legend.position = "none
p60 = ggplot(vdem.d, aes(year, v2smregcap, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Government capacity to regulate online content") + theme(legend.position = "none
p61 = ggplot(vdem.d, aes(year, v2smarrest, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Arrests for political content") + theme(legend.position = "none", aspect.ratio=1
p62 = ggplot(vdem.d, aes(year, v2smpolsoc, col=country_name)) + geom_smooth() + theme_ligh
  labs(y="Polarization of society") + theme(legend.position = "none", aspect.ratio=1)
p63 = ggplot(vdem.d, aes(year, v2smpolhate, col=country_name)) + geom_smooth() + theme_lig
  labs(y="Political parties hate speech") + theme(legend.position = "none", aspect.ratio=1
p64 = ggplot(vdem.d, aes(year, e_polcomp, col=country_name)) + geom_smooth() + theme_light
  labs(y="Political competition") + theme(legend.position = "none", aspect.ratio=1)
p65 = ggplot(vdem.d, aes(year, e_ti_cpi, col=country_name)) + geom_smooth() + theme_light(
  labs(y="Corruption perception index") + theme(legend.position = "bottom", aspect.ratio=1


cowplot::plot_grid(p1,p2,p3,p4,p5,p6,p7,p8,p9,p10,p11,p12,p13,p14,p15,p16, align = "hv",ax
```

Error in eval(expr, envir, enclos): object 'p16' not found

```
cowplot::plot_grid(p17, p18, p19, p20, p21, p22, p23, p24, p25, p26, p27, p28, p29, p30, p
```

`geom_smooth()` using method = 'loess' and formula = 'y ~ x'
`geom_smooth()` using method = 'loess' and formula = 'y ~ x'
`geom_smooth()` using method = 'loess' and formula = 'y ~ x'
`geom_smooth()` using method = 'loess' and formula = 'y ~ x'
`geom_smooth()` using method = 'loess' and formula = 'y ~ x'
`geom_smooth()` using method = 'loess' and formula = 'y ~ x'
`geom_smooth()` using method = 'loess' and formula = 'y ~ x'
`geom_smooth()` using method = 'loess' and formula = 'y ~ x'
`geom_smooth()` using method = 'loess' and formula = 'y ~ x'
Warning: Removed 111 rows containing non-finite values (`stat_smooth()`).
`geom_smooth()` using method = 'loess' and formula = 'y ~ x'
Warning: Removed 229 rows containing non-finite values (`stat_smooth()`).
`geom_smooth()` using method = 'loess' and formula = 'y ~ x'
`geom_smooth()` using method = 'loess' and formula = 'y ~ x'

```
## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'
## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'
## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'
## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <e2>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <80>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <94>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <e2>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <80>
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## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <e2>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <80>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <94>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <e2>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <80>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <94>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <e2>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <80>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <94>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <e2>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <80>
```

```
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <94>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <e2>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <80>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <94>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <e2>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <80>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <94>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <e2>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <80>
## Warning in grid.Call(C_textBounds, as.graphicsAnnot(x$label), x$x,
x$y, :  conversion failure on 'Government censorship effort | Media'
in 'mbcsToSbcs':  dot substituted for <94>
```

```
cowplot::plot_grid(p33, p34, p35, p36, p37, p38, p39, p40, p41, p42, p43, p44, p45, p46, p
```

```
## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'
## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 111 rows containing non-finite values ('stat_smooth()').
## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 111 rows containing non-finite values ('stat_smooth()').
## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 111 rows containing non-finite values ('stat_smooth()').
## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 111 rows containing non-finite values ('stat_smooth()').
## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 111 rows containing non-finite values ('stat_smooth()').
## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 111 rows containing non-finite values ('stat_smooth()').
## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 111 rows containing non-finite values ('stat_smooth()').
## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 111 rows containing non-finite values ('stat_smooth()').
## 'geom_smooth()' using method = 'loess' and formula = 'y ~ x'
```

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```
cowplot::plot_grid(p49, p50, p51, p52, p53, p55, p56, p57, p58, p59, p60, p61, p62, p63, p
```

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```
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 111 rows containing non-finite values (`stat_smooth()`).
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 155 rows containing non-finite values (`stat_smooth()`).
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 177 rows containing non-finite values (`stat_smooth()`).
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 243 rows containing non-finite values (`stat_smooth()`).
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 243 rows containing non-finite values (`stat_smooth()`).
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 243 rows containing non-finite values (`stat_smooth()`).
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 243 rows containing non-finite values (`stat_smooth()`).
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 243 rows containing non-finite values (`stat_smooth()`).
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 243 rows containing non-finite values (`stat_smooth()`).
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 243 rows containing non-finite values (`stat_smooth()`).
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 243 rows containing non-finite values (`stat_smooth()`).
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 36 rows containing non-finite values (`stat_smooth()`).
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'
## Warning:  Removed 267 rows containing non-finite values (`stat_smooth()`).
```