POLS 7012 Final Exam

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1 Introduction

In this paper, we will replicate the results from "Civic Honesty Around the Globe" (Cohn et al. 2019). Anything I call an "extra challenge" is available for the intrepid among you, but is not required.

To submit your final exam, knit this `.Rmd` to a PDF and post the PDF to eLC.

2 Data

Replication files are available here, and I have already downloaded them into the `data/` folder. Let's load the behavioral data.

```
data <- read_csv('data/behavioral data (csv file).csv')
```

3 Results

3.1 Replicating Figure 1

First, let's replicate the left-hand side of Figure 1. To do so, we need to perform the following steps:

- Keep only the Money and NoMoney conditions.

- Recode the `cond` variable as "Money" and "NoMoney".
- Compute the average reporting rate, grouped by country and condition.
- Plot a scatter with average reporting rate on the x-axis, country on the y-axis, and colored by monetary condition.

As an extra challenge, you can do any combination of the following:

- Rearrange the y-axis so that the countries with the lowest reporting rate appear at the bottom and those with the highest reporting rate appear at the top.
- Include the line segments between points from the original figure
- Use the colors from the original figure

```
# Here's the basic version
fig1 <- data %>%
  filter(cond %in% c(0,1)) %>%
  mutate(cond = case_when(cond == 1 ~ 'Money',
                          cond == 0 ~ 'NoMoney')) %>%
  # compute reporting rate by country and monetary condition
  group_by(Country,
           cond) %>%
  summarize(pct_reported = mean(response)) %>%
  # plot
  ggplot() +
  geom_point(aes(x=pct_reported, y=Country, color = factor(cond))) +
  labs(x = 'Reporting rate (%)', y = '', color = 'Condition') +
  theme_minimal()

fig1
```

```
# Here's the challenging version
fig1a <- data %>%
  filter(cond %in% c(0,1)) %>%
  mutate(cond = case_when(cond == 1 ~ 'Money',
                          cond == 0 ~ 'NoMoney')) %>%
  # compute reporting rate by country and monetary condition
  group_by(Country,
           cond) %>%
  summarize(pct_reported = mean(response)) %>%
  # pivot_wider to make those line segments
```

```
  ungroup %>%
  pivot_wider(names_from = cond, values_from = pct_reported) %>%
  # reorder Country by the NoMoney reporting rate
  mutate(Country = fct_reorder(Country, NoMoney)) %>%
  # compute label position, left of the minimum reporting rate
  mutate(label_position = pmin(Money, NoMoney) -
           nchar(as.character(Country))/3.5 - 1) %>%
  # begin ggplot
  ggplot() +
  geom_segment(aes(x=Money, xend=NoMoney, y=Country, yend=Country),
               color = 'gray', size = 0.5) +
  geom_point(aes(x=Money,y=Country), color = 'red') +
  geom_point(aes(x=NoMoney,y=Country), color = '#F6BE00') +
  geom_text(aes(x=label_position, y=Country, label = Country), size = 2) +
  labs(x = 'Reporting rate (%)', y = '', color = 'Condition') +
  theme_classic() +
  theme(axis.text.y = element_blank(),
        axis.ticks.y = element_blank(),
        axis.line.y = element_blank())

fig1a
```

3.2 Replicating Figure 2

Now replicate Figure 2. To do so, we need to perform the following steps:

- Keep only the data from Poland, the United Kingdom, and the United States
- Keep only the NoMoney, Money, and BigMoney conditions
- Recode the `cond` variable as "NoMoney", "Money" and "BigMoney"
- Compute the average response rate, grouped by country and condition.
- Plot a scatter with condition on the x-axis, reporting rate on the y-axis, and colored by country.
- Add a `geom_line()` layer with the same aesthetics (also include `group = Country` as an aesthetic).

As an extra challenge, you can do any combination of the following:

- Use original colors from the paper
- Use the ggplot theme that best matches the theme from the paper

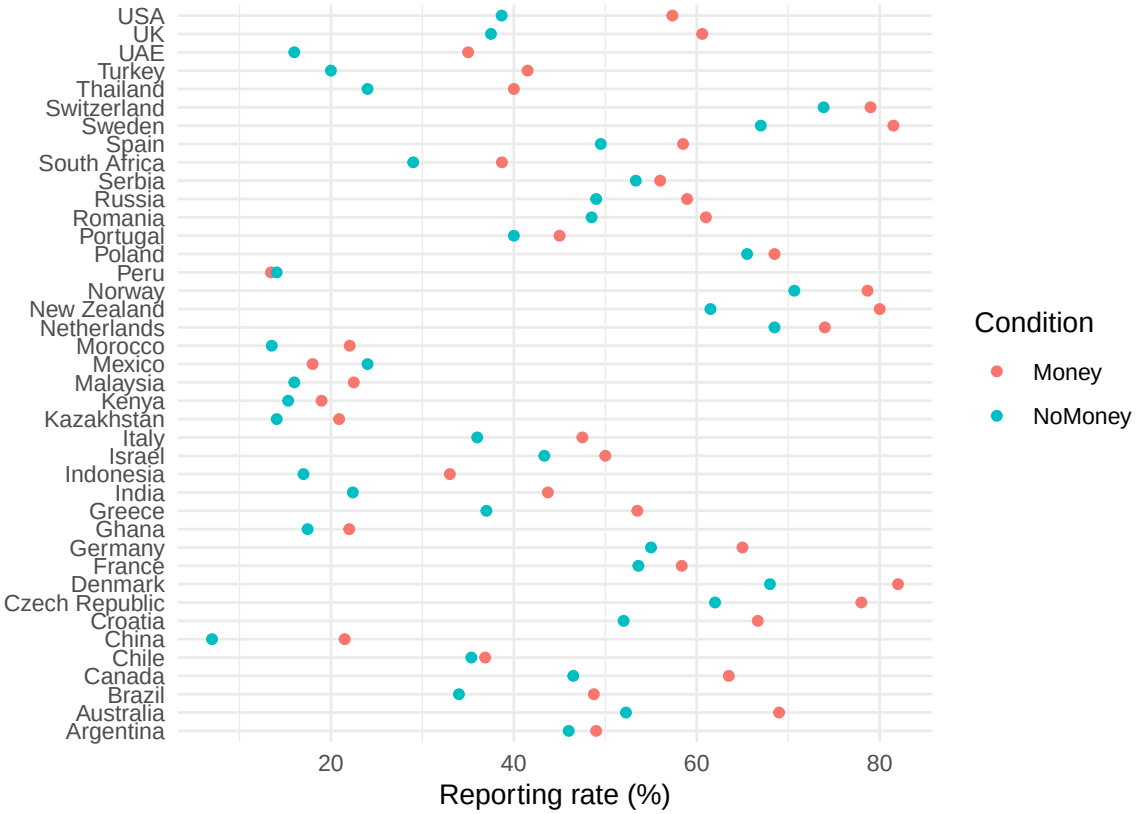

Figure 1: Share of wallets reported in the NoMoney and Money conditions, by country.

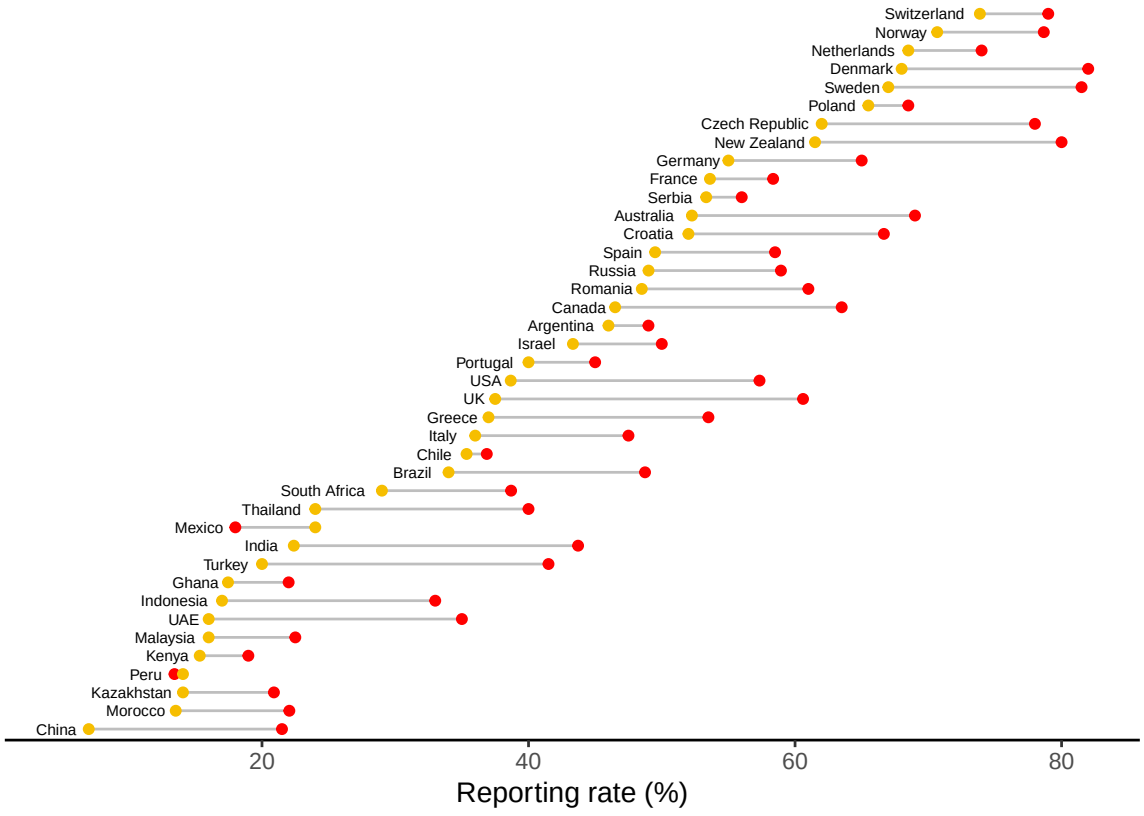

Figure 2: Share of wallets reported in the NoMoney and Money conditions, by country.

- Reorder the `cond` variable so it appears in the same order as the original Figure 2
- Include country labels as in the paper with `geom_dl()` from the `directlabels` package, and remove the legend

```
# Basic version
data %>%
  filter(Country %in% c('Poland', 'UK', 'USA'),
         cond %in% 0:2) %>%
  mutate(cond = case_when(cond == 0 ~ 'NoMoney',
                          cond == 1 ~ 'Money',
                          cond == 2 ~ 'BigMoney')) %>%
  group_by(Country, cond) %>%
  summarize(reporting_rate = mean(response)) %>%
  ggplot() +
  geom_point(mapping = aes(x = cond, y = reporting_rate,
                           color = Country)) +
  geom_line(mapping = aes(x = cond, y = reporting_rate,
                          group = Country, color = Country)) +
  labs(x = '', y = 'Reporting Rate (%)') +
  theme_classic()
```

```
library(directlabels)

# Harder version
data %>%
  filter(Country %in% c('Poland', 'UK', 'USA'),
         cond %in% 0:2) %>%
  mutate(Country = case_when(Country == 'UK' ~ 'United Kingdom',
                             Country == 'USA' ~ 'United States',
                             TRUE ~ Country),
         cond = case_when(cond == 0 ~ 'NoMoney',
                          cond == 1 ~ 'Money',
                          cond == 2 ~ 'BigMoney')) %>%
  group_by(Country, cond) %>%
  summarize(reporting_rate = mean(response)) %>%
  mutate(cond = factor(cond, levels = c('NoMoney', 'Money', 'BigMoney'))) %>%
  ggplot() +
  geom_point(mapping = aes(x = cond, y = reporting_rate,
                           color = Country)) +
```

```
  geom_line(mapping = aes(x = cond, y = reporting_rate,
                          group = Country, color = Country)) +
  geom_dl(mapping = aes(x=cond, y=reporting_rate, label = Country),
          method = list(dl.trans(x = x + 0.2), 'last.points', cex = 0.75)) +
  scale_color_manual(values = c('#8b1b1e', '#f23524', '#f98f1c')) +
  labs(x = '', y = 'Reporting Rate (%)') +
  theme_classic() +
  theme(legend.position = 'none')
```

References

Cohn, Alain, Michel André Maréchal, David Tannenbaum, and Christian Lukas Zünd. 2019. "Civic Honesty Around the Globe." *Science* 365 (6448): 70–73. https://doi.org/10.1126/science.aau8712.

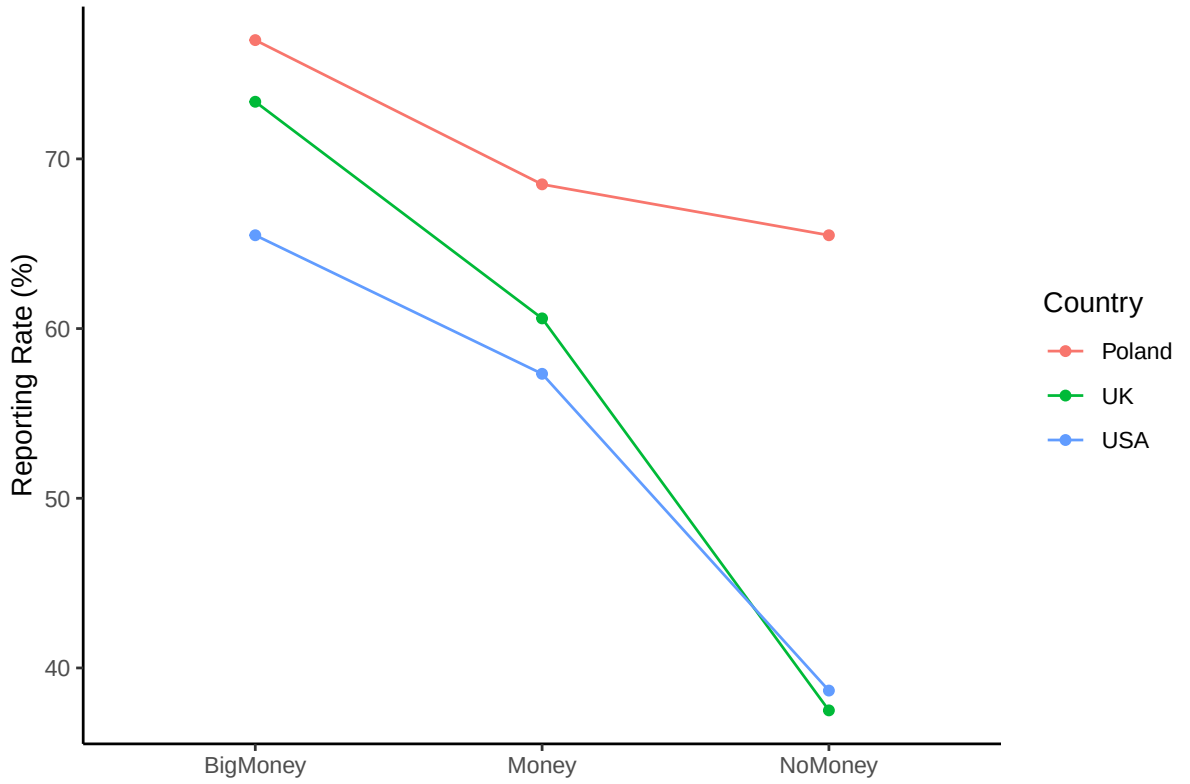

Figure 3: Reporting rates as a function of monetary stakes

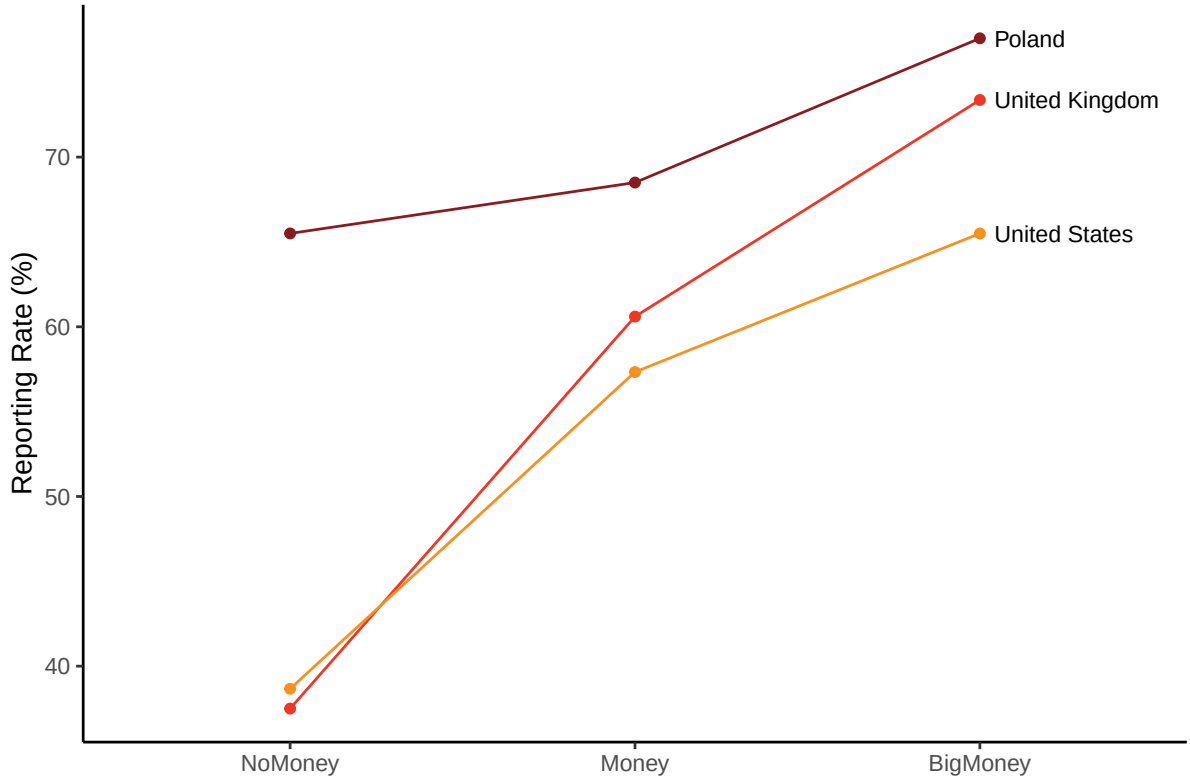

Figure 4: Reporting rates as a function of monetary stakes