

# Final: Winners or Losers? Democracies in International Crisis, 1918-94

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## Traditional Introduction

Follow the assignment step-by-step. Name your *.rmd* file *your\_surname\_final.rmd*. For example,

```
sichinava_final.Rmd
```

## Background to the Assignment

Do democracies always prevail in international crises? If so, what are the reasons of success? Christopher Gelpi and Michael Griesdorf in their widely cited paper "Winners or Losers? Democracies in International Crisis, 1918-94" try to answer these questions. They analyze over four hundred international conflicts and check several hypotheses derived from different theories about democratic structures.

Before you go through the assignment, you are strongly encourage to read the paper which can be accessed through this [link](#). The dataset used in this assignment can be downloaded from this [link](#). Please also note that in this assignment we often use wording given in Gelpi & Griesdorf's paper.

As you all are well acquainted to, according to the theory of democratic peace, democracies rarely engage in conflicts with each other. Moreover, if Bueno De Mesquita is right, democratic countries rarely resort to the violent solutions to the international conflicts as they face more constraints domestically than authoritarian regimes. Although if democracies decide to be challengers in the international conflict, they are either very highly motivated about the involvement or are highly confident in their capabilities. Considering these, Gelpi and Griesdorf propose their first hypothesis:

**HYPOTHESIS 1:** *Democratic defenders will be less likely to prevail in the international conflict than other defenders. Democratic challengers will be more likely to prevail in the conflict than other challengers*

Another proposition based on the theory of democratic peace which was brought up by Lake, argues that similar to Bueno De Mesquita's ideas, democracies rarely resort to the international conflicts, however, when they become involved in the conflict, they always have military capabilities to win the war. In other words, they are highly successful in international conflicts. Therefore, here's the second hypothesis:

HYPOTHESIS 2: *Democratic states will be more likely to prevail in an international crisis, regardless of whether they are challengers or defenders*

In this assignment we are going to check these two assumptions and try to replicate the analysis.

## Exploratory Analysis and Data Manipulation

Read the dataset to *R*. Note that each observation in the dataset is one pair of countries participating in the conflict. That is, if the conflict had multiple sides, there will be multiple records for it. You can see the description of all variables given in Gelpi & Griesdorf paper in table 1. At the first stage, give a descriptive statistics of variables *chalwin4*, *relcapbl*, *rlstake3*, *relres4*, *chalnuke*, *defnukes*, *chaldemc*, *defdemoc*. Note that one of these variables (specifically, *chalwin4*) is measured on a four-point scale with 1 denoting defeat in the conflict and 4 victory of the country. For your information, one would not normally use linear models to predict this type of variable, however, for the sake of simplicity we will be analyzing linear regressions in this assignment.

First, let's explore the nature of violent conflicts in the dataset. Make a new data frame which will store the count number conflicts by year. Hint: you may use function *as.data.frame* and make a frequency table of variable *year*. Using this data frame, make a plot which will visualize the number of conflicts per year. Use library *ggplot* and the following code:

```
ggplot(THE NAME OF YOUR DATA FRAME, aes(x=YOUR YEAR VARIABLE, y=YOUR COUNT VARIABLE, group=1))+  
  geom_line()+ ## Note that we are using line chart here  
  scale_x_discrete(breaks=c(1920, 1930, 1940, 1950, 1960, 1970, 1980, 1990))+  
  labs(title="Number of International Conflicts, 1918-1994",  
       x="Year",  
       y="Number of Conflicts")
```

Extra points will be awarded if you further enhance your graph and make it prettier!

When looking at the diagram, you may notice a period of relative peace in the world. What decade is that?

Now let's explore our first dependent variable *chalwin4* which measures whether the challenger prevails. In how many cases did the challenger prevail? In how many cases did the challenger lose?

One of our hypotheses argues that if democracies are challengers, they are most likely to prevail. Let's conduct a very simplistic analysis of this proposition. Calculate the mean score of challengers' democracy scores for the each outcome of the conflict result (*chalwin4*). How does our proposition hold? Give a short substantial explanation to the pattern.

Explore another key assumption of the theory of democratic peace that democracies do not wage war with each other. What is the relationship between democracy scores of challenger and defender countries? Would this type of analysis appropriate in this case?

Conduct some fun analysis - do challenger countries which have nuclear weapon differ from those challengers which do not have nukes? Run a t-test to learn whether the two groups differ. Could you give some explanation to this pattern?

Finally, transform the variable *relres4* which contains negative values. Change negative values to *N.A.* You may refer to Google, the book, or our presentations to check how it is done.

Table 1: Variable Description

Variable Name	Variable Definition
crisis	ICB Crisis Number
crisname	Name of ICB Crisis
year	Year Crisis Initiated
chall	Challenger's COW CCODE
def	Defender's COW CCODE
chalwin3	Challenger Prevails - 3 Point Scale (Lose, Draw Win)
chalwin4	Challenger Prevails - 4 Point Scale (lose, stalemate, compromise, win)
relcapbl	Relative Military Capabilities (COW)
rlstake3	Relative Interests at Stake
relres4	Relative Resolve
chalnuke	Challenger Nuclear Capable
defnukes	Defender Nuclear Capable
allycpbl	Relative Capabilities X Alliance Ties
chaldemoc	Challenger's Democracy Score (1-21)
defdemoc	Defender's Democracy Score (1-21)
demcapbl	Joint Democracy X Relative Capabilities
joinreg	Chal Democ X Def Democ
audresq4	Audience Cost Advantage X Relative Resolve
audadvsq	Audience Costs Advantage (Chaldemoc - Defdemoc) <sup>2</sup>
allies	Alliance between Chal & Def
chalmajr	Chal is COW Major Power
defmajor	Def is COW Major Power
chaliss	Chal ICB issue at Stake
defiss	Def ICB Issue at Stake
chalcpbl	Challenger % of Global Capability
defcapbl	Defender % of Global Capability
chpowicb	Chal Major Power (ICB Scale)
dfpowicb	Def Major Power (ICB Scale)
nwsevvio	ICB SEVIO variable
nwcenvio	ICB CENVIO Variable
chalmgt	Chal ICB Crisis Management Strategy
defmgt	Def ICB Crisis Management Strategy
deftrigr	Chal's Act that Triggers Crisis for Def (ICB)
dfmajres	Def's Major Response to the Trigger (ICB)

## Confirmatory Analysis and the Hypothesis Testing

Now let's turn your attention to checking Gelpi and Griesdorf's first hypothesis. We predict whether the challenger wins by the democracy scores of the challenger and the defender. Remember that our hypothesis was that democratic defenders are less likely to prevail in the conflict whilst democratic challengers are more likely to do so. Run the regression model and examine the results. Can we argue that the first hypothesis is correct? Why?

The second hypothesis referred to the capability of democracies to prevail in any international conflict regardless the fact they were defenders or the challengers. Remember Lake argued that democracies always possess necessary military capabilities, what could be the key of solving the puzzle. Run another model which would predict the variable measuring relative military capabilities *relcapbl* by the democracy scores of the challenger and the defender, as well as the score of relative interests at stake. What do the results say about the hypothesis? Did Lake's propositions prove to be right? Give a substantial explanation of the observed pattern.

## Submission

Zip the *whole folder* for the final. Name the file according to the following format: *surname\_final.zip*. Upload the file to Dropbox which could be accessed through [this link](#) or by typing the following link to your browser: <https://goo.gl/1Dvysh>

Please submit your assignment by **23:59 Sunday, February 4th, 2018** only via the link indicated above.

We wish you good luck!

Dato & Rati