

Welcome!
R for Psychology
Naomi Ekas

Hello world!

Data science

+

Data science is an exciting discipline that allows you to turn raw data into understanding, insight, and knowledge.

+

We're going to learn to do this in a `tidy` way -- more on that later!

+

This is a course on introduction to data science, with an emphasis on statistical thinking.

Course FAQ

Q - What data science background does this course assume?

A - None.

Q - Is this an intro stat course?

A - While statistics \neq data science, they are very closely related and have tremendous of overlap. Hence, this course is a great way to get started with statistics. However this course is *not* your typical high school statistics course.

Q - Will we be doing computing?

A - Yes.

Course FAQ

Q - Is this an intro CS course?

A - No, but many themes are shared.

Q - What computing language will we learn?

A - R.

Q: Why not language X?

A: We can discuss that over .

Software

R Console

R version 4.0.2 (2020-06-22) -- "Taking Off Again"
Copyright (C) 2020 The R Foundation for Statistical Computing
Platform: x86_64-apple-darwin17.0 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

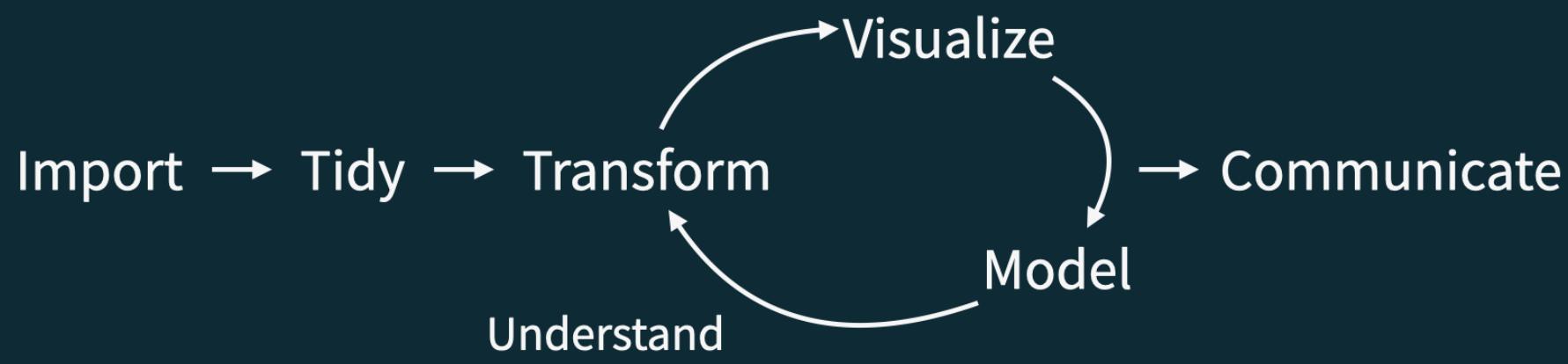
Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

[R.app GUI 1.72 (7847) x86_64-apple-darwin17.0]

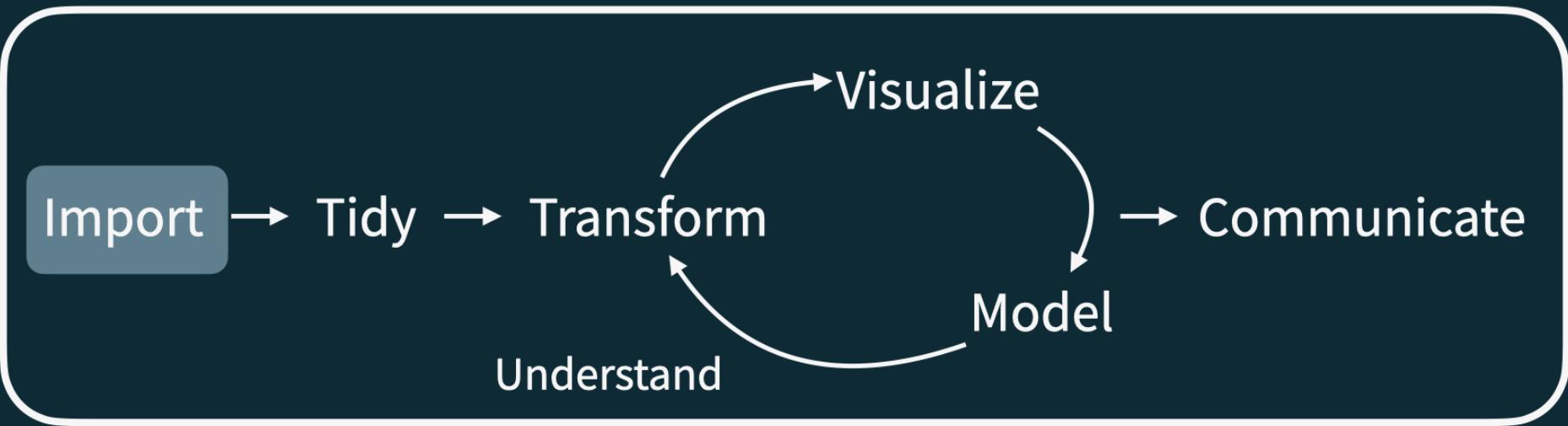
[History restored from /Users/mine/.Rapp.history]

> |

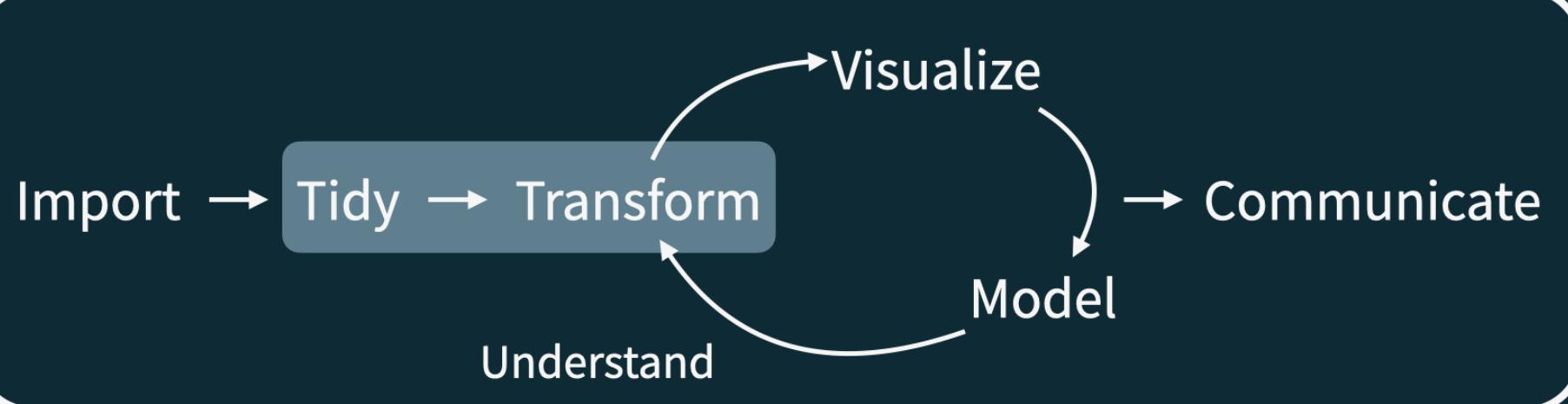
Data science life cycle



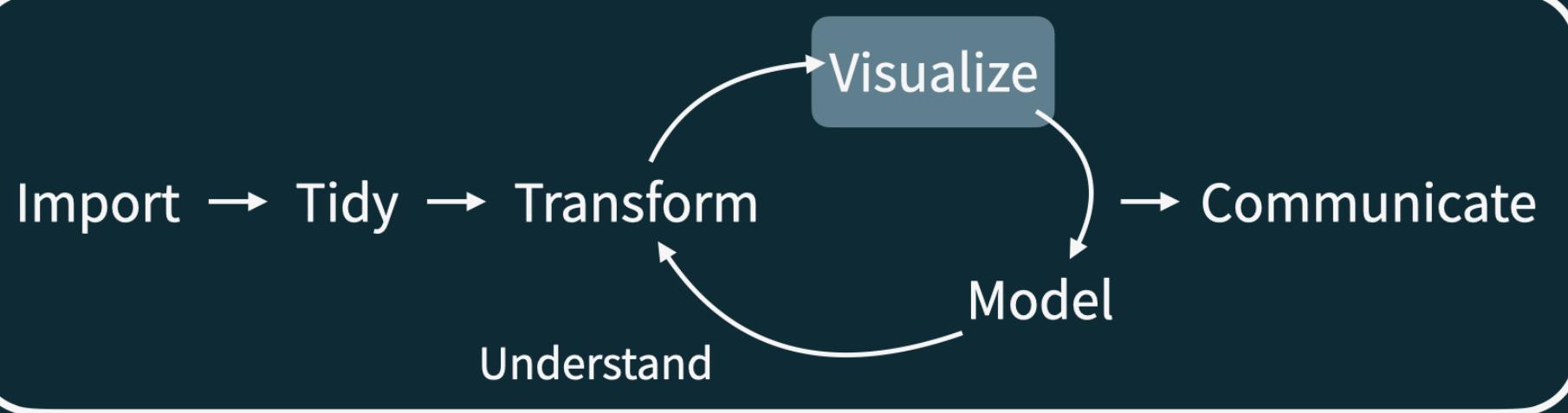
Program



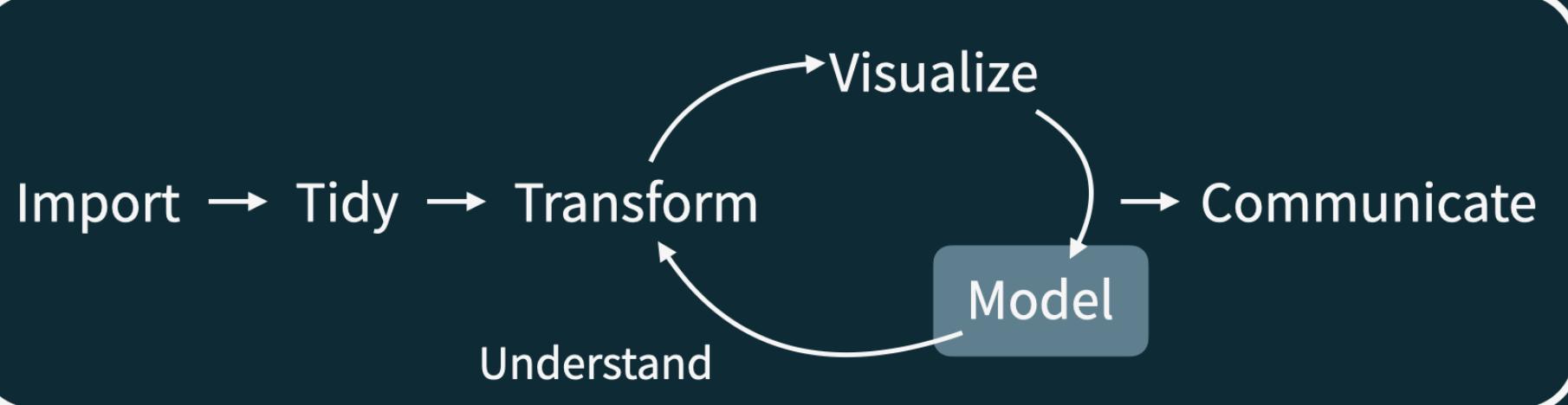
Program



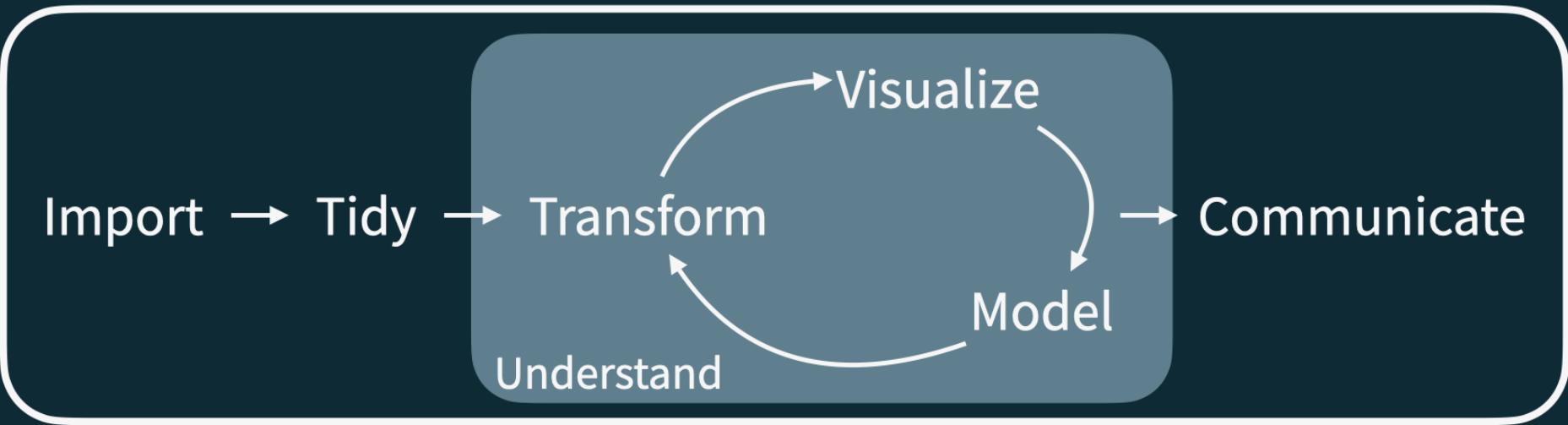
Program



Program

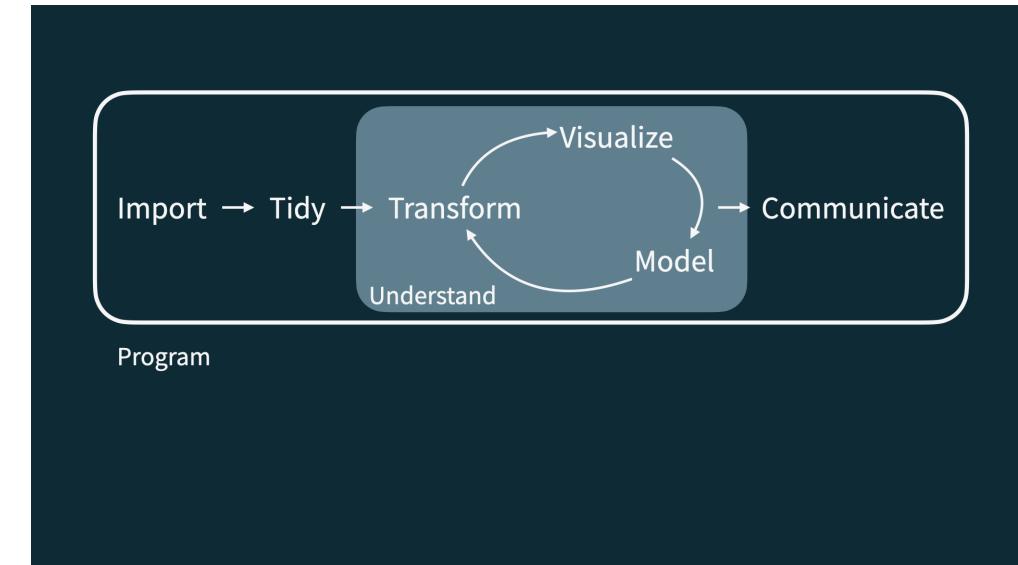
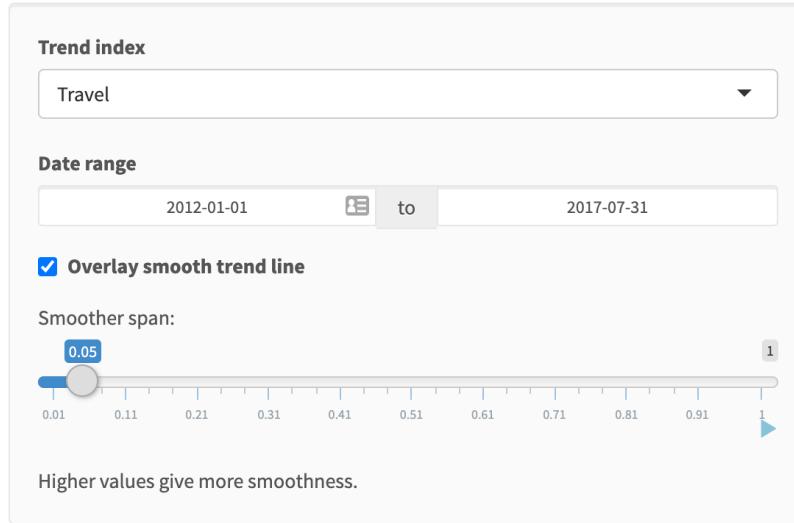


Program

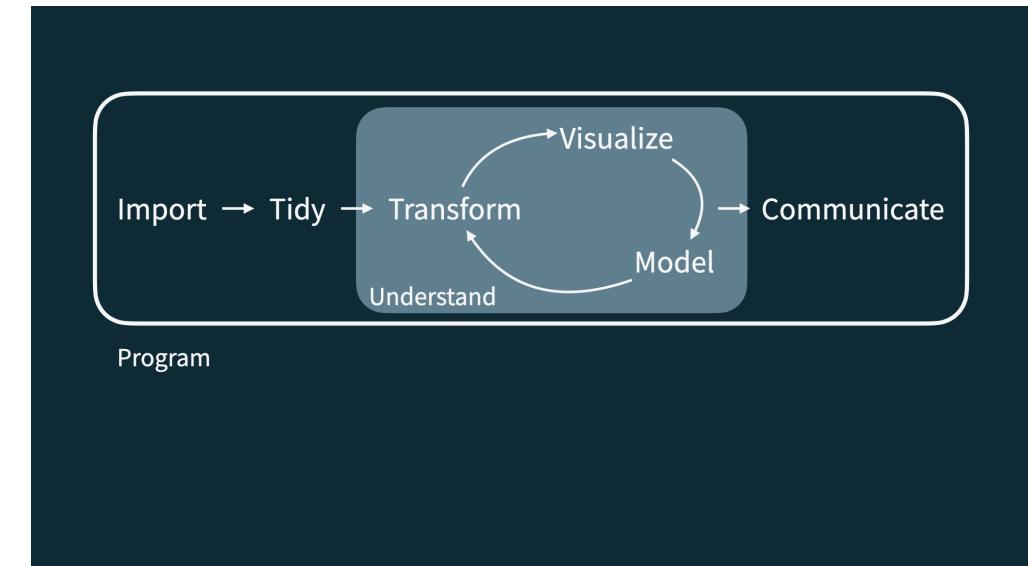
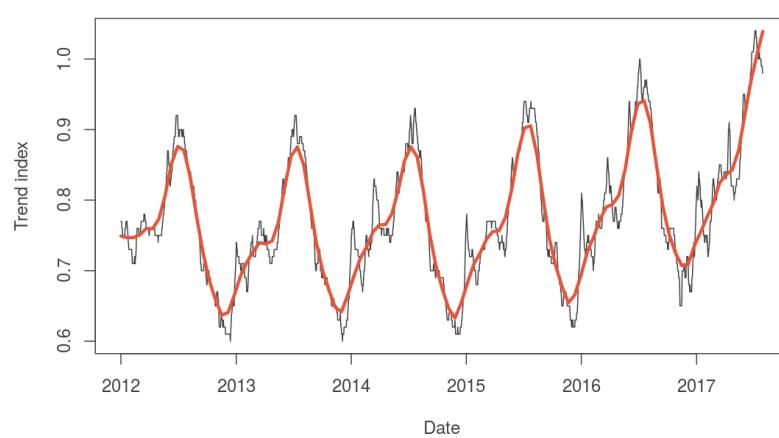


Program

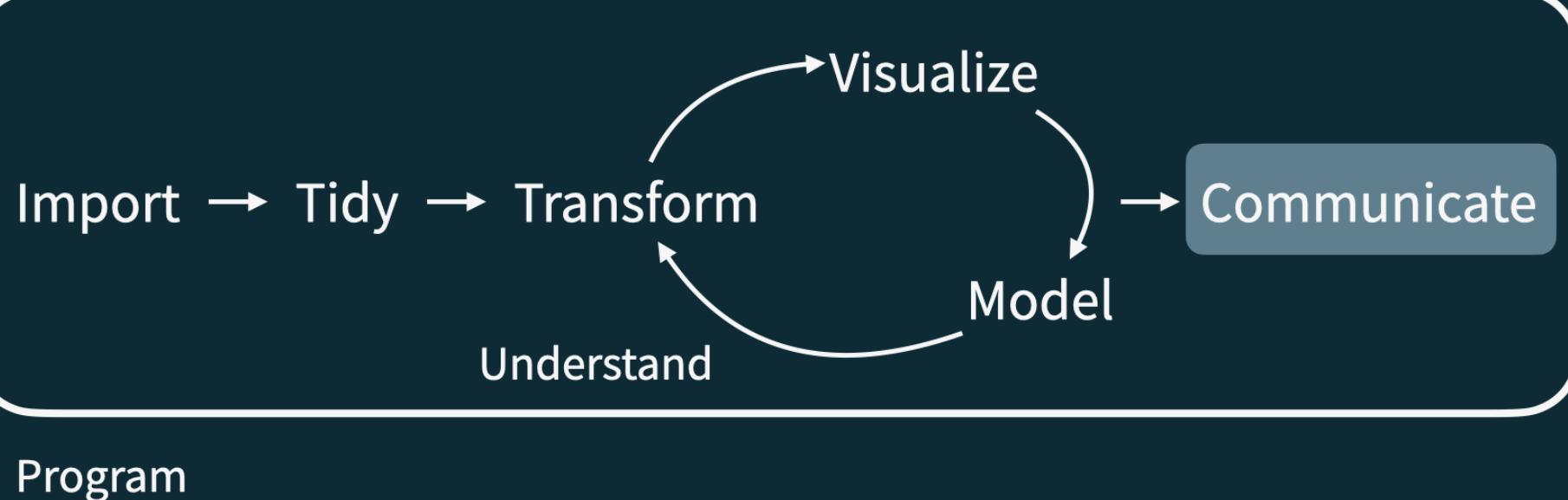
Google Trend Index



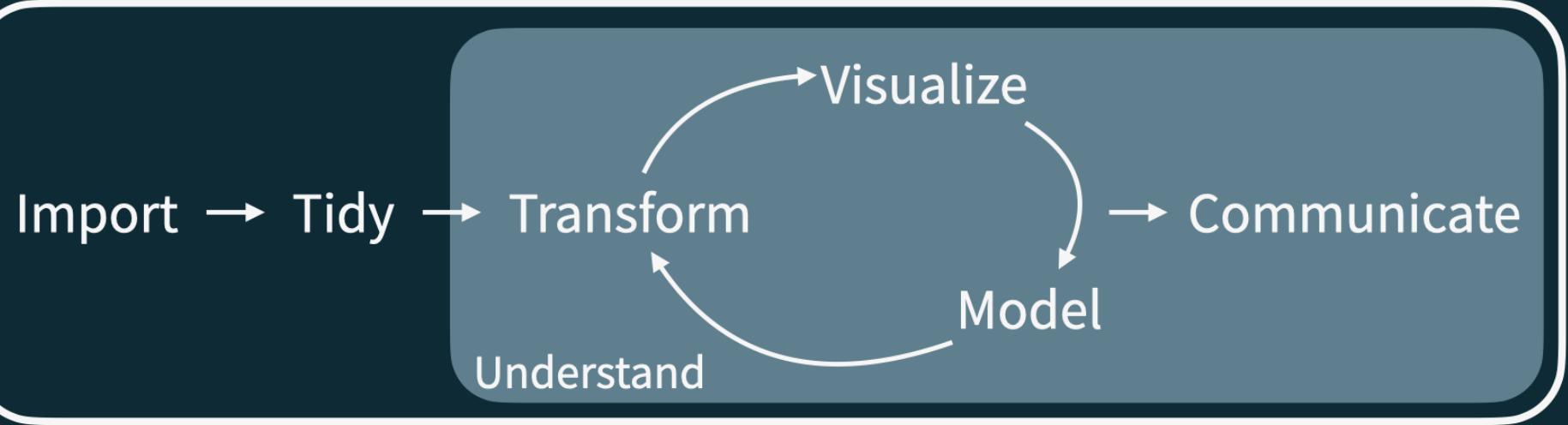
Google Trend Index



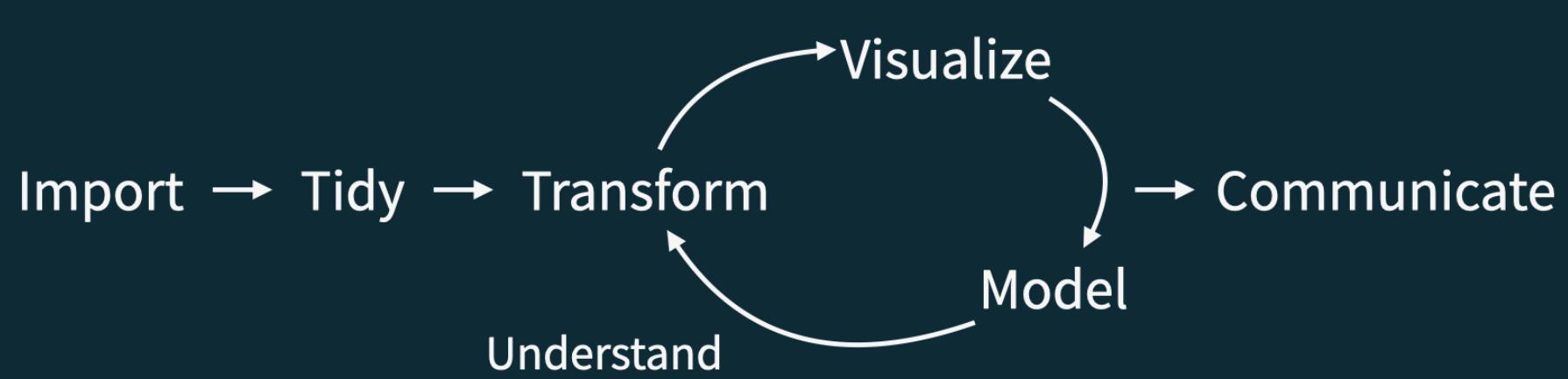
```
## # A tibble: 5 x 2
##   date      season
##   <chr>     <chr>
## 1 23 January 2017 winter
## 2 4 March    2017  spring
## 3 14 June   2017  summer
## 4 1 September 2017 fall
## 5 ...
```



Program



Program



Program

```

1 <!--
2   title: "UN Votes"
3   authors: "Mine Çetinkaya-Rundel"
4   date: "2018-05-01"
5   abstract:
6     UN documents
7       - text: yes
8       - text_finite: yes
9   -->
10
11 ## DATA
12
13 How do various countries vote in the United Nations General Assembly, how have
14 their voting patterns evolved throughout time, and how similarly or differently
15 do they view certain issues? Answering these questions (at a high level) is the
16 focus of this analysis.
17
18 We will use the tidyverse, lubridate, and mosaic packages for the
19 data wrangling and visualization, and the DT package for interactive display
20 of tabular output. The data we're using come from the unvotes package.
21
22 ##(r load-packages, warning=FALSE, message=FALSE)
23 library(tidyverse)
24 library(lubridate)
25 library(mosaic)
26 library(DT)
27 library(unvotes)
28
29
30 ## UN voting patterns (plotting)
31
32 Let's create a data visualization that displays how the voting record of the
33 UK & US changed over time on a variety of issues, and compares it
34 to two other countries: US and Turkey.
35
36 We can easily change which countries are being plotted by changing which
37 countries the code above "titles" for. Note that the country name should be
38 spelled and capitalized exactly the same way as it appears in the data. See
39 the \(Appendix\)(Appendix) for a list of the countries in the data.
40
41 ##(r plot-yearly-vote-issue, fig.width=8, fig.height=4, message=FALSE)
42 un_votes %>%
43   mutate(
44     country =
45     case_when(
46       country == "United Kingdom of Great Britain and Northern Ireland" ~ "UK &
47       "US",
48       country == "United States of America" ~ "US",
49       TRUE ~ country
50     )
51     inner_join(un_vote_issue, by = "vcode") %>%
52   )

```

academy search | master | RStudio

File File Packages Help About

Environment History Connections Go Tutorial

File File Packages Help About

File File Packages Help About

UN Votes

Mine Çetinkaya-Rundel

2020-05-18

Introduction

How do various countries vote in the United Nations General Assembly, how have their voting patterns evolved throughout time, and how similarly or differently do they view certain issues? Answering these questions (at a high level) is the focus of this analysis.

We will use the `tidyverse`, `lubridate`, and `mosaic` packages for the data wrangling and visualization, and the `DT` package for interactive display of tabular output. The data we're using come from the `unvotes` package.

`library(tidyverse)`
`library(lubridate)`
`library(mosaic)`
`library(DT)`
`library(unvotes)`

UN voting patterns

Let's create a data visualization that displays how the voting record of the UK & US changed over time on a variety of issues, and compares it to two other countries: US and Turkey.

We can easily change which countries are being plotted by changing which countries the code above "titles" for. Note that the country name should be spelled and capitalized exactly the same way as it appears in the data. See the [\(Appendix\)](#)(Appendix) for a list of the countries in the data.

```

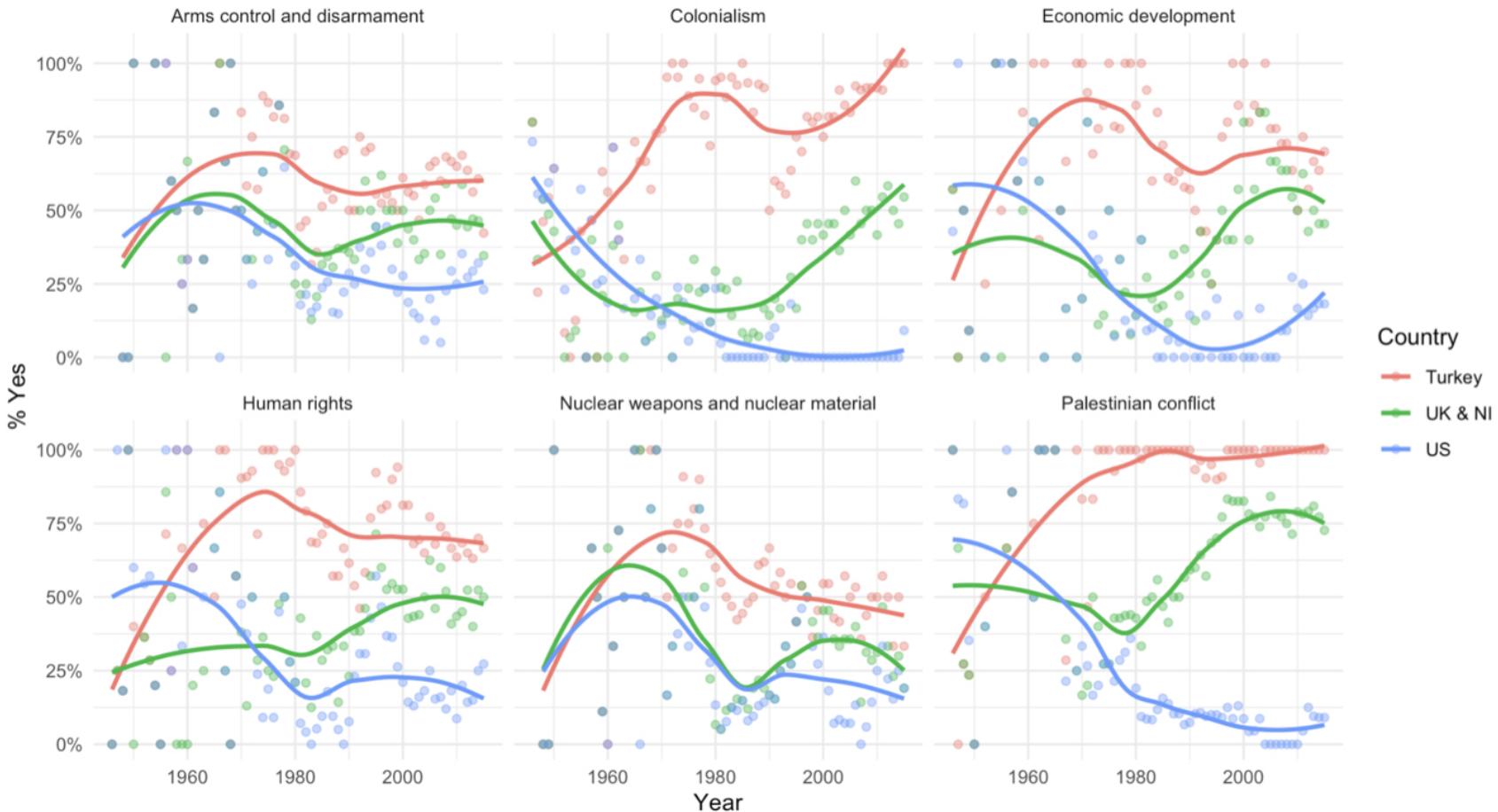
##(r plot-yearly-vote-issue, fig.width=8, fig.height=4, message=FALSE)
un_votes %>%
  mutate(
    country =
    case_when(
      country == "United Kingdom of Great Britain and Northern Ireland" ~ "UK &
      "US",
      country == "United States of America" ~ "US",
      TRUE ~ country
    )
    inner_join(un_vote_issue, by = "vcode") %>%
  )

```

Let's dive in!



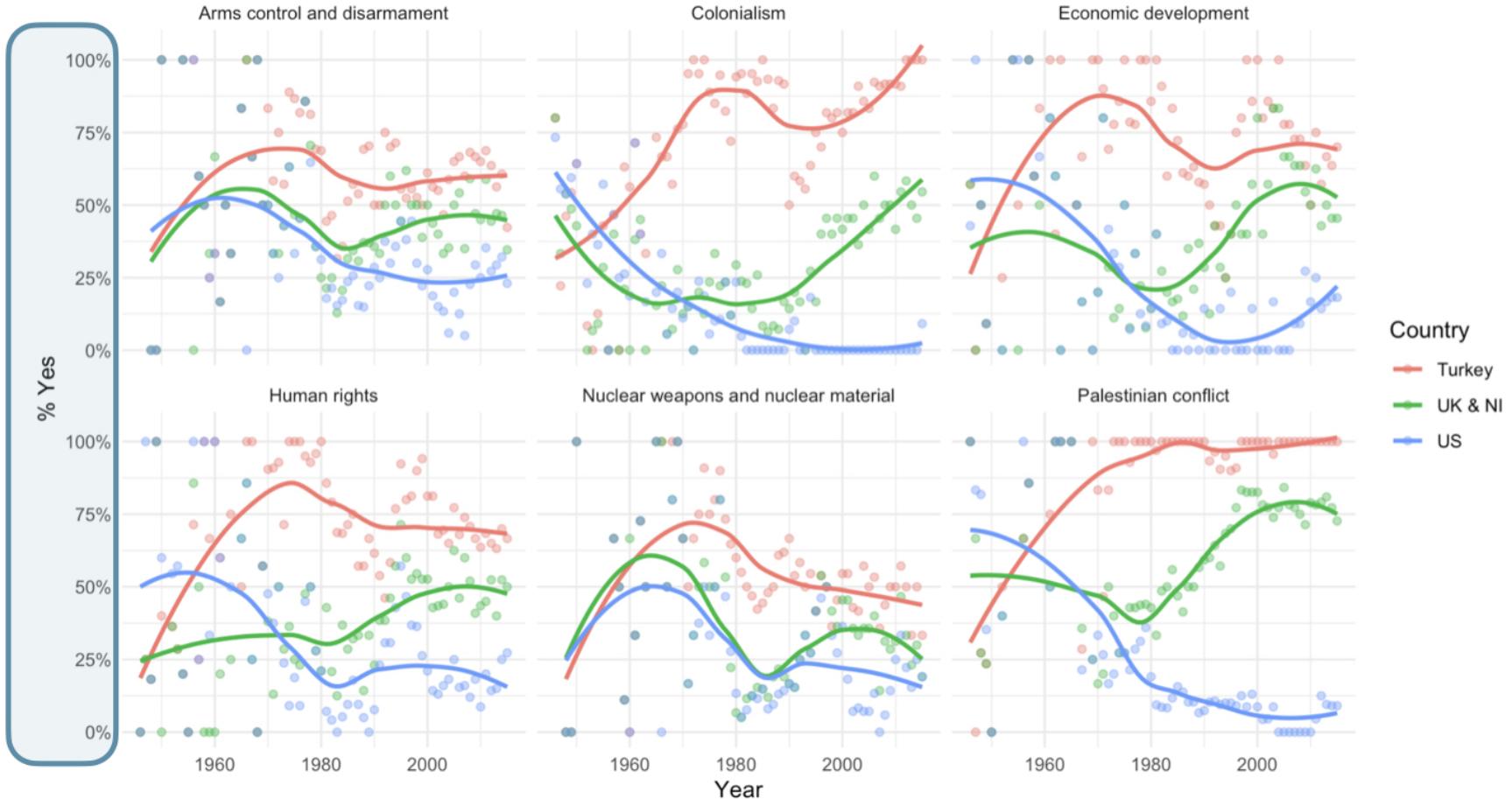
Percentage of 'Yes' votes in the UN General Assembly
1946 to 2015



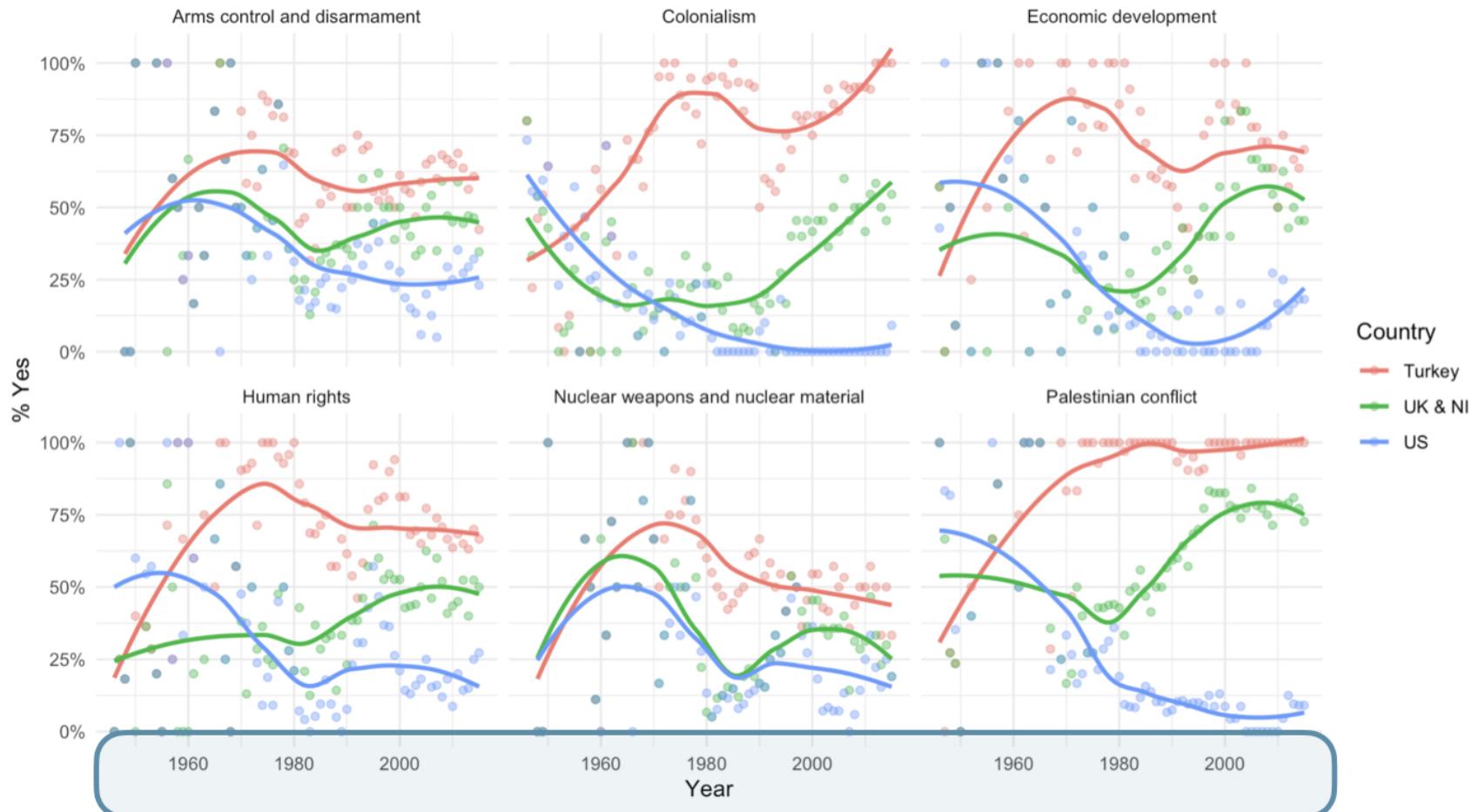
Country

- Turkey
- UK & NI
- US

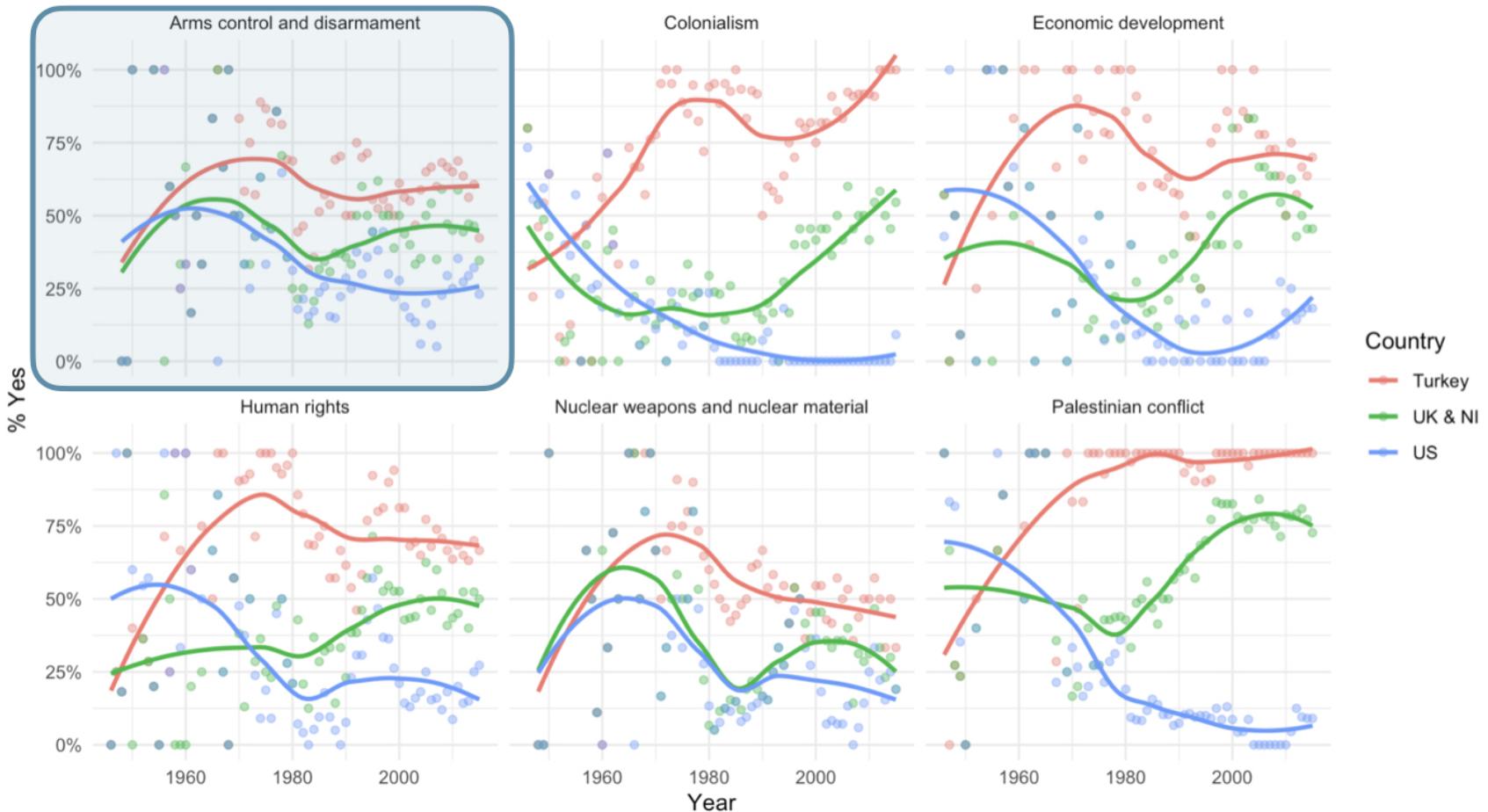
Percentage of 'Yes' votes in the UN General Assembly
1946 to 2015



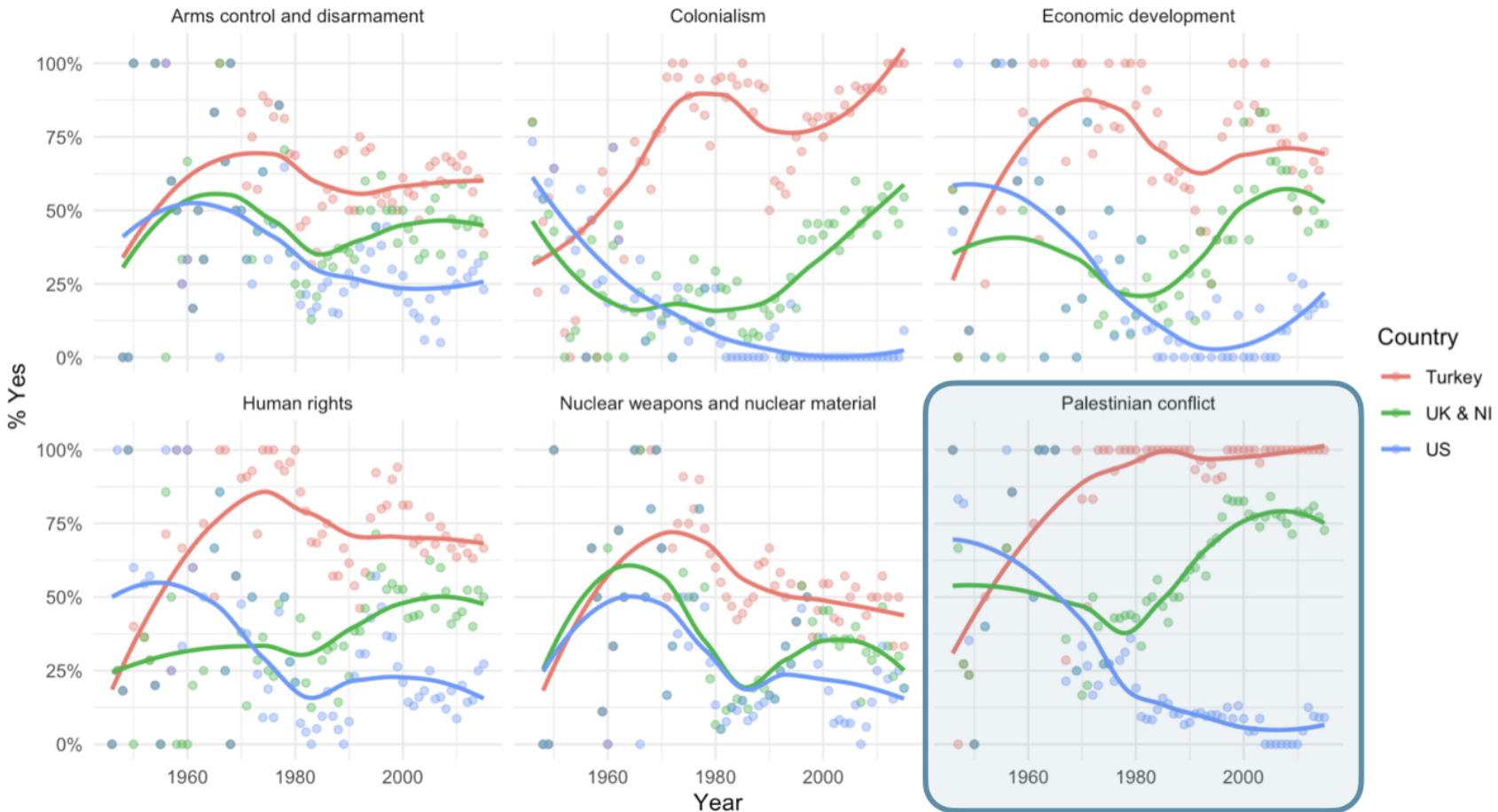
Percentage of 'Yes' votes in the UN General Assembly
1946 to 2015



Percentage of 'Yes' votes in the UN General Assembly
1946 to 2015



Percentage of 'Yes' votes in the UN General Assembly
1946 to 2015



un_votes x un_roll_calls x un_roll_call_issues x

Filter

	rcid	country	country_code	vote
1		un_votes x	un_roll_calls x	un_roll_call_issues x
2		Filter		
3		rcid	session	importantvote
4		1	un_votes x	un_roll_calls x
5		2	Filter	un_roll_call_issues x
6		3	rcid	short_name
7		4	1	3372 me Palestinian conflict
8		5	2	3658 me Palestinian conflict
9		6	3	3692 me Palestinian conflict
10		7	4	2901 me Palestinian conflict
11		8	5	3020 me Palestinian conflict
12		9	6	3217 me Palestinian conflict
13		10	7	3298 me Palestinian conflict
14		11	8	3429 me Palestinian conflict
15		12	9	3558 me Palestinian conflict
16		13	10	3625 me Palestinian conflict
17		14	11	3714 me Palestinian conflict
18		15	12	3368 me Palestinian conflict
19		16	13	3410 me Palestinian conflict
20		17	14	3539 me Palestinian conflict
21		18	15	3634 me Palestinian conflict
22		19	16	4880 me Palestinian conflict
23		20	17	4126 me Palestinian conflict
24		21	18	4078 me Palestinian conflict
25		22	19	3016 me Palestinian conflict
26		23	20	4290 me Palestinian conflict
Showing 1	21	24	21	4717 me Palestinian conflict
	22	25	22	4790 me Palestinian conflict
	23	Showing 1	23	4483 me Palestinian conflict
	24		24	4555 me Palestinian conflict
	25		25	4646 me Palestinian conflict
	26		26	5020 me Palestinian conflict
				Showing 1 to 26 of 5,281 entries, 3 total columns

unvotes.Rmd

Insert | Run | A

```
36 We can easily change which countries are being plotted by changing which
37 countries the code above `filter`'s for. Note that the country name should be
38 spelled and capitalized exactly the same way as it appears in the data. See
39 the [Appendix](#appendix) for a list of the countries in the data.
40
41 ```{r plot-yearly-yes-issue, fig.width=10, fig.height=6, message=FALSE}
42 un_votes %>%
43   mutate(
44     country =
45       case_when(
46         country == "United Kingdom of Great Britain and Northern Ireland" ~ "UK & NI",
47         country == "United States of America" ~ "US",
48         TRUE ~ country
49       )
50   ) %>%
51   inner_join(un_roll_calls, by = "rcid") %>%
52   inner_join(un_roll_call_issues, by = "rcid") %>%
53   filter(country %in% c("UK & NI", "US", "Turkey")) %>%
54   mutate(year = year(date)) %>%
55   group_by(country, year, issue) %>%
56   summarize(percent_yes = mean(vote == "yes")) %>%
57   ggplot(mapping = aes(x = year, y = percent_yes, color = country)) +
58   geom_point(alpha = 0.4) +
59   geom_smooth(method = "loess", se = FALSE) +
60   facet_wrap(~issue) +
61   scale_y_continuous(labels = percent) +
62   labs(
63     title = "Percentage of 'Yes' votes in the UN General Assembly",
64     subtitle = "1946 to 2015",
65     y = "% Yes",
66     x = "Year",
67     color = "Country"
68   ) +
69   theme_minimal()
70 ```
71
72
73 ## References {#references}
74
```

unvotes.Rmd

Insert | Run | A

```
36 We can easily change which countries are being plotted by changing which
37 countries the code above `filter`'s for. Note that the country name should be
38 spelled and capitalized exactly the same way as it appears in the data. See
39 the [Appendix](#appendix) for a list of the countries in the data.
40
41 ```{r plot-yearly-yes-issue, fig.width=10, fig.height=6, message=FALSE}
42 un_votes %>%
43   mutate(
44     country =
45       case_when(
46         country == "United Kingdom of Great Britain and Northern Ireland" ~ "UK & NI",
47         country == "United States of America" ~ "US",
48         TRUE ~ country
49       )
50     ) %>%
51   inner_join(un_roll_calls, by = "rcid") %>%
52   inner_join(un_roll_call_issues, by = "rcid") %>%
53   filter(country %in% c("UK & NI", "US", "Turkey")) %>%
54   mutate(year = year(date)) %>%
55   group_by(country, year, issue) %>%
56   summarize(percent_yes = mean(vote == "yes")) %>%
57   ggplot(mapping = aes(x = year, y = percent_yes, color = country)) +
58   geom_point(alpha = 0.4) +
59   geom_smooth(method = "loess", se = FALSE) +
60   facet_wrap(~issue) +
61   scale_y_continuous(labels = percent) +
62   labs(
63     title = "Percentage of 'Yes' votes in the UN General Assembly",
64     subtitle = "1946 to 2015",
65     y = "% Yes",
66     x = "Year",
67     color = "Country"
68   ) +
69   theme_minimal()
70 ```
71
72
73 ## References {#references}
74
```

32:2 # UN voting patterns R Markdown

unvotes.Rmd

Insert | Run | A

```
36 We can easily change which countries are being plotted by changing which
37 countries the code above `filter`'s for. Note that the country name should be
38 spelled and capitalized exactly the same way as it appears in the data. See
39 the [Appendix](#appendix) for a list of the countries in the data.
40
41 ```{r plot-yearly-yes-issue, fig.width=10, fig.height=6, message=FALSE}
42 un_votes %>%
43   mutate(
44     country =
45       case_when(
46         country == "United Kingdom of Great Britain and Northern Ireland" ~ "UK & NI",
47         country == "United States of America" ~ "US",
48         TRUE ~ country
49       )
50   ) %>%
51   inner_join(un_roll_calls, by = "rcid") %>%
52   inner_join(un_roll_call_issues, by = "rcid") %>%
53   filter(country %in% c("UK & NI", "US", "Turkey")) %>%
54   mutate(year = year(date)) %>%
55   group_by(country, year, issue) %>%
56   summarize(percent_yes = mean(vote == "yes")) %>%
57   ggplot(mapping = aes(x = year, y = percent_yes, color = country)) +
58   geom_point(alpha = 0.4) +
59   geom_smooth(method = "loess", se = FALSE) +
60   facet_wrap(~issue) +
61   scale_y_continuous(labels = percent) +
62   labs(
63     title = "Percentage of 'Yes' votes in the UN General Assembly",
64     subtitle = "1946 to 2015",
65     y = "% Yes",
66     x = "Year",
67     color = "Country"
68   ) +
69   theme_minimal()
70 ```
71
72
73 ## References {#references}
74
```

32:2 # UN voting patterns R Markdown

unvotes.Rmd

Insert | Run | A

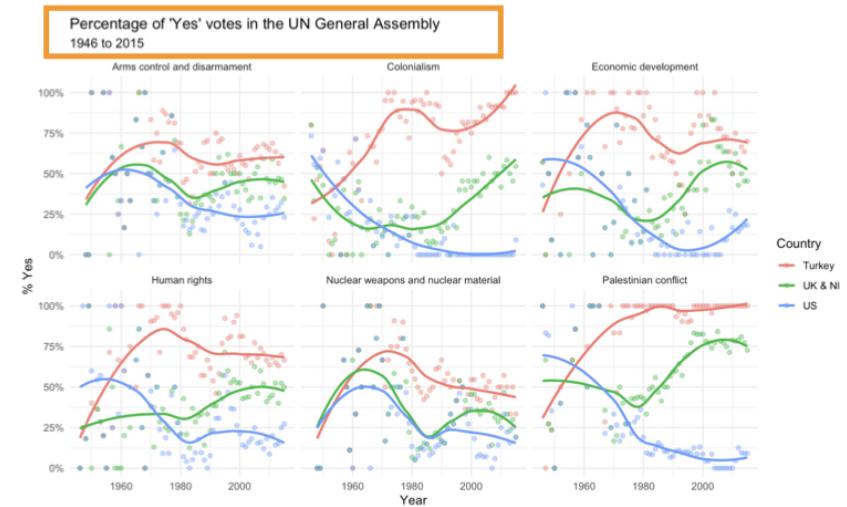
```
36 We can easily change which countries are being plotted by changing which
37 countries the code above `filter`'s for. Note that the country name should be
38 spelled and capitalized exactly the same way as it appears in the data. See
39 the [Appendix](#appendix) for a list of the countries in the data.
40
41 ```{r plot-yearly-yes-issue, fig.width=10, fig.height=6, message=FALSE}
42 un_votes %>%
43   mutate(
44     country =
45       case_when(
46         country == "United Kingdom of Great Britain and Northern Ireland" ~ "UK & NI",
47         country == "United States of America" ~ "US",
48         TRUE ~ country
49       )
50   ) %>%
51   inner_join(un_roll_calls, by = "rcid") %>%
52   inner_join(un_roll_call_issues, by = "rcid") %>%
53   filter(country %in% c("UK & NI", "US", "Turkey")) %>%
54   mutate(year = year(date)) %>%
55   group_by(country, year, issue) %>%
56   summarize(percent_yes = mean(vote == "yes")) %>%
57   ggplot(mapping = aes(x = year, y = percent_yes, color = country)) +
58   geom_point(alpha = 0.4) +
59   geom_smooth(method = "loess", se = FALSE) +
60   facet_wrap(~issue) +
61   scale_y_continuous(labels = percent) +
62   labs(
63     title = "Percentage of 'Yes' votes in the UN General Assembly",
64     subtitle = "1946 to 2015",
65     y = "% Yes",
66     x = "Year",
67     color = "Country"
68   ) +
69   theme_minimal()
70 ```
71
72
73 ## References {#references}
74
```

```

36 We can easily change which countries are being plotted by changing which
37 countries the code above `filter`'s for. Note that the country name should be
38 spelled and capitalized exactly the way as it appears in the data. See
39 the [Appendix](#appendix) for a list of the countries in the data.
40
41 ```{r plot-yearly-yes-issue, fig.width=10, fig.height=6, message=FALSE}
42 un_votes %>%
43   mutate(
44     country =
45       case_when(
46         country == "United Kingdom of Great Britain and Northern Ireland" ~ "UK & NI",
47         country == "United States of America" ~ "US",
48         TRUE ~ country
49       )
50     ) %>%
51   inner_join(un_roll_calls, by = "rcid") %>%
52   inner_join(un_roll_call_issues, by = "rcid") %>%
53   filter(country %in% c("UK & NI", "US", "Turkey")) %>%
54   mutate(year = year(date)) %>%
55   group_by(country, year, issue) %>%
56   summarize(percent_yes = mean(vote == "yes")) %>%
57   ggplot(mapping = aes(x = year, y = percent_yes, color = country)) +
58   geom_point(alpha = 0.4) +
59   geom_smooth(method = "loess", se = FALSE) +
60   facet_wrap(~issue) +
61   scale_y_continuous(labels = percent) +
62   labs(
63     title = "Percentage of 'Yes' votes in the UN General Assembly",
64     subtitle = "1946 to 2015",
65     y = "% Yes",
66     x = "Year",
67     color = "Country"
68   ) +
69   theme_minimal()
70 ```

71
72
73 ## References {#references}
74

```



academy-launch - master - RStudio

File Environment History Connections Git Tutorial

Files Plots Packages Help Viewer

Knit Insert Run Publish

unvotes.Rmd x

```
1 ---  
2 title: "UN Votes"  
3 author: "Mine Çetinkaya-Rundel"  
4 date: `r Sys.Date()`  
5 output:  
6   html_document:  
7     toc: yes  
8     toc_float: yes  
9 ---  
10  
11 ## Introduction  
12  
13 How do various countries vote in the United Nations General Assembly, how have  
14 their voting patterns evolved throughout time, and how similarly or differently  
15 do they view certain issues? Answering these questions (at a high level) is the  
16 focus of this analysis.  
17  
18 We will use the tidyverse, lubridate, and scales packages for the  
19 data wrangling and visualization, and the DT package for interactive display  
20 of tabular output. The data we're using come from the unvotes package.  
21  
22 ````{r load-packages, warning=FALSE, message=FALSE}  
23 library(tidyverse)  
24 library(lubridate)  
25 library(scales)  
26 library(DT)  
27 library(unvotes)  
28 ````  
29  
30 ## UN voting patterns {#voting}  
31  
32 Let's create a data visualization that displays how the voting record of the  
33 UK & NI changed over time on a variety of issues, and compares it  
34 to two other countries: US and Turkey.  
35  
36 We can easily change which countries are being plotted by changing which  
37 countries the code above `filter`'s for. Note that the country name should be  
38 spelled and capitalized exactly the same way as it appears in the data. See  
39 the [Appendix](#appendix) for a list of the countries in the data.  
40  
41 ````{r plot-yearly-yes-issue, fig.width=10, fig.height=6, message=FALSE}  
42 un_votes %>%  
43   mutate(  
44     country =
```

Introduction

UN voting patterns

References

Appendix

UN Votes

Mine Çetinkaya-Rundel

2020-08-18

Introduction

How do various countries vote in the United Nations General Assembly, how have their voting patterns evolved throughout time, and how similarly or differently do they view certain issues? Answering these questions (at a high level) is the focus of this analysis.

We will use the **tidyverse**, **lubridate**, and **scales** packages for the data wrangling and visualization, and the **DT** package for interactive display of tabular output. The data we're using come from the **unvotes** package.

```
library(tidyverse)  
library(lubridate)  
library(scales)  
library(DT)  
library(unvotes)
```

UN voting patterns

Let's create a data visualization that displays how the voting record of the UK & NI changed over time on a variety of issues, and compares it to two other countries: US and Turkey.

We can easily change which countries are being plotted by changing which countries the code above `filter`'s for. Note that the country name should be spelled and capitalized exactly the same way as it appears in the data. See the [Appendix](#) for a list of the countries in the data.

```
un_votes %>%  
  mutate(  
    country =  
      case_when(  
        country == "United Kingdom of Great Britain and Northern Ireland" ~ "UK & NI",  
        country == "United States of America" ~ "US",  
        TRUE ~ country  
      )  
  ) %>%  
  inner_join(un_roll_calls, by = "rcid") %>%  
  inner_join(un_roll_call_issues, by = "rcid") %>%  
  filter(country %in% c("UK & NI", "US", "Turkey")) %>%  
  mutate(year = year(date)) %>%  
  group_by(country, year, issue) %>%
```

academy-launch - master - RStudio

File Environment History Connections Git Tutorial

Insert Run Knit Addins

Files Plots Packages Help Viewer

UN Votes.Rmd

1 title: "UN Votes"
2 author: "Mine Çetinkaya-Rundel"
3 date: `r Sys.Date()`
4 output:
5 html_document:
6 toc: yes
7 toc_float: yes
8 ---
9
11 ## Introduction
12
13 How do various countries vote in the United Nations General Assembly, how have
14 their voting patterns evolved throughout time, and how similarly or differently
15 do they view certain issues? Answering these questions (at a high level) is the
16 focus of this analysis.
17
18 We will use the **tidyverse**, **lubridate**, and **scales** packages for the
19 data wrangling and visualization, and the **DT** package for interactive display
20 of tabular output. The data we're using come from the **unvotes** package.
21
22 ``{r load-packages, warning=FALSE, message=FALSE}
23 library(tidyverse)
24 library(lubridate)
25 library(scales)
26 library(DT)
27 library(unvotes)
28 ````
29
30 ## UN voting patterns {#voting}
31
32 Let's create a data visualization that displays how the voting record of the
33 UK & NI changed over time on a variety of issues, and compares it
34 to two other countries: US and Turkey.
35
36 We can easily change which countries are being plotted by changing which
37 countries the code above `filter`'s for. Note that the country name should be
38 spelled and capitalized exactly the same way as it appears in the data. See
39 the [Appendix](#appendix) for a list of the countries in the data.
40
41 ``{r plot-yearly-yes-issue, fig.width=10, fig.height=6, message=FALSE}
42 un_votes %>%
43 mutate(
44 country =

Introduction

UN voting patterns

References

Appendix

UN Votes

Mine Çetinkaya-Rundel

2020-08-18

Introduction

How do various countries vote in the United Nations General Assembly, how have their voting patterns evolved throughout time, and how similarly or differently do they view certain issues? Answering these questions (at a high level) is the focus of this analysis.

We will use the **tidyverse**, **lubridate**, and **scales** packages for the data wrangling and visualization, and the **DT** package for interactive display of tabular output. The data we're using come from the **unvotes** package.

```
library(tidyverse)
library(lubridate)
library(scales)
library(DT)
library(unvotes)
```

UN voting patterns

Let's create a data visualization that displays how the voting record of the UK & NI changed over time on a variety of issues, and compares it to two other countries: US and Turkey.

We can easily change which countries are being plotted by changing which countries the code above `filter`'s for. Note that the country name should be spelled and capitalized exactly the same way as it appears in the data. See the [Appendix](#) for a list of the countries in the data.

```
un_votes %>%
  mutate(
    country =
      case_when(
        country == "United Kingdom of Great Britain and Northern Ireland" ~ "UK & NI",
        country == "United States of America" ~ "US",
        TRUE ~ country
      )
  ) %>%
  inner_join(un_roll_calls, by = "rcid") %>%
  inner_join(un_roll_call_issues, by = "rcid") %>%
  filter(country %in% c("UK & NI", "US", "Turkey")) %>%
  mutate(year = year(date)) %>%
  group_by(country, year, issue) %>%
```

minecr.shinyapps.io/unvotes

