

# **WEEK 4**

# **THEMES & ANNOTATIONS**

DATA VISUALIZATION FOR SOCIAL SCIENTISTS

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# ROAD MAP FOR TODAY

- Today:

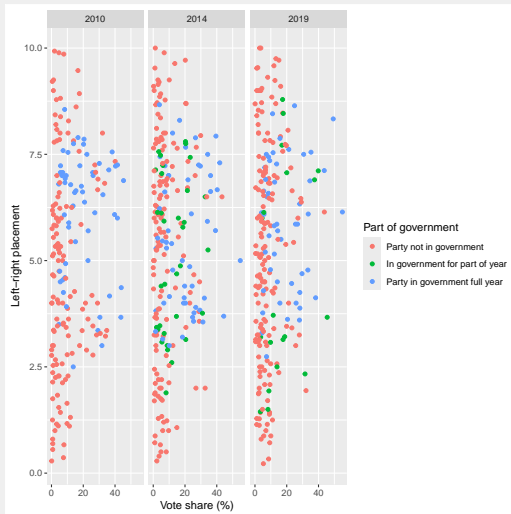
- ▶ Theme adjustment
- ▶ Annotations

- By next week, please...

- ▶ Problem set #3

# BASE PLOT: CHES DATA

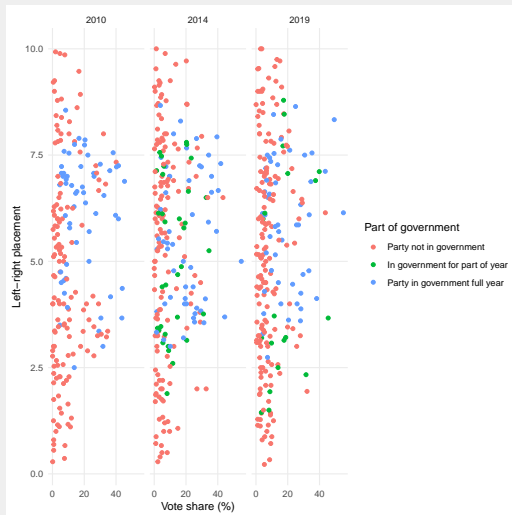
```
1 # Import dataset
2 CHES <- read.csv("https://raw.githubusercontent.com/ASDS-TCO
  /DataViz_2026/refs/heads/main/datasets/1999-2024_CHES.csv")
3 # subset to only years 2010, 2014,
  2019
4 CHES_subset <- CHES |> filter(year
  <2024 & year>2008)
5 # change level labels for govt
  variable
6 CHES_subset$govt <- as.factor(CHES_
  subset$govt)
7 levels(CHES_subset$govt) <- c("
  Party not in government", "In
  government for part of year", "
  Party in government full year"
  )
8 # create base plot
9 base_plot <- ggplot(data=CHES_
  subset, aes(x=vote, y=lrgen,
  color=as.factor(govt))) +
10 geom_point() + facet_wrap(vars(
  year)) +
11 labs(y="Left-right placement", x=
  "Vote share (%)", color="Part
  of government")
```



# CHES DATA: THEME\_MINIMAL()

- Fix grey background
- Deal with extra gridlines

```
1 base_plot +  
2   theme_minimal() +  
3   theme(panel.grid.minor =  
         element_blank())
```

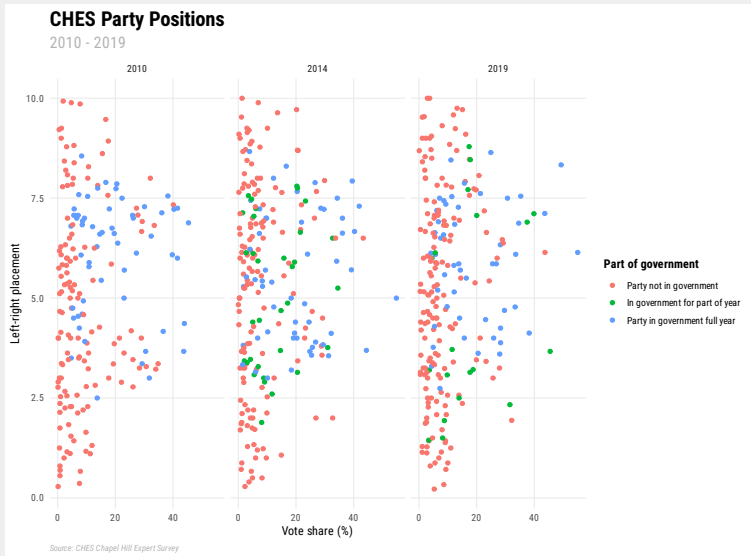


# CHES DATA: TITLES + CAPTIONS

- Adjust only title, sub-title, and caption
- Use **Roboto Condensed font** as the base font
  - Will need to install this font and use `library(extrafont)` to make this work if you want to follow along

```
1 base_plot <- base_plot +
2   labs(title = "CHES Party Positions",
3        subtitle = "2010 - 2019",
4        caption = "Source: CHES Chapel Hill Expert Survey") +
5   theme_minimal(base_family = "Roboto Condensed", base_size = 12) +
6   theme(panel.grid.minor = element_blank(),
7         # Bold, bigger title
8         plot.title = element_text(face = "bold", size = rel(1.7)),
9         # Plain, slightly bigger subtitle that is grey
10        plot.subtitle = element_text(face = "plain", size = rel(1.3), color = "grey70"),
11        # Italic, smaller, grey caption that is left-aligned
12        plot.caption = element_text(face = "italic", size = rel(0.7), color = "grey70",
13                                     hjust = 0),
14        # Bold legend titles
15        legend.title = element_text(face = "bold"))
```

# CHES DATA: TITLES + CAPTIONS

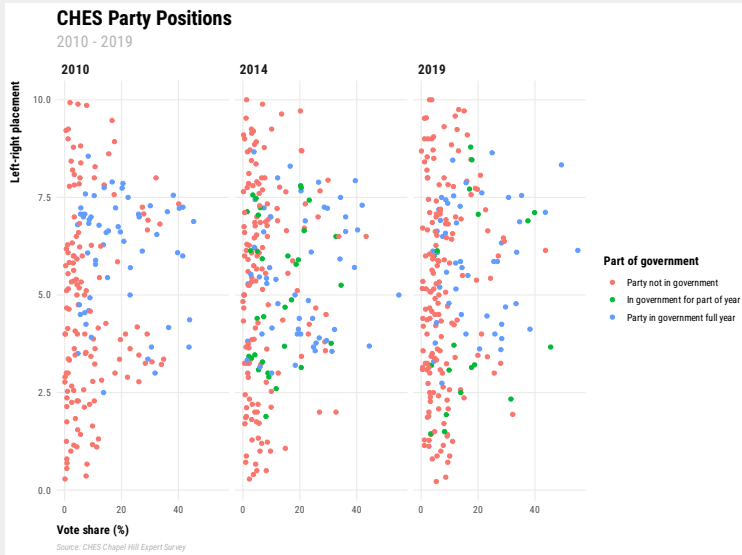


# CHES DATA: AXES

## ■ Now let's fix up the axis titles and labels

```
1 base_plot <- base_plot + theme(  
2   # Bold, slightly larger facet titles that are left-aligned for the sake of repetition  
3   strip.text = element_text(face = "bold", size = rel(1.1), hjust = 0),  
4   # Bold axis titles  
5   axis.title = element_text(face = "bold"),  
6   # Add some space above the x-axis title and make it left-aligned  
7   axis.title.x = element_text(margin = margin(t = 10), hjust = 0),  
8   # Add some space to the right of the y-axis title and make it top-aligned  
9   axis.title.y = element_text(margin = margin(r = 10), hjust = 1))
```

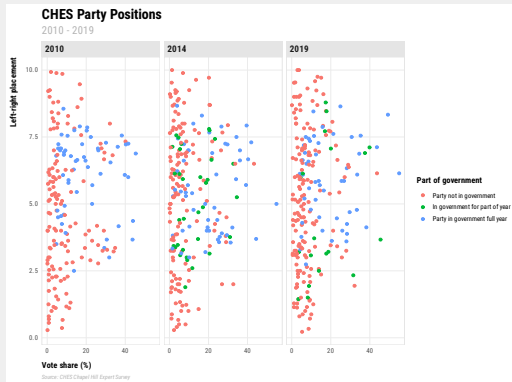
# CHES DATA: AXES



# CHES DATA: FACETS

## ■ Last, let's fix the facets

```
1 # Add a light grey background to  
  the facet titles, with no  
  borders  
2 base_plot <- base_plot + theme(  
  strip.background = element_  
    rect(fill = "grey90", color =  
      NA),  
3  # Add a thin grey border  
  around all the plots to tie in  
  the facet titles  
4  panel.border = element_rect(  
    color = "grey90", fill = NA))
```



# SAVING A THEME TEMPLATE

Now we can save this as a theme template for any other plot we want to produce

```
1 my_pretty_theme <- theme_minimal(base_family = "Roboto Condensed", base_size = 12) +
2   theme(panel.grid.minor = element_blank(),
3         # Bold, bigger title
4         plot.title = element_text(face = "bold", size = rel(1.7)),
5         # Plain, slightly bigger subtitle that is grey
6         plot.subtitle = element_text(face = "plain", size = rel(1.3), color = "grey70"),
7         # Italic, smaller, grey caption that is left-aligned
8         plot.caption = element_text(face = "italic", size = rel(0.7),
9                                     color = "grey70", hjust = 0),
10        # Bold legend titles
11        legend.title = element_text(face = "bold"),
12        # Bold, slightly larger facet titles that are left-aligned for the sake of
13        repetition
14        strip.text = element_text(face = "bold", size = rel(1.1), hjust = 0),
15        # Bold axis titles
16        axis.title = element_text(face = "bold"),
17        # Add some space above the x-axis title and make it left-aligned
18        axis.title.x = element_text(margin = margin(t = 10), hjust = 0),
19        # Add some space to the right of the y-axis title and make it top-aligned
20        axis.title.y = element_text(margin = margin(r = 10), hjust = 1),
21        # Add a light grey background to the facet titles, with no borders
22        strip.background = element_rect(fill = "grey90", color = NA),
23        # Add a thin grey border around all the plots to tie in the facet titles
24        panel.border = element_rect(color = "grey90", fill = NA))
```

# CHES DATA: PARTY FAMILY VOTE SHARE

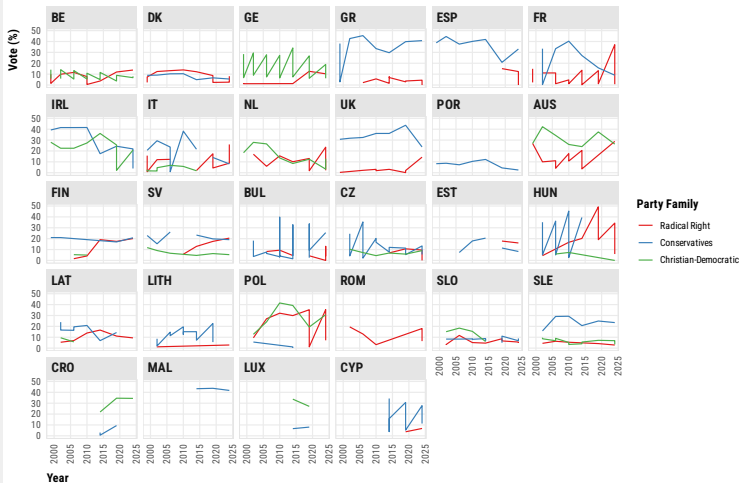
Let's now plot the vote share % that Conservative parties received in elections from 2000-2025 in each country

```
1 # subset to only Conservative parties
2 CHES_family <- CHES |> filter(family==1 | family==2 | family==4)
3 # change level labels for party family variable
4 CHES_family$family <- as.factor(CHES_family$family)
5 levels(CHES_family$family) <- c("Radical Right", "Conservatives", "Christian-Democratic")
6 CHES_family$country_name <- as.factor(CHES_family$country)
7 levels(CHES_family$country_name) <- c("BE", "DK", "GE", "GR", "ESP", "FR", "IRL", "IT", "
  NL", "UK", "POR", "AUS", "FIN", "SV", "BUL", "CZ", "EST", "HUN", "LAT", "LITH", "
  POL", "ROM", "SLO", "SLE", "CRO", "MAL", "LUX", "CYP")
8
9 family_plot <- ggplot(data = CHES_family, aes(x = year, y = vote, color = family)) +
10   geom_line() +
11   facet_wrap(vars(country_name)) +
12   scale_colour_brewer(palette = "Set1") +
13   labs(x = "Year", y = "Vote (%)", color = "Party Family",
14        title = "Percent of vote received by Conservative parties",
15        subtitle = "Elections from 2000-2025",
16        caption = "Source: CHES Chapel Hill Expert Survey") +
17   my_pretty_theme +
18   theme(axis.text.x = element_text(angle = 90, vjust = 0.5, hjust=1))
```

# CHES DATA: PARTY FAMILY VOTE SHARE

## Percent of vote received by Conservative parties

Elections from 2000-2025



# WRAP UP

- Theme adjustment
- Annotations

# CLASS BUSINESS

- Read required (and suggested) online materials
- Problem set #3 is up on GitHub