Comparisons

Session 8

PMAP 8921: Data Visualization with R
Andrew Young School of Policy Studies
Summer 2025

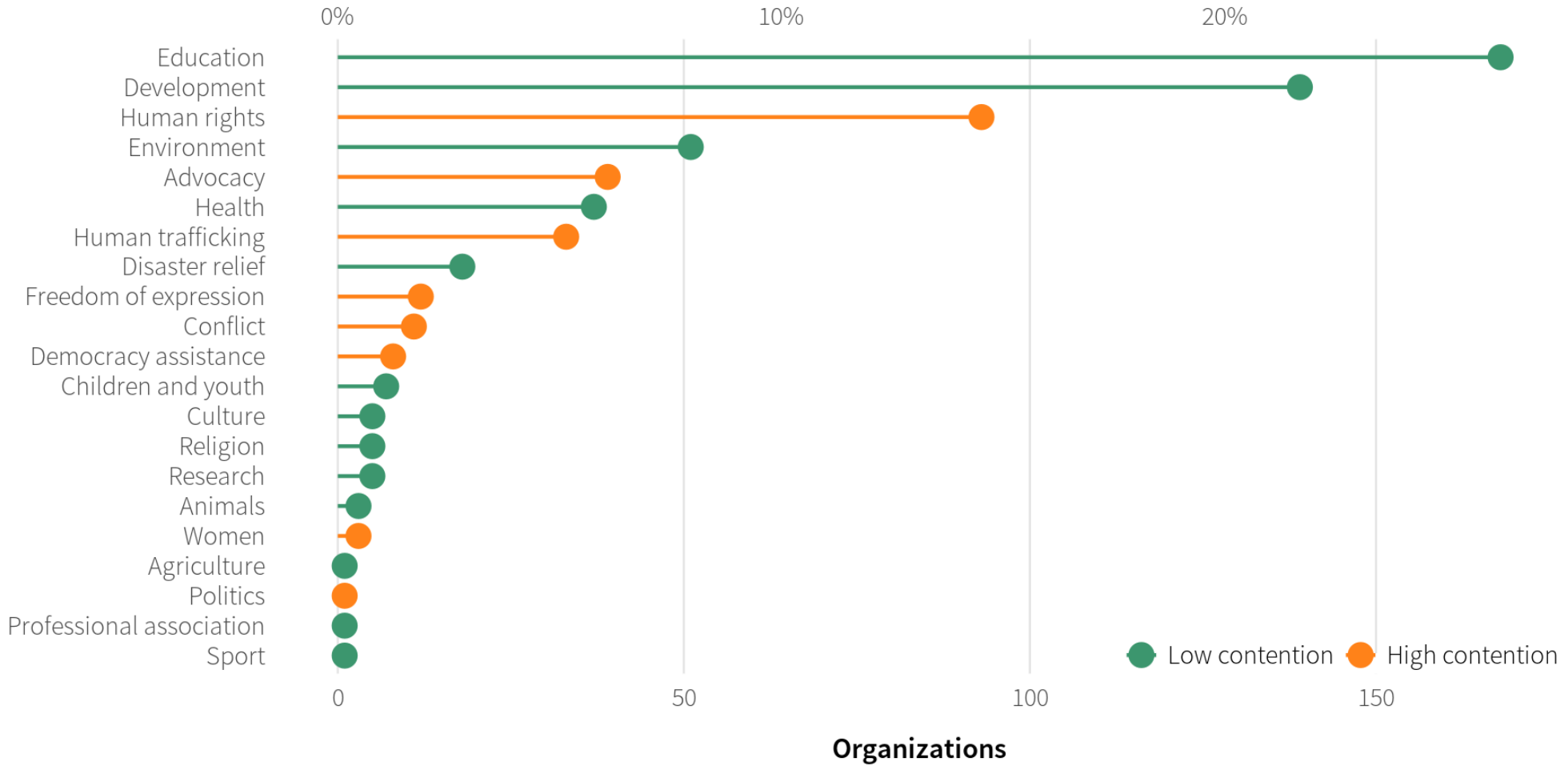
Plan for today

Visualizing comparisons

Reproducible examples

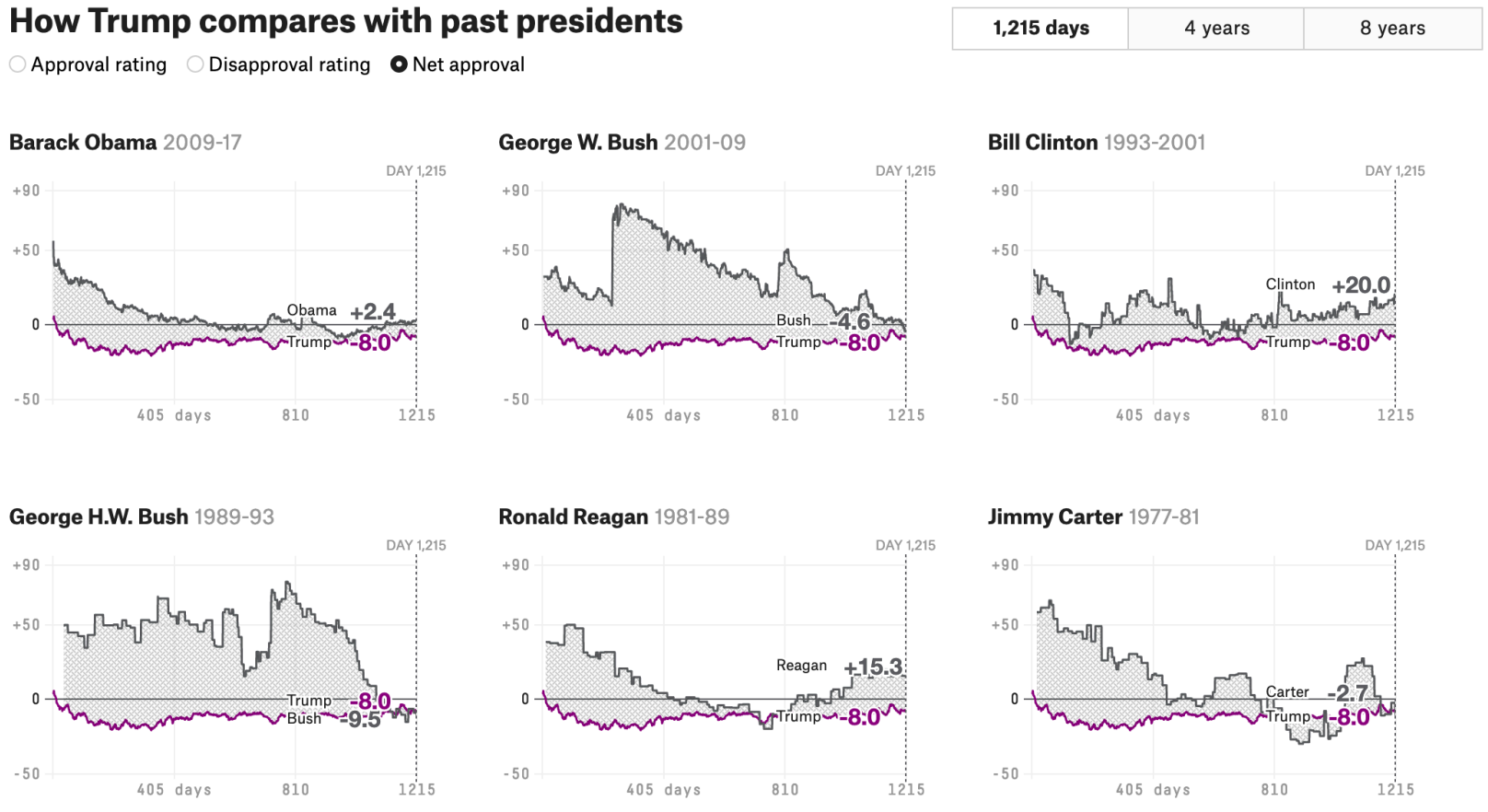
Visualizing comparisons

Lollipops and bars



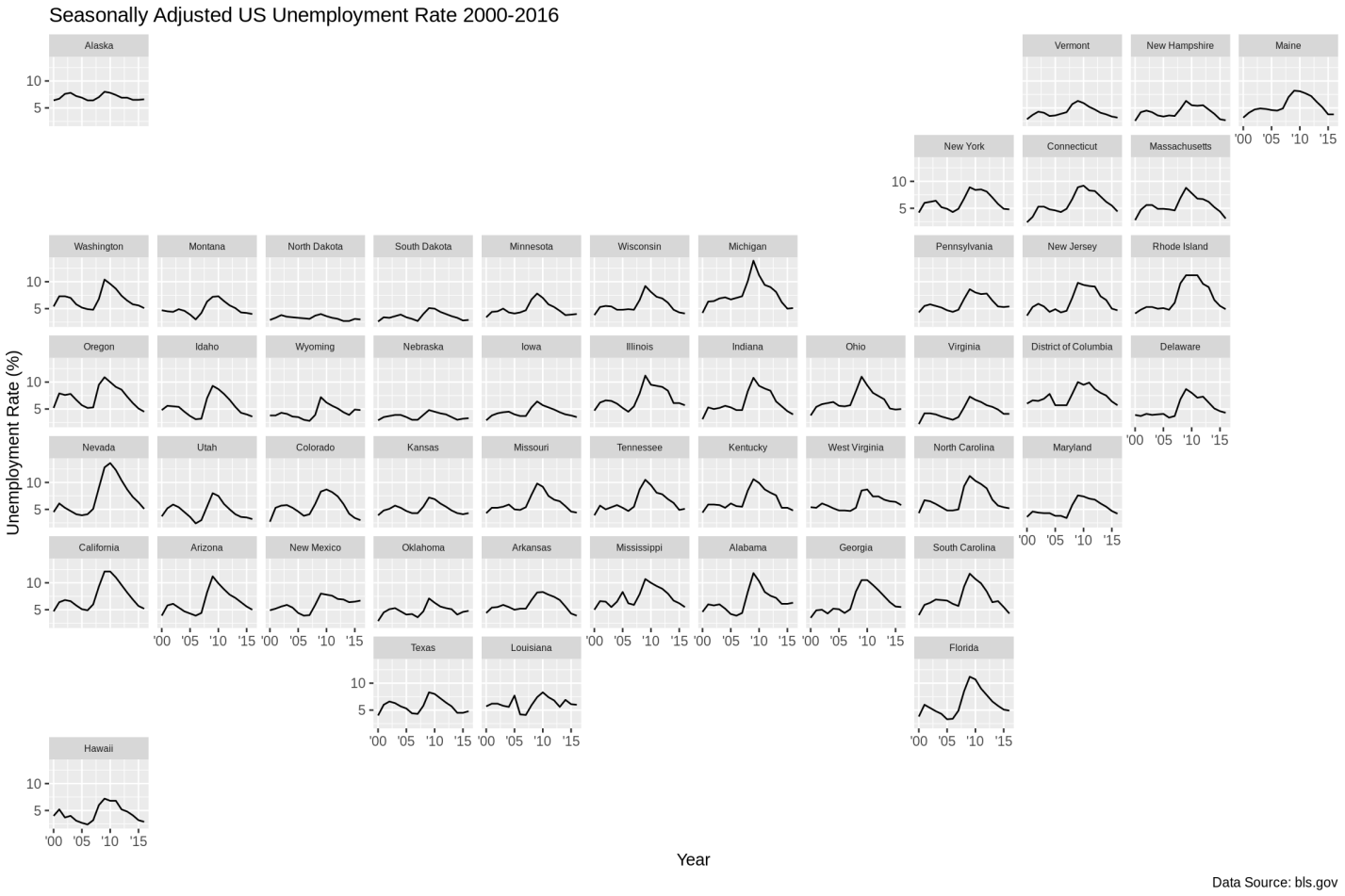

African Republic
Islands
d'Ivoire
Croatia
Cuba
Cyprus
Czech Republic
Democratic People's Repulic of Korea
Democratic Republic of the Congo
Denmark
Djibouti
Dominica
Dominican Republic
Ecuador
Egypt
El Salvador
Equatorial Guinea
Eritrea
Estonia
Ethiopia
Fiji
Finland
France
Gabon
Gambia
Georgia
Germany
Ghana
Greece
Grenada
Guatemala
Guinea
Guinea-Bissau
Guyana
Haiti
Honduras
Hungary
Iceland
India
Indonesia
Iran
Iraq
Ireland
Israel
Italy
Jamaica
Japan
Jordan
Kazakhstan
Kenya
Kiribati
Kuwait
Kyrgyzstan
Lao People's Democratic Republic
Latvia
Lebanon
Lesotho
Liberia
Libya
Lithuania
Luxembourg
Madagascar
Malawi
Malaysia
Maldives
Mali
Malta
Marshall Islands
Mauritania
Mauritius
Mexico
Micronesia
Monaco
Mongolia
Montenegro
Morocco
Mozambique
Myanmar
Namibia
Nauru
Nepal
Netherlands
New Zealand
Nicaragua
Niger
Nigeria
Niue
Norway
Oman
Pakistan
Palau
Panama
Papua New Guinea
Paraguay
Peru
Philippines
Poland
Portugal
Qatar
Republic of Korea
Republic of Moldova
Romania
Russian Federation
Rwanda
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines
Samoa
San Marino
Sao Tome and Principe
Saudi Arabia
Senegal
Serbia
Seychelles
Sierra Leone

Small multiples



FiveThirtyEight, Trump approval ratings

Small multiples with larger shapes



`facet_geo()` in the **geofacet** package

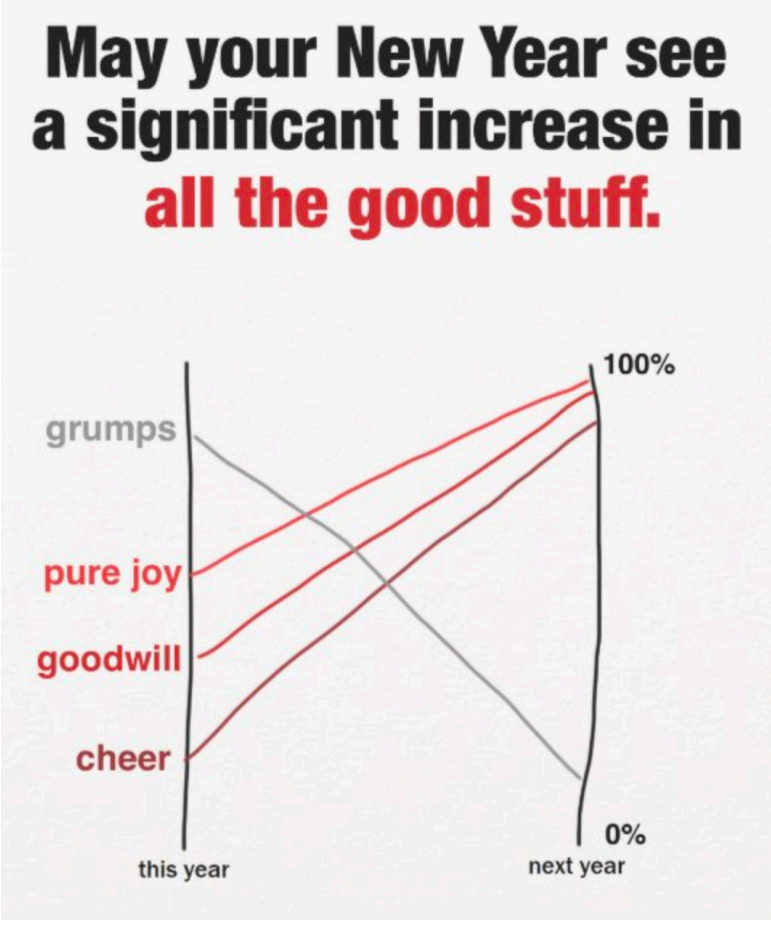
Sparklines

Mauricio Pochettino has lead Spurs on their best run 8TH  2ND in 24 years of the Premier League

Alibaba stock is at 5 yr high 93.89  152.11 as of July 2017

The FTSE100 Brexit bounce 5562  7501 continues one year on from the vote last summer

Slopegraphs

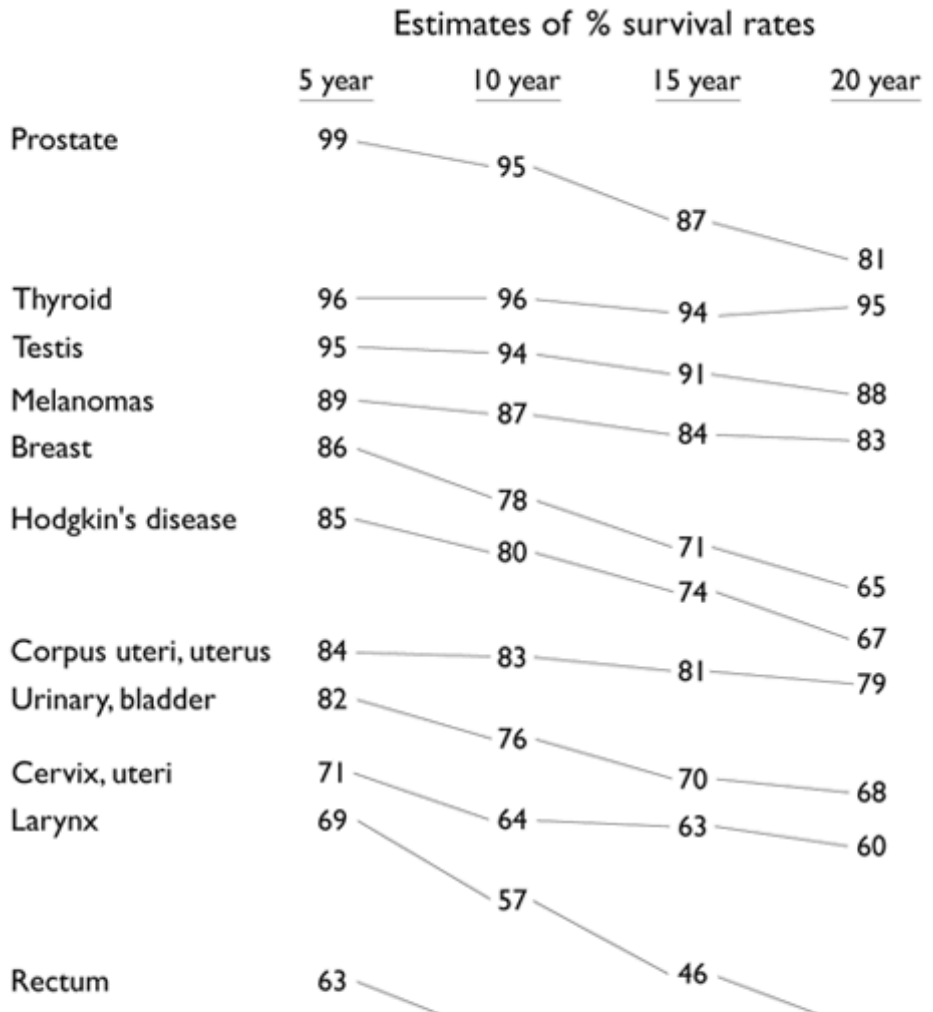


Slopegraphs

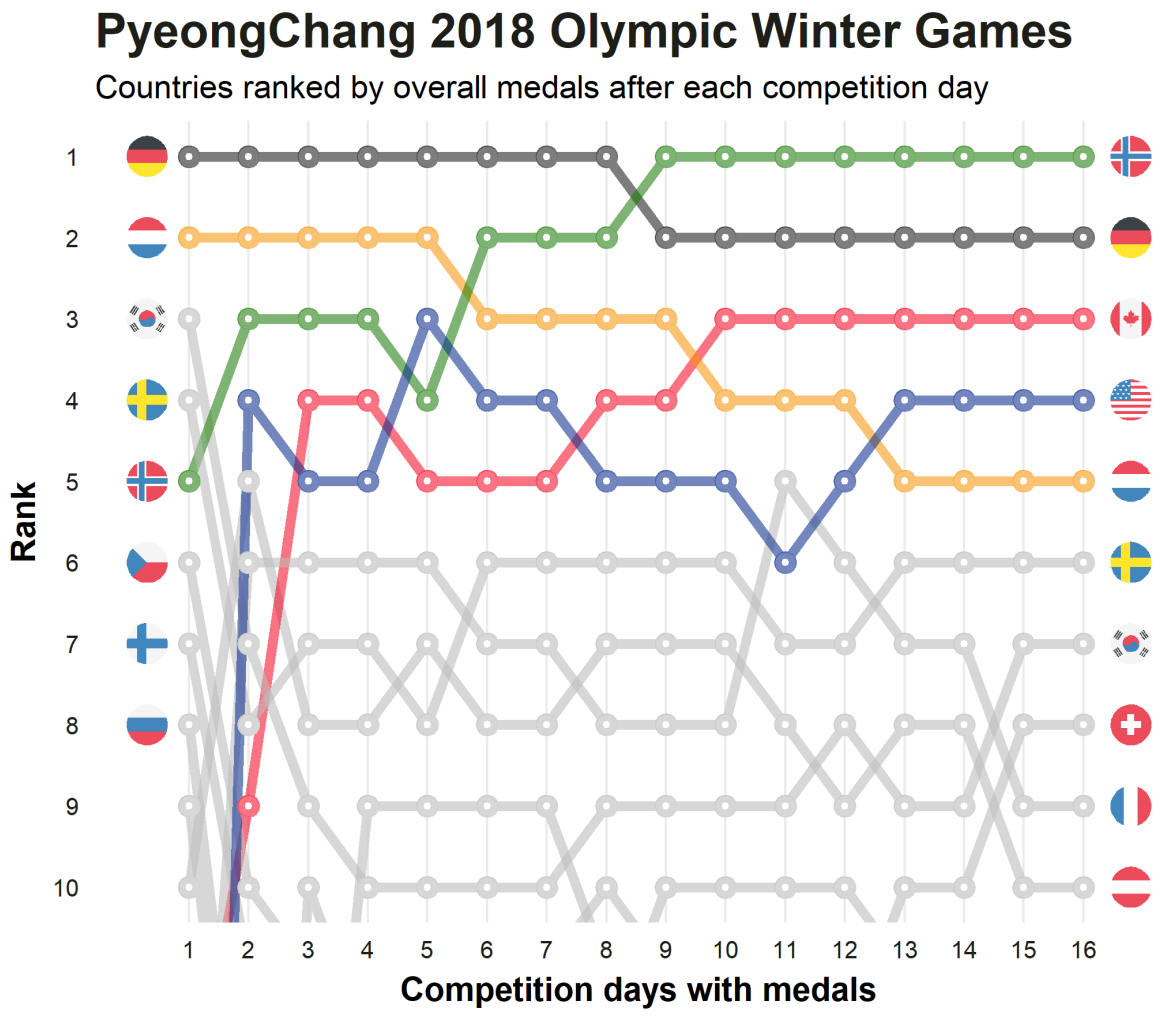
Slopegraphs

Estimates of relative survival rates, by cancer site

	% survival rates and their standard errors							
	5 year		10 year		15 year		20 year	
Prostate	98.8	0.4	95.2	0.9	87.1	1.7	81.1	3.0
Thyroid	96.0	0.8	95.8	1.2	94.0	1.6	95.4	2.1
Testis	94.7	1.1	94.0	1.3	91.1	1.8	88.2	2.3
Melanomas	89.0	0.8	86.7	1.1	83.5	1.5	82.8	1.9
Breast	86.4	0.4	78.3	0.6	71.3	0.7	65.0	1.0
Hodgkin's disease	85.1	1.7	79.8	2.0	73.8	2.4	67.1	2.8
Corpus uteri, uterus	84.3	1.0	83.2	1.3	80.8	1.7	79.2	2.0
Urinary, bladder	82.1	1.0	76.2	1.4	70.3	1.9	67.9	2.4
Cervix, uteri	70.5	1.6	64.1	1.8	62.8	2.1	60.0	2.4
Larynx	68.8	2.1	56.7	2.5	45.8	2.8	37.8	3.1
Rectum	62.6	1.2	55.2	1.4	51.8	1.8	49.2	2.3
Kidney, renal pelvis	61.8	1.3	54.4	1.6	49.8	2.0	47.3	2.6
Colon	61.7	0.8	55.4	1.0	53.9	1.2	52.3	1.6
Non-Hodgkin's	57.8	1.0	46.3	1.2	38.3	1.4	34.3	1.7
Oral cavity, pharynx	56.7	1.3	44.2	1.4	37.5	1.6	33.0	1.8
Ovary	55.0	1.3	49.3	1.6	49.9	1.9	49.6	2.4
Leukemia	42.5	1.2	32.4	1.3	29.7	1.5	26.2	1.7
Brain, nervous system	32.0	1.4	29.2	1.5	27.6	1.6	26.1	1.9



Bump charts


PyeongChang 2018 Olympic Winter Games
Countries ranked by overall medals after each competition day
Rank
1
2
3
4
5
6
7
8
9
10
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Competition days with medals

Reproducible examples

This is 100% normal!

Brandon Rohrer
@_brohrer_

I was just asked whether I ever have to look things up when I code. I want to go on record saying that, aside from canned white board coding examples, I can't write two lines of code without referring to Google or stack overflow. I would be lost without them.

3:57 PM · Oct 8, 2018 · Twitter for iPhone

298 Retweets **1.5K** Likes

52 298 1.5K

Broken cake

Help! My cake broke!

vs.

Help! I followed these 6 steps and my cake broke!

Same principle applies to code

Reprexes

Reproducible examples

Something anyone can run on their computer to reproduce the problem you're facing

Debugging and reprexes

Simplify your code down to something very basic

Add additional things until stuff breaks

Use a subset of your data or invent fake data

Restart your session and see if it runs in a new session

Ask the internet for help using your toy example

75% of the time you'll find what's wrong as you make the reprex!

Making datasets with `tribble()`

```
my_data <- tribble(
  ~animal, ~number,
  "cat", 5,
  "dog", 4,
  "bear", 7,
  "bison", 1
)
```

.pull-right[

```
my_data
```

```
##  [38;5;246m# A tibble: 4 × 2 [39m
##    animal number
##    [3m [38;5;246m<chr> [39m [23m
##  [38;5;250m1 [39m cat          5
##  [38;5;250m2 [39m dog          4
##  [38;5;250m3 [39m bear         7
##  [38;5;250m4 [39m bison        1
```

Example reprex

```r
my_data <- tribble(
  ~animal, ~number,
  "cat", 5,
  "dog", 4,
  "bear", 7,
  "bison", 1
)

# This plot has a fill legend, but I want to remove it because it's redundant
# What's the best way to get rid of the fill?
ggplot(fake_data, aes(x = animal, y = number, fill = animal)) +
  geom_col()
  # I add something here, but what?
```