

Color

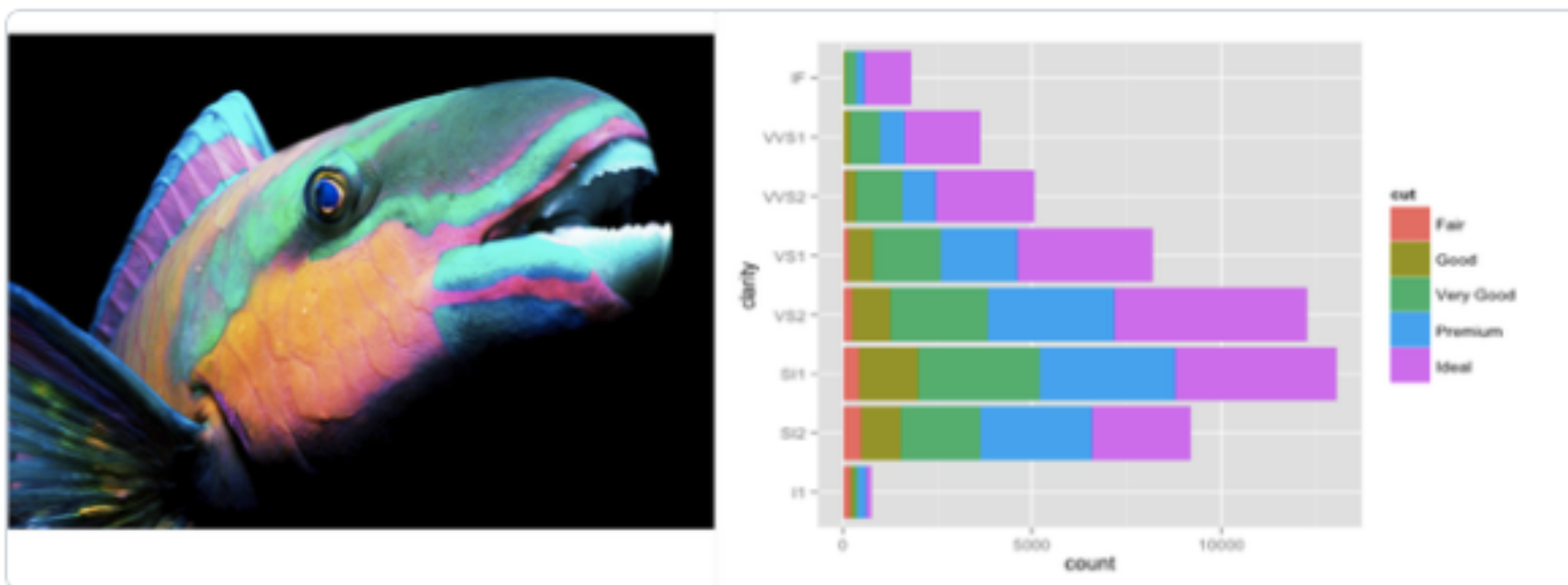
- 1. link between data and color palette**
- 2. color vision deficiency**
- 3. aesthetics**



Myfanwy
@Voovarb



guys. GUYS. I'm diving in Palau this week and I've found the
[#ggplot2](#) fish. [#rstats](#)

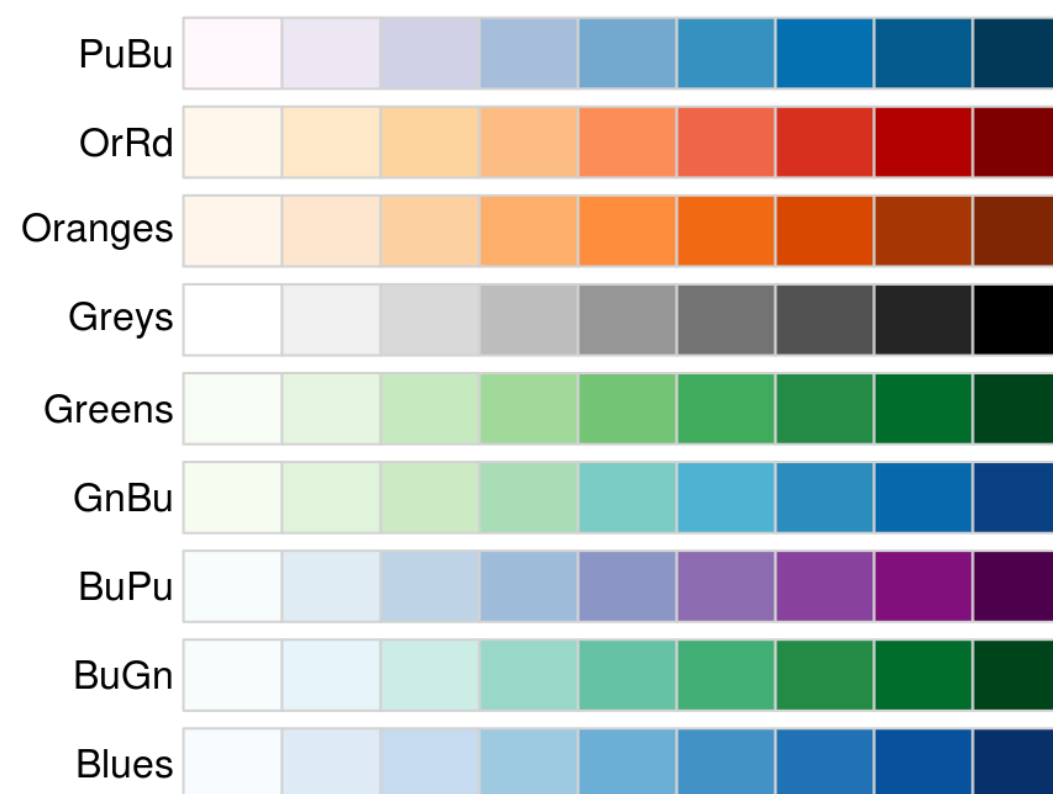
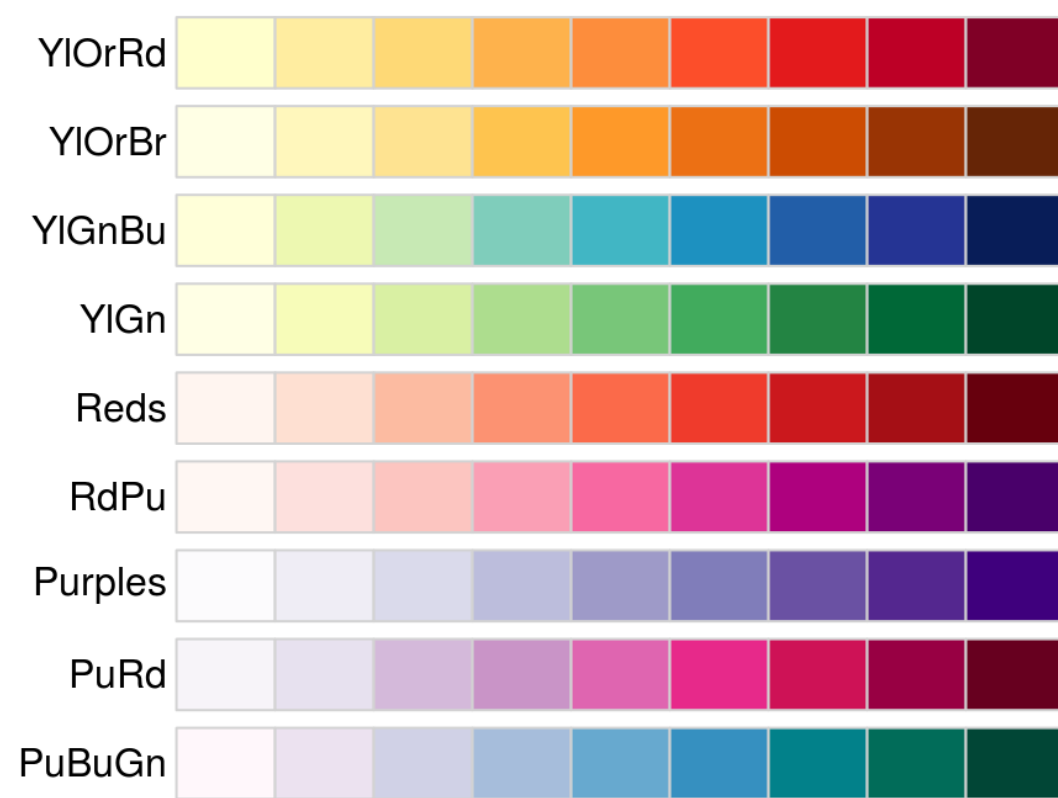


9:26 AM · Mar 25, 2015

112 RETWEETS **237** LIKES

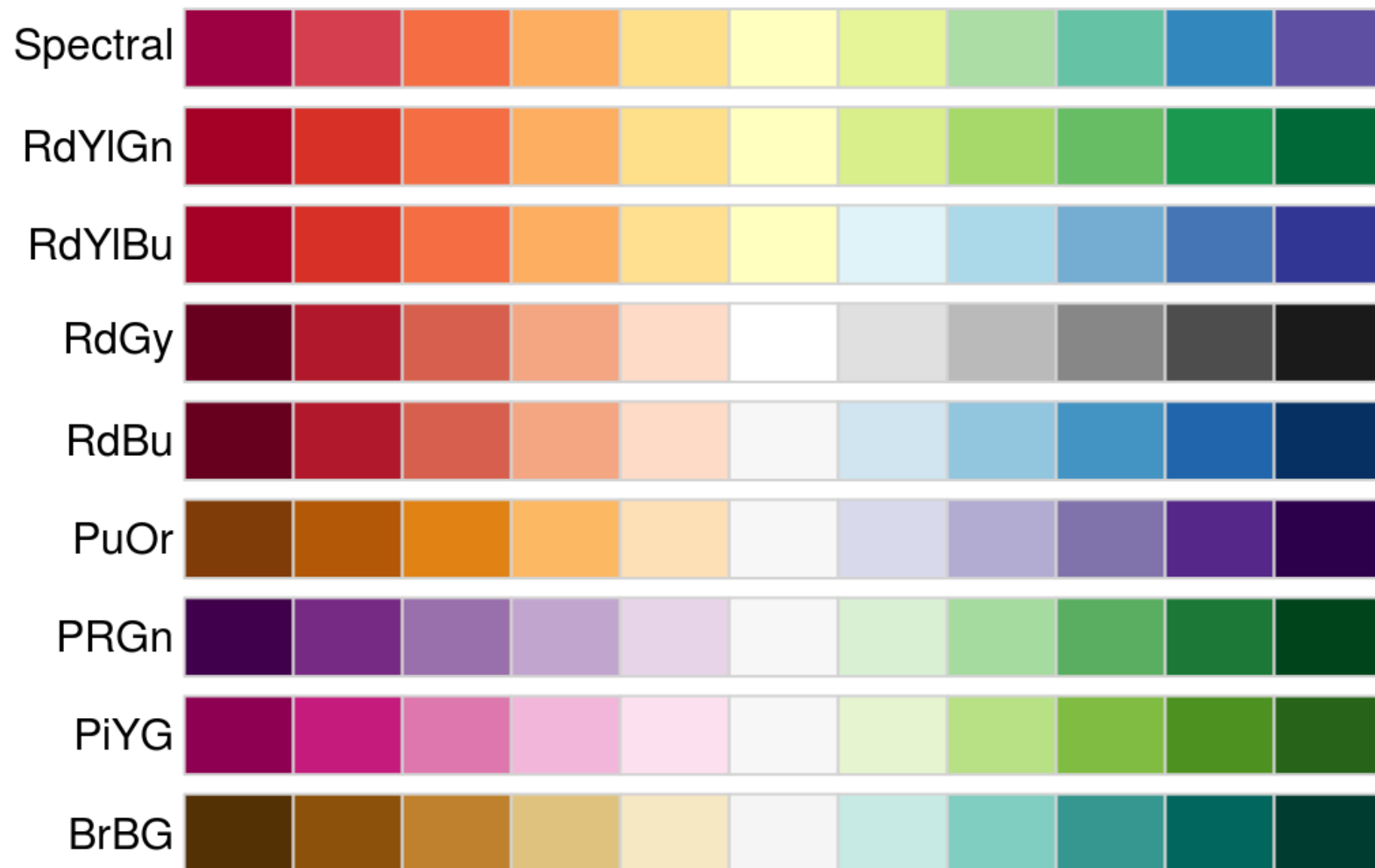
RColorBrewer Color Schemes

sequential

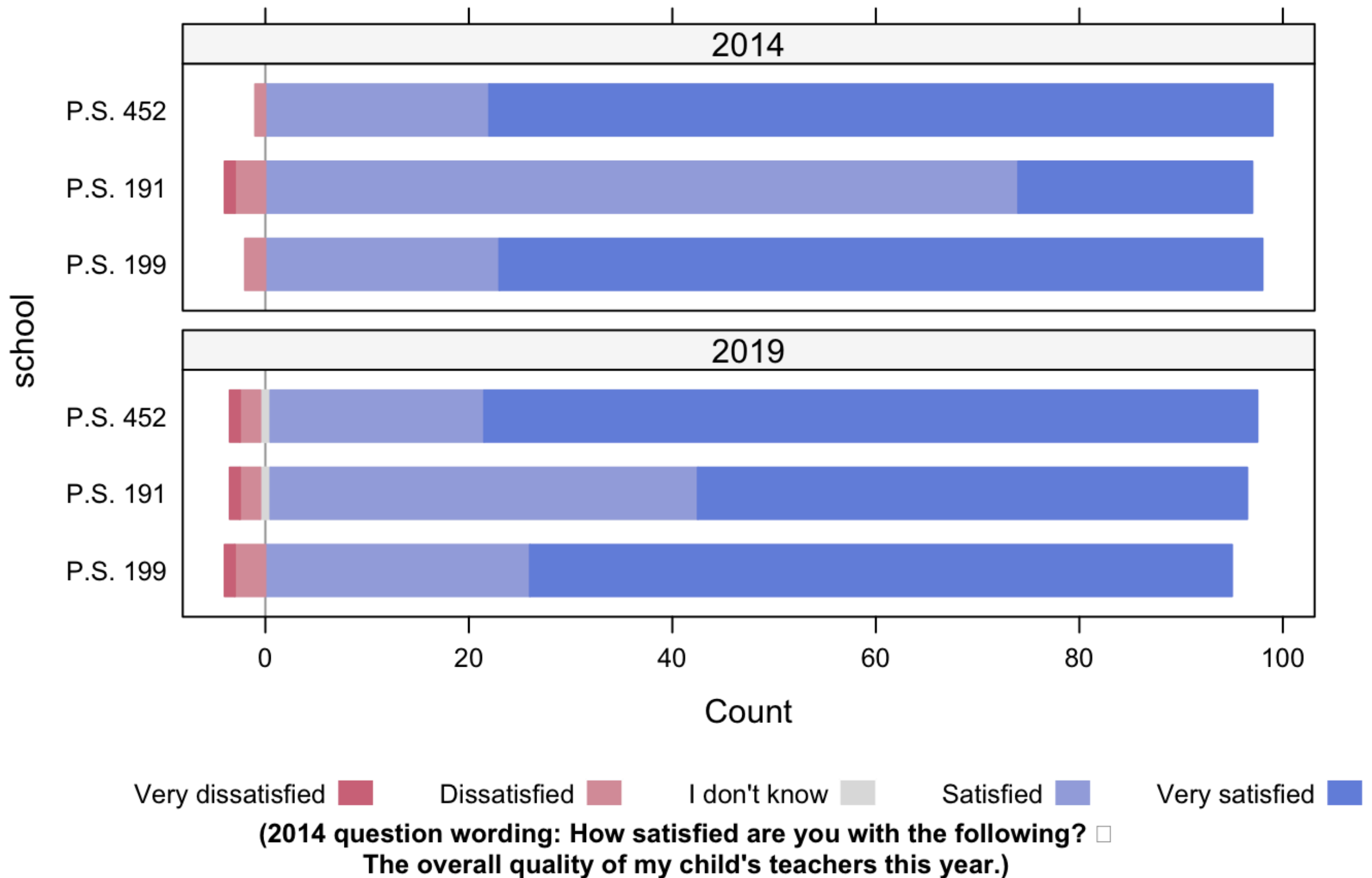


RColorBrewer Color Schemes

diverging



The overall quality of my child's teachers this year.

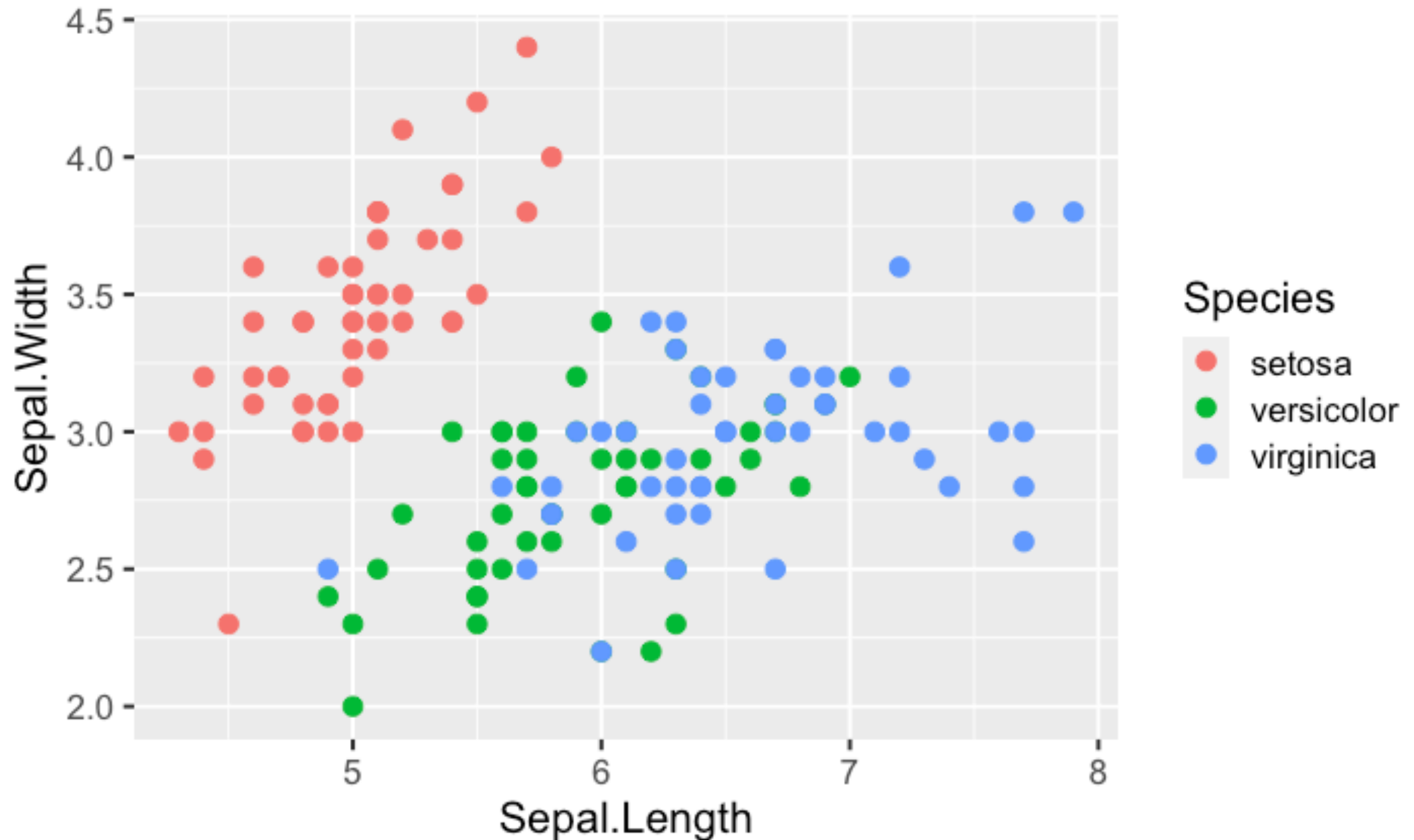


RColorBrewer Color Schemes

qualitative (for categorical data)



qualitative (for categorical data)



Continuous data

OR:

`_fill_`

+ `scale_color_viridis_c()`

Rcolorbrewer

+ `scale_color_distiller(palette = "PuBu")`

reverse palette order with `direction = 1`

Continuous data

OR:

`_fill_`

Create your own sequential

```
+ scale_color_gradient(low = "white",  
                        high = "red")
```

Create your own diverging

```
+ scale_color_gradient2(low = "blue",  
                        mid = "white",  
                        high = "red")
```

Discrete data

OR: `_fill_`

+ `scale_color_viridis_d()`

Rcolorbrewer

+ `scale_color_brewer(palette = "PuBu")`

Discrete data

OR: `_fill_`

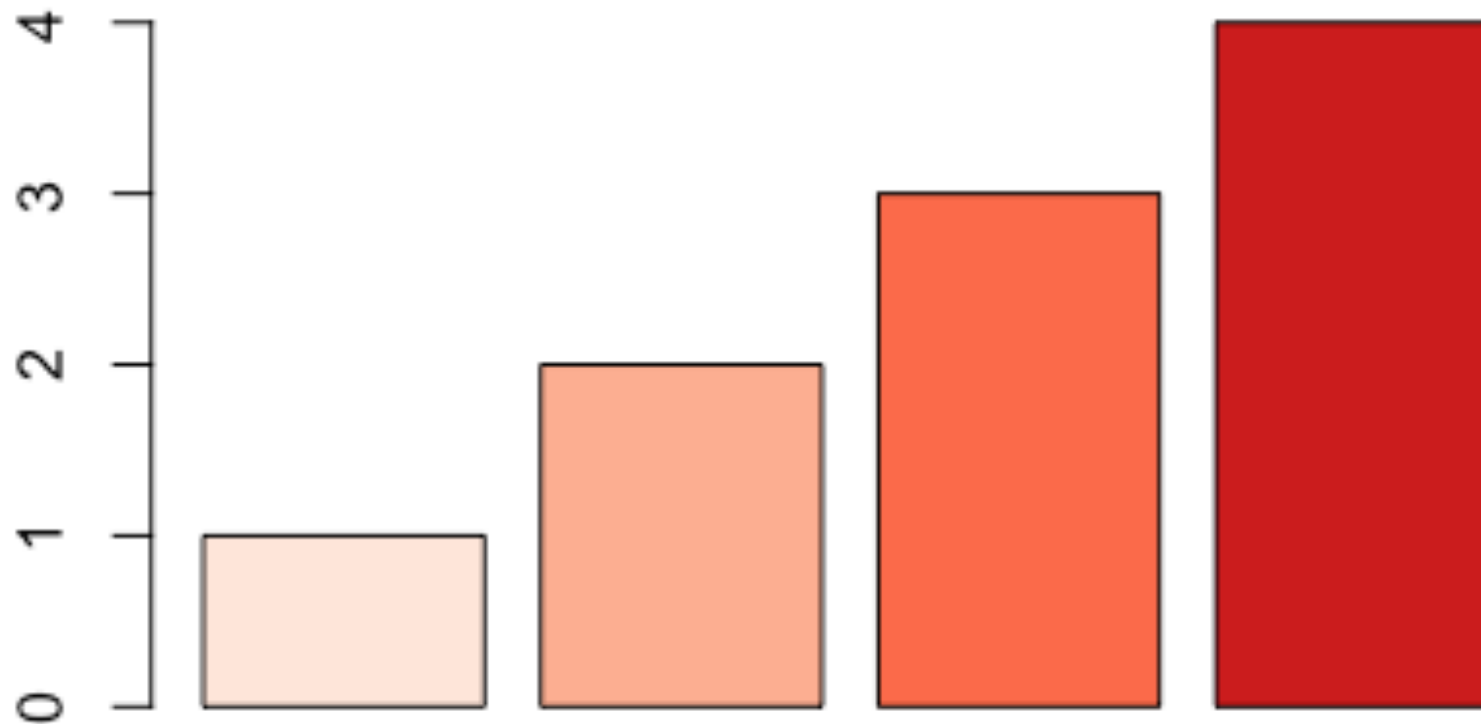
Create your own

```
+ scale_color_manual(values =  
  c("red", "yellow", "blue"))
```

Discrete ordinal data

To use with another package (such as **vcd**)

```
library(RColorBrewer)
colors <- brewer.pal(4, "Reds")
colors
#> [1] "#FEE5D9" "#FCAE91" "#FB6A4A" "#CB181D"
barplot(1:4, col = colors)
```



Color Vision Deficiency

approx. 8% of men, 0.5% of women have some form

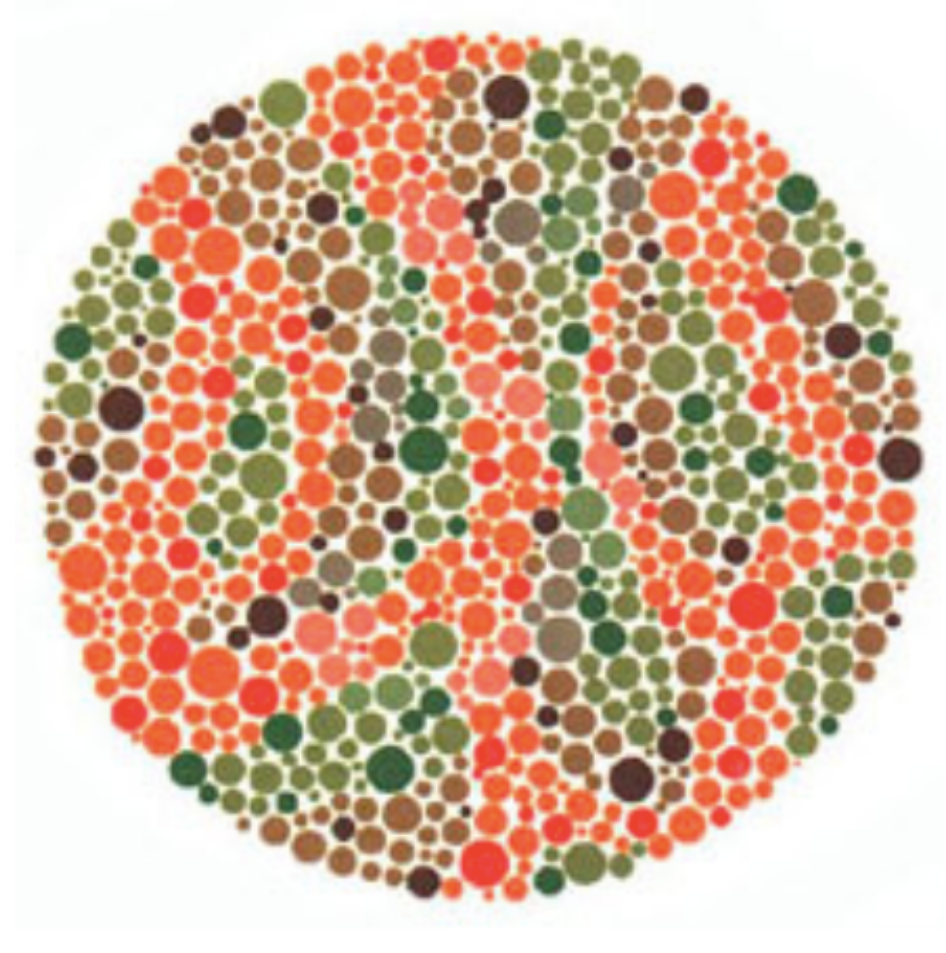
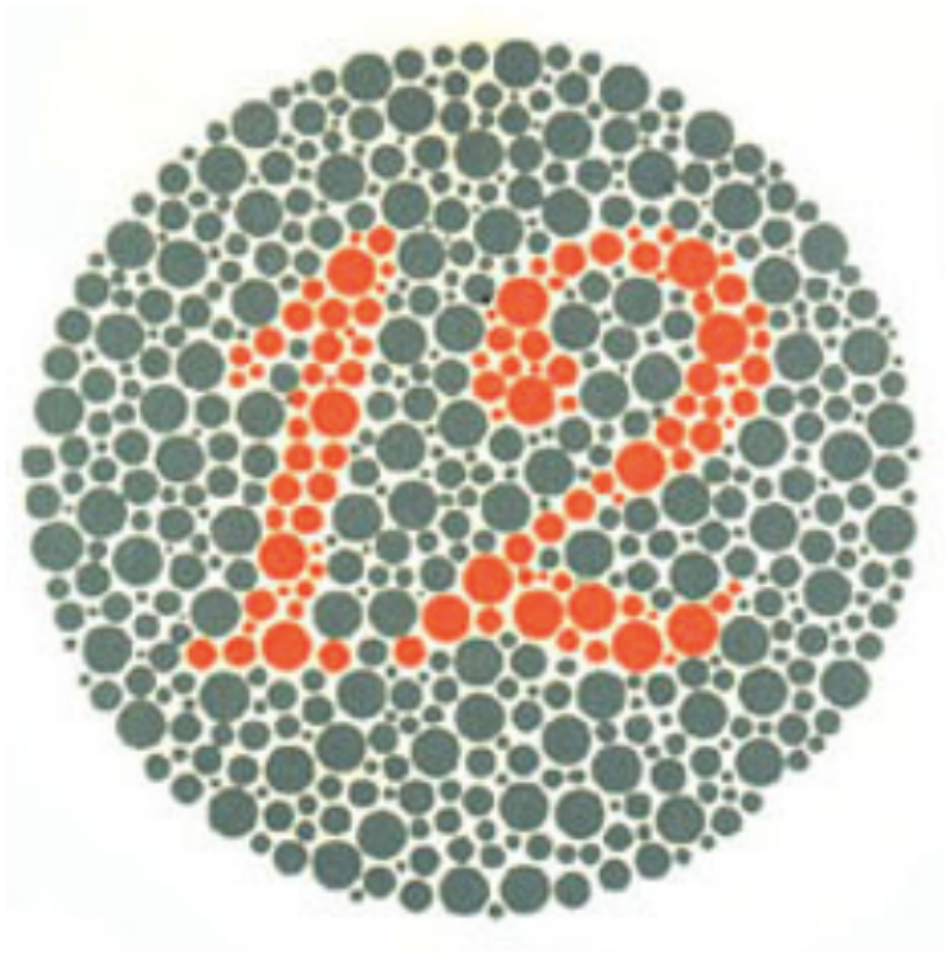
missing or deficient cones:

protanopia (red)

deuteranopia (green)

tritanopia (blue)

Ishihara Test



<http://unlimitedmemory.tripod.com/sitebuildercontent/sitebuilderfiles/ishihara38.pdf>

How to make CVD friendly graphs

Use palettes that have already been tested

ex. `viridis`, `scale_color_colorblind()`
(`ggthemes`)

Use a color vision deficiency simulator
such as Color Oracle

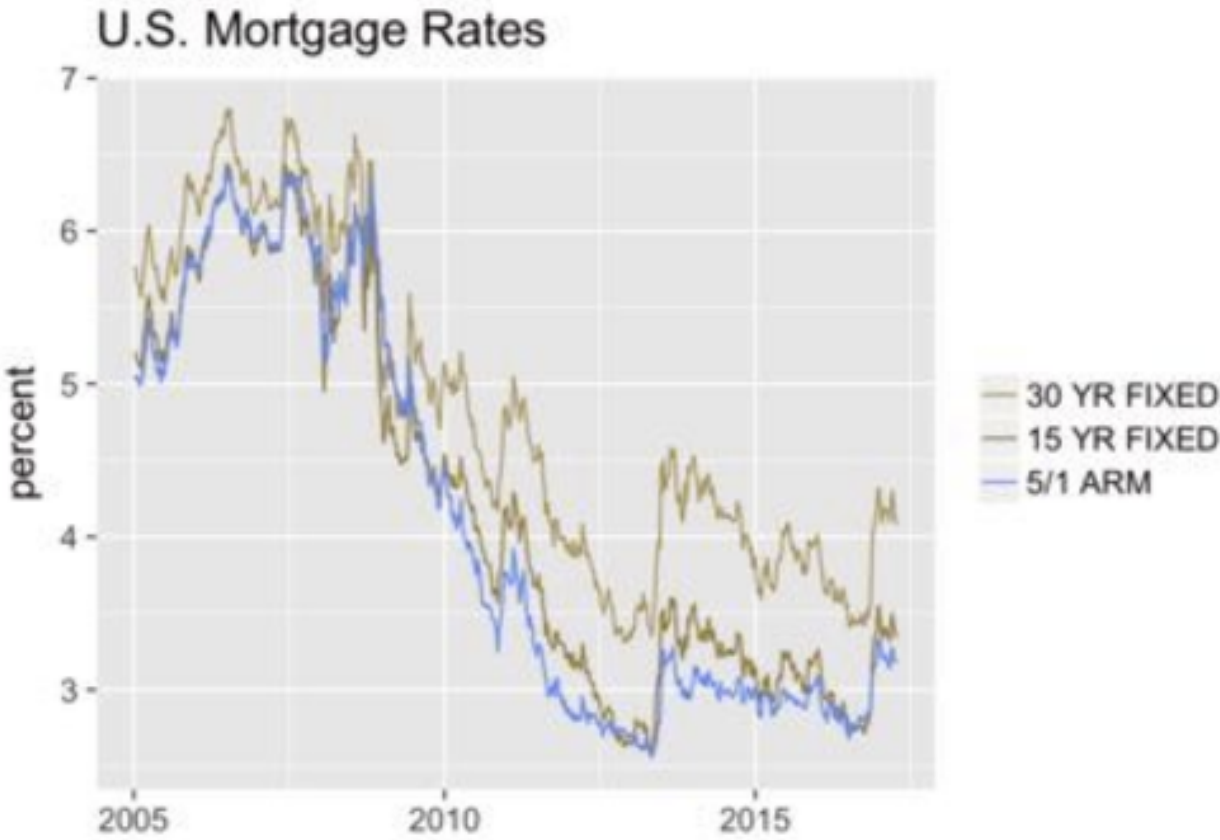
Use high contrast

Your Results:

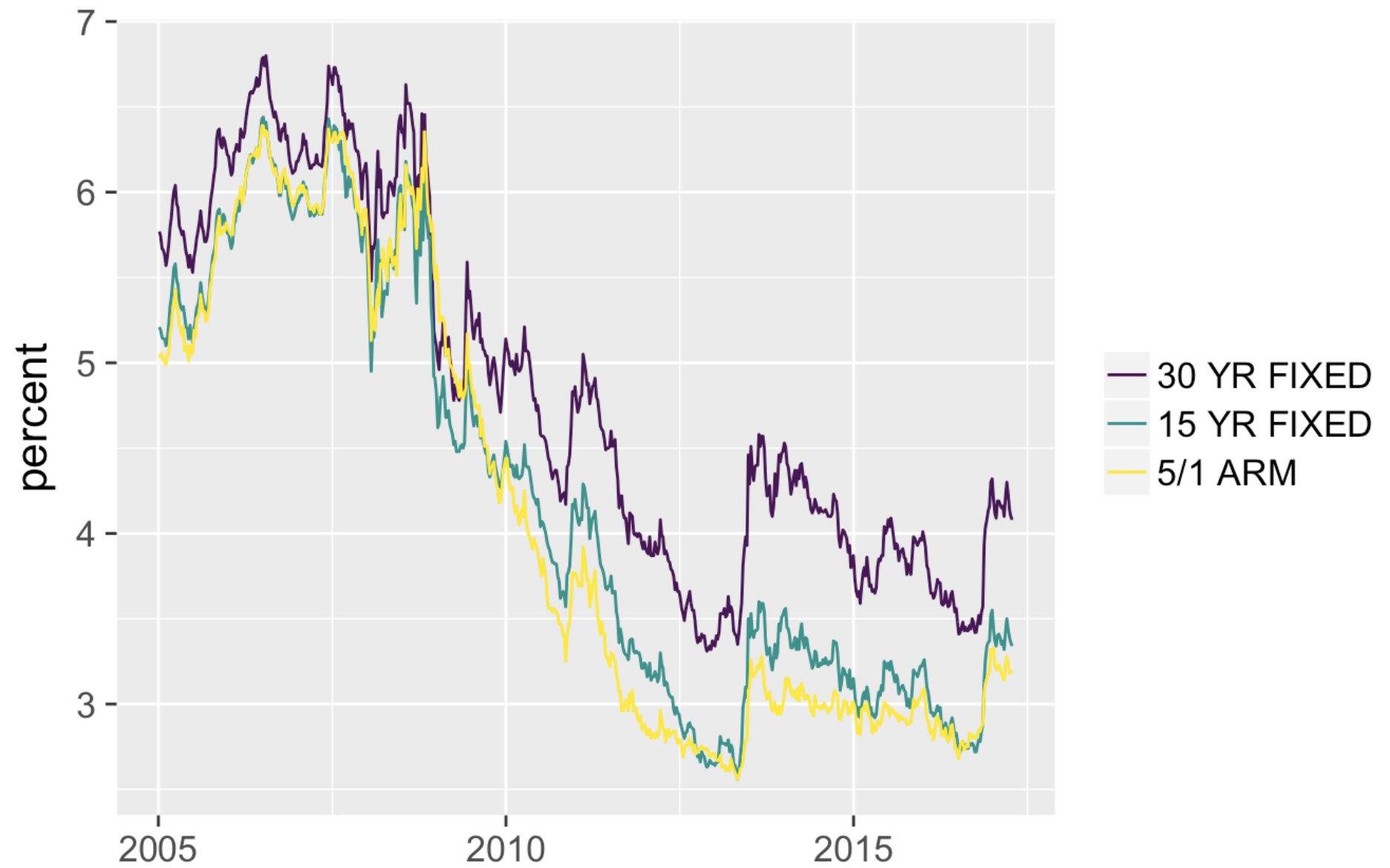
Original Image

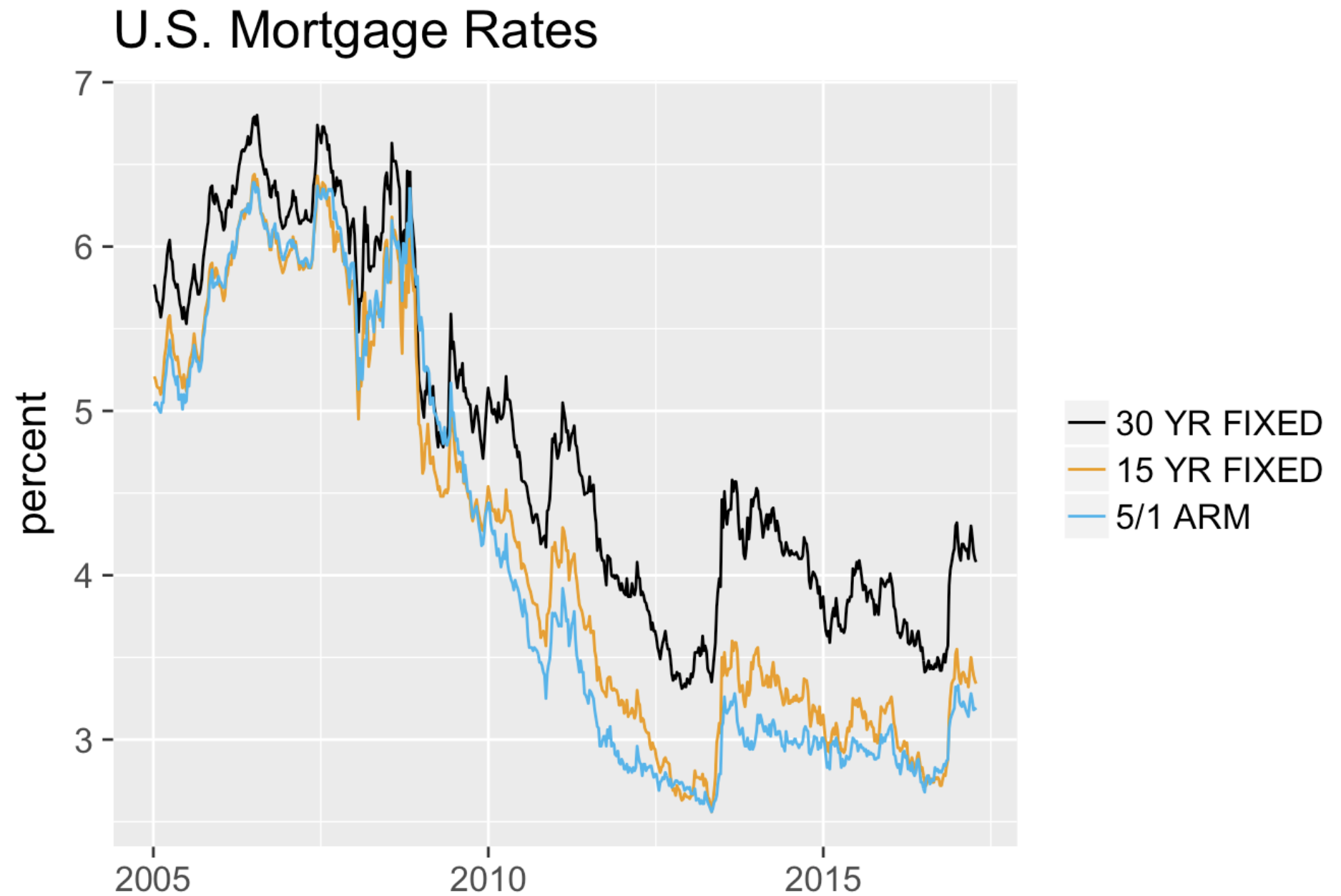


Deuteranope Simulation



U.S. Mortgage Rates



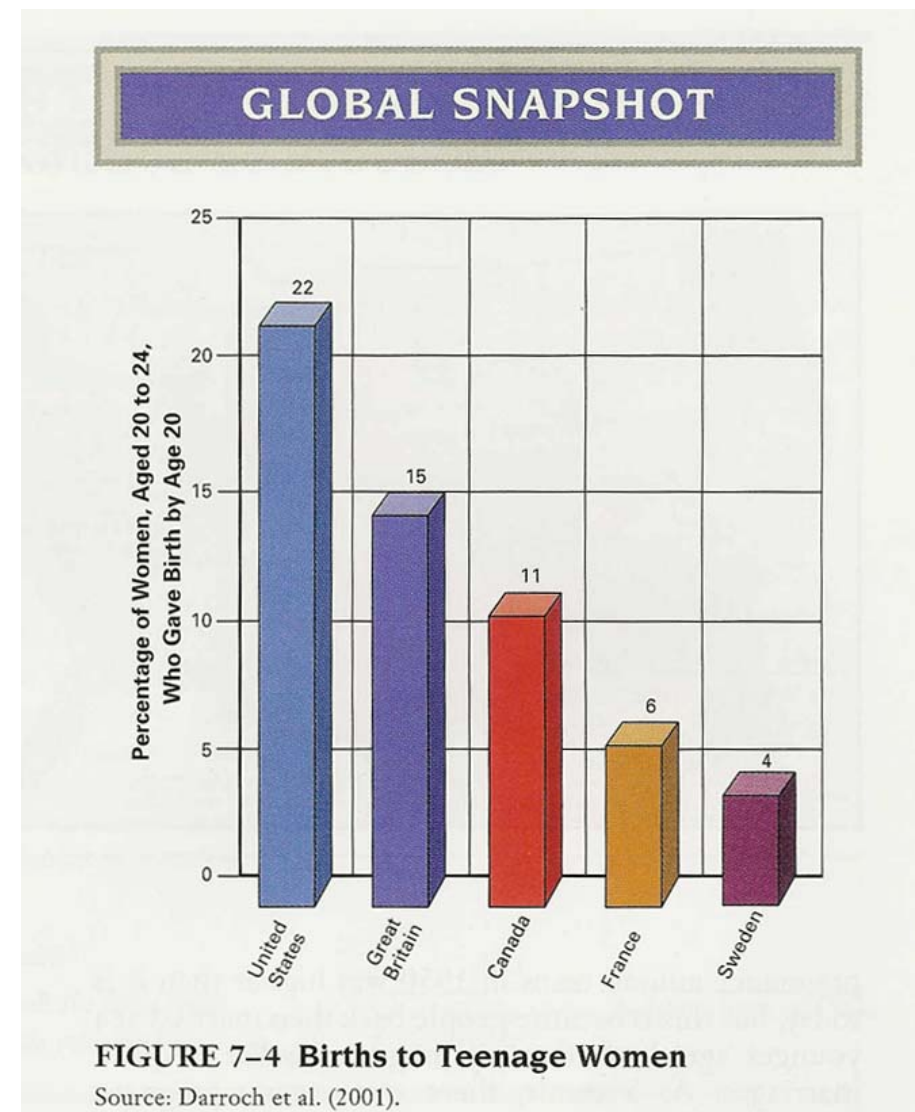
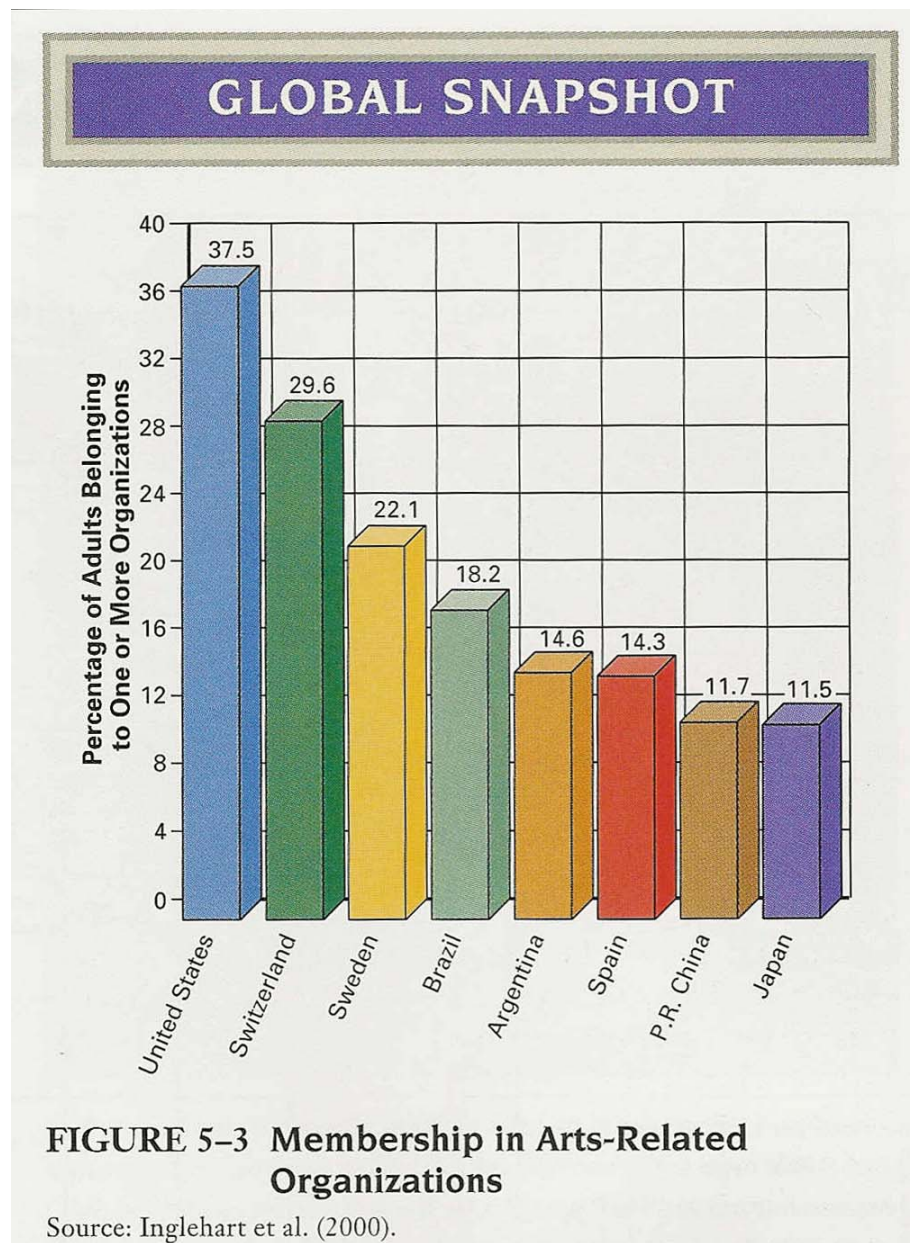


```
ggthemes: + scale_color_colorblind()
```

General color tips

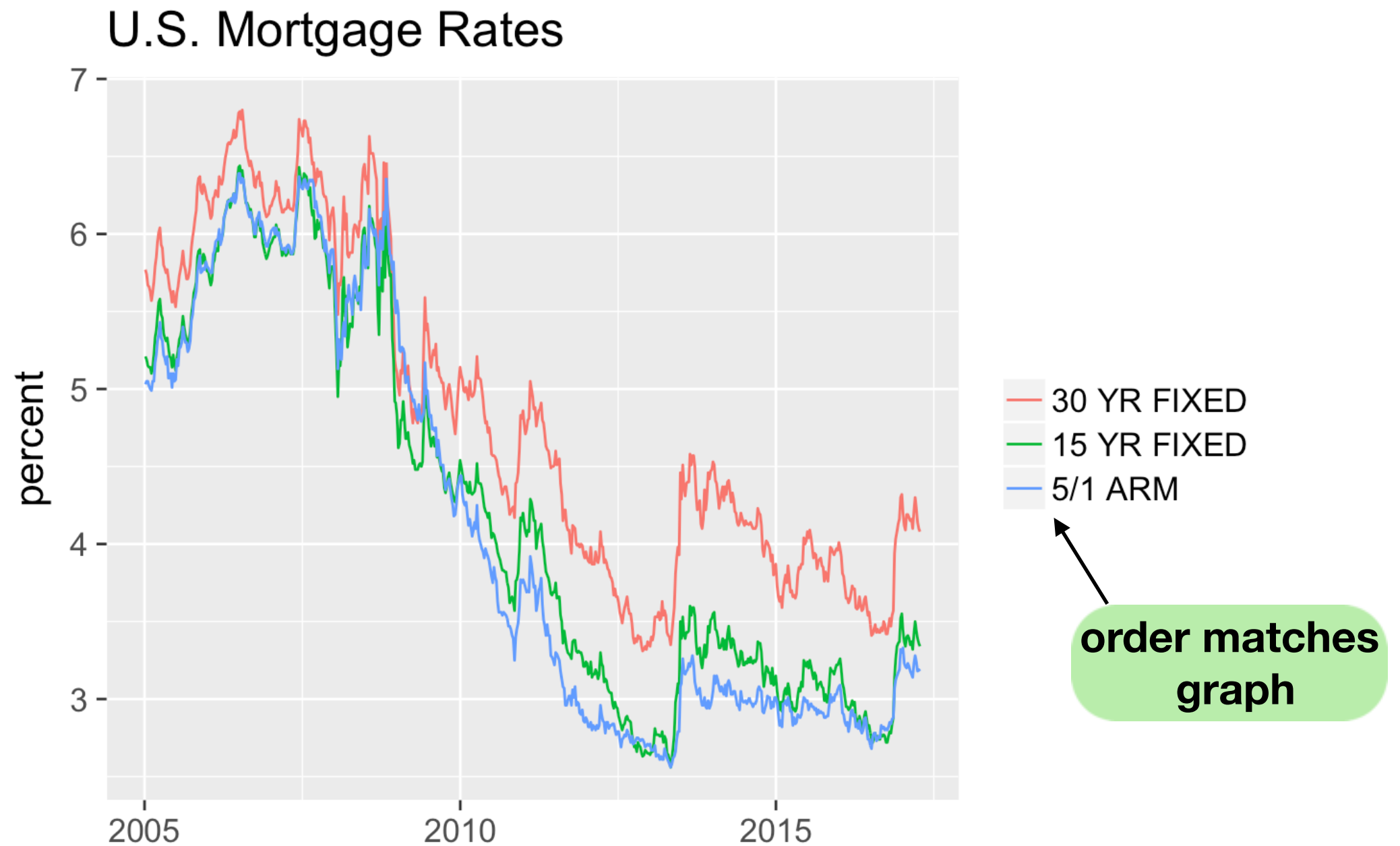


Be consistent with colors



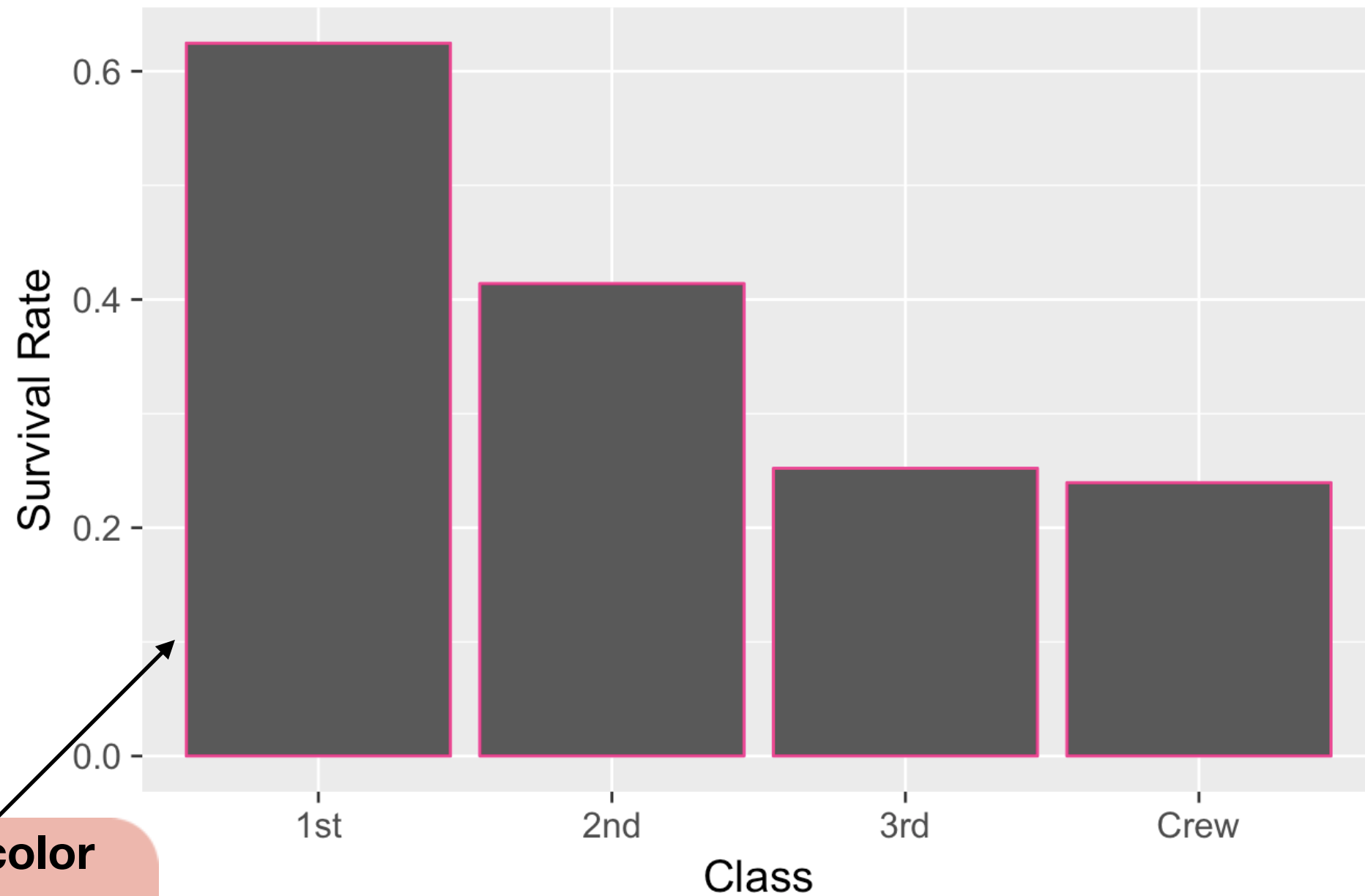
(inconsistent)

Legend order matches graph order



Dark fill, light border doesn't work

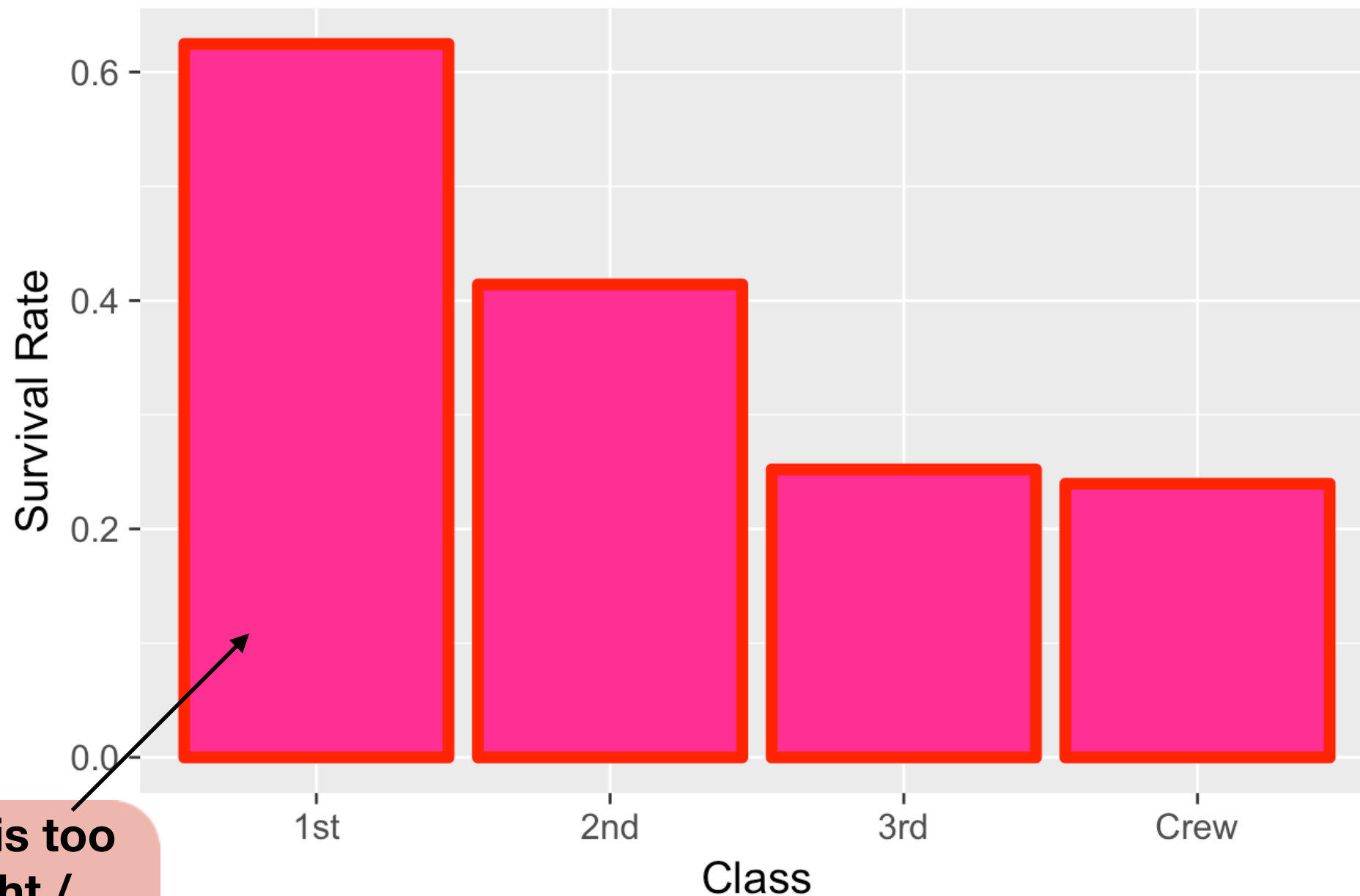
Titanic Survival Rates by Class



bad color
choices

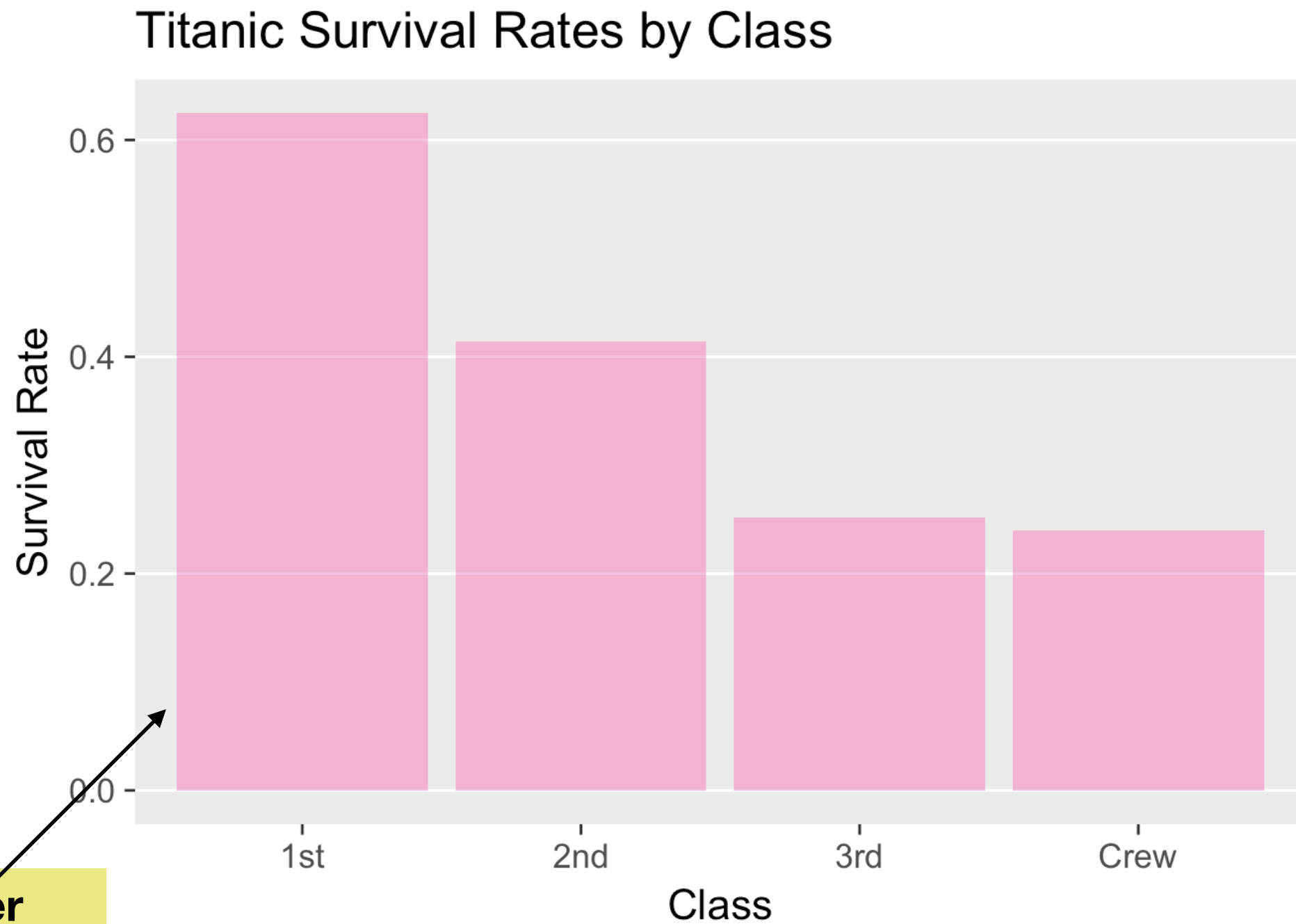
Limit overly bright colors

Titanic Survival Rates by Class

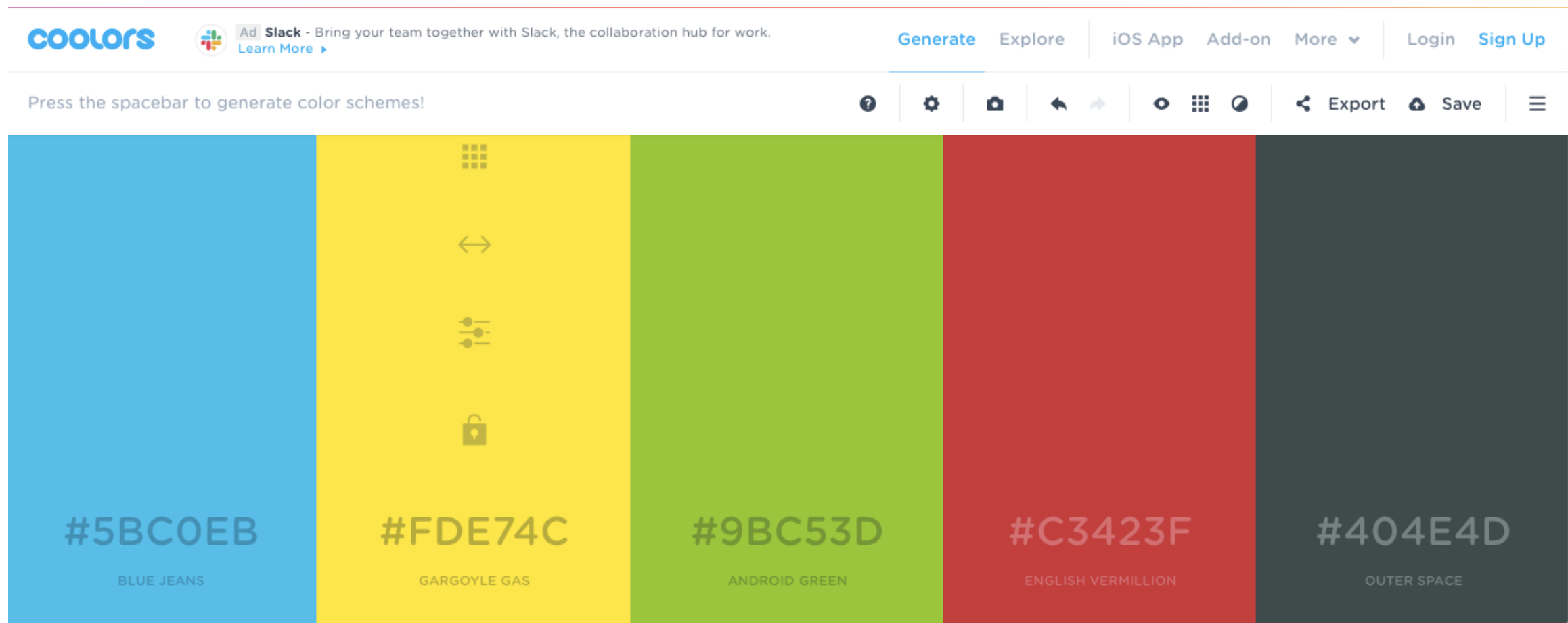


color is too
bright /
distracting

Toned down generally works better



Create your own palettes



<https://coolours.co/app>