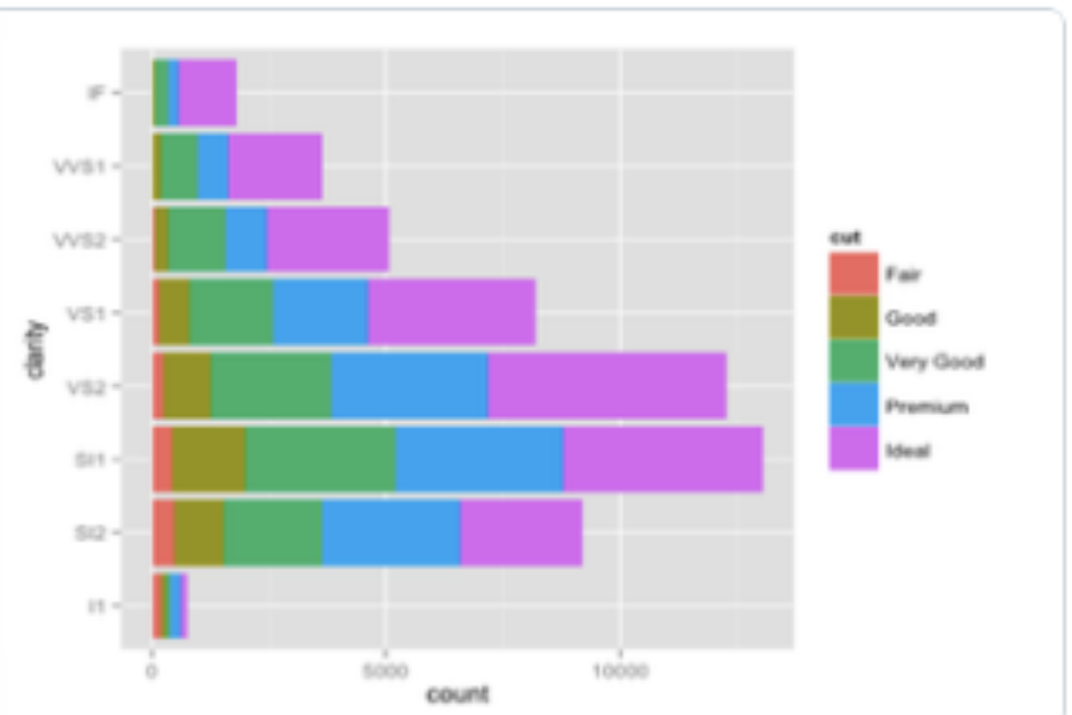
Color

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

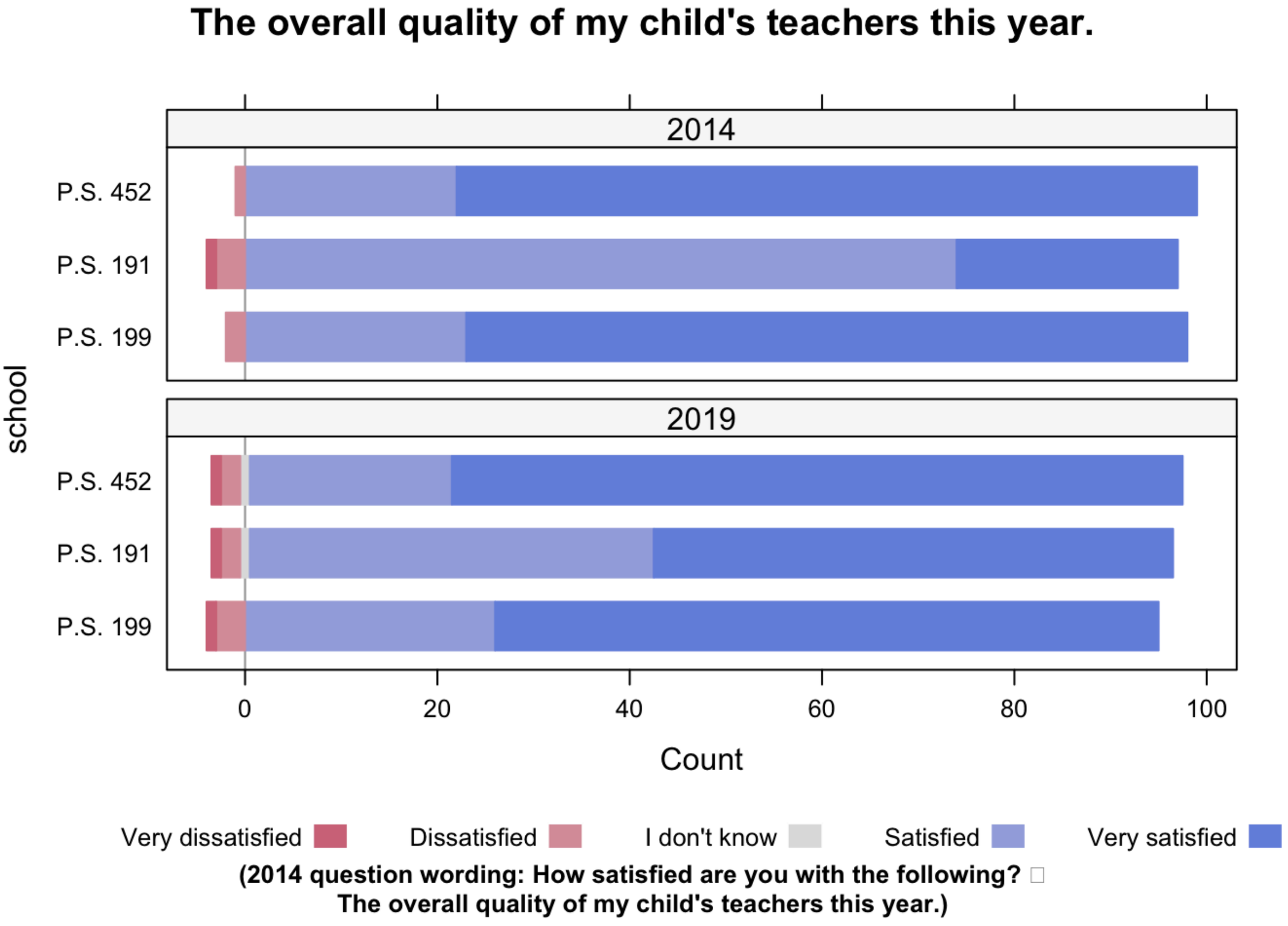
112 RETWEETS **237** LIKES

RColorBrewer Color Schemes

sequential

RColorBrewer Color Schemes

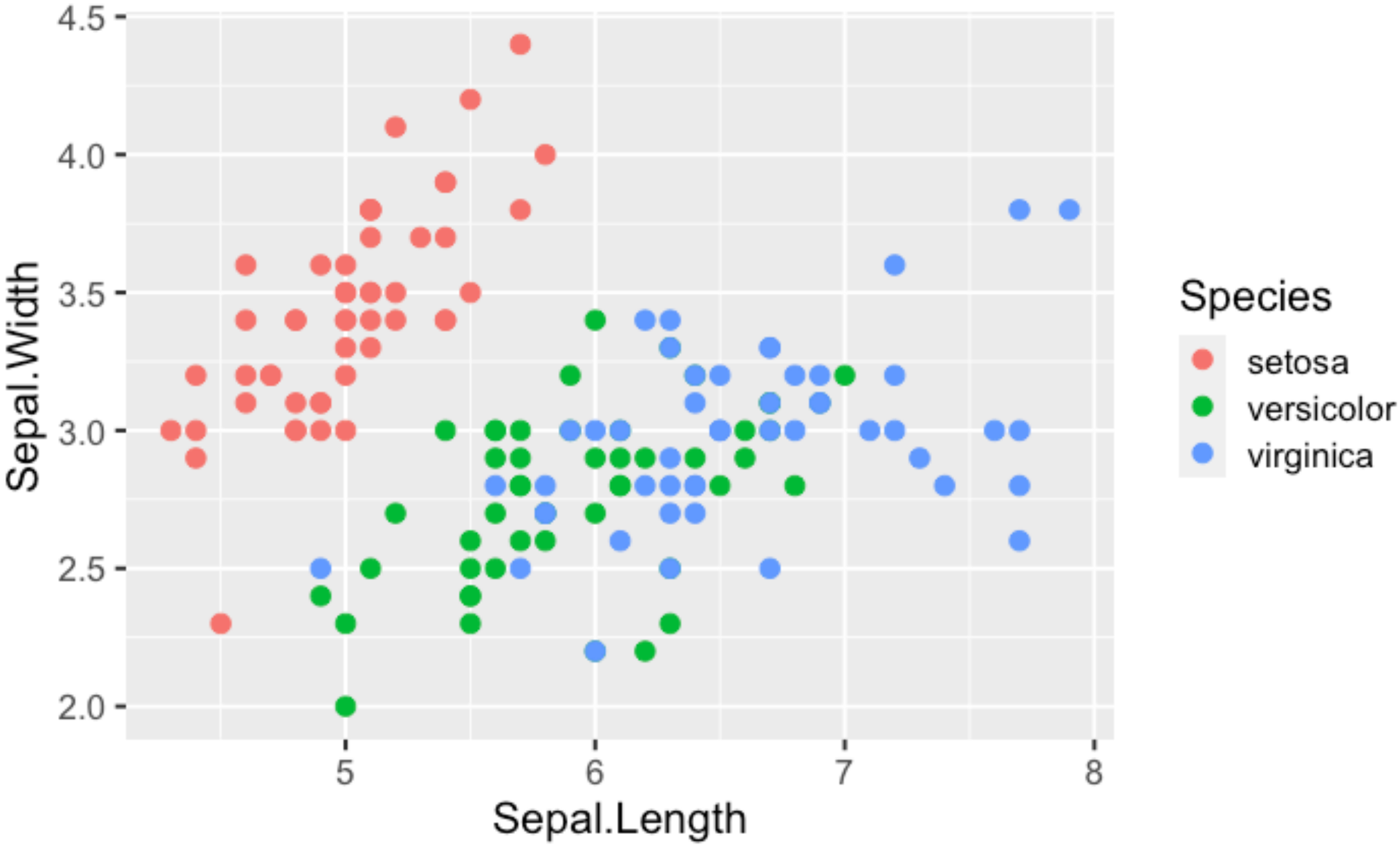
diverging


The overall quality of my child's teachers this year.
2014
2019
P.S. 452
P.S. 191
P.S. 199
school
0
20
40
60
80
100
Count
Very dissatisfied
Dissatisfied
I don't know
Satisfied
Very satisfied
(2014 question wording: How satisfied are you with the following? 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_

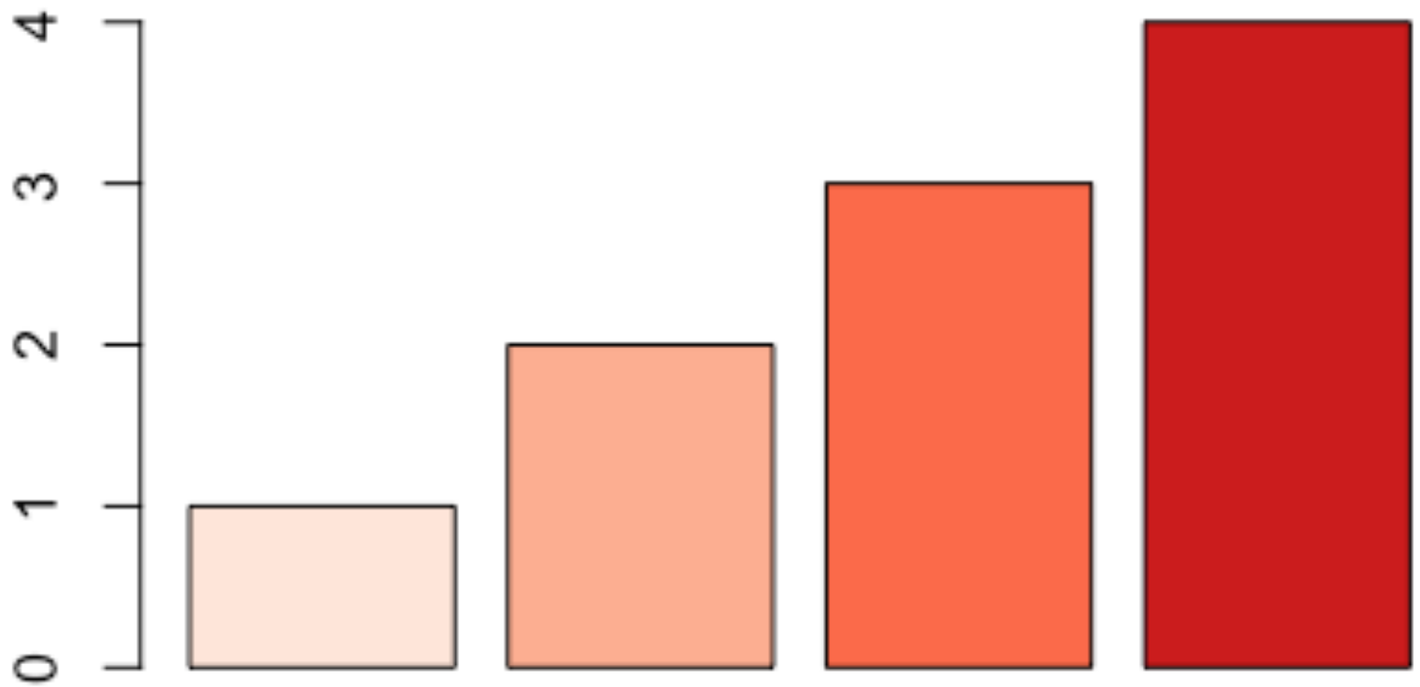
Create your own

```
+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

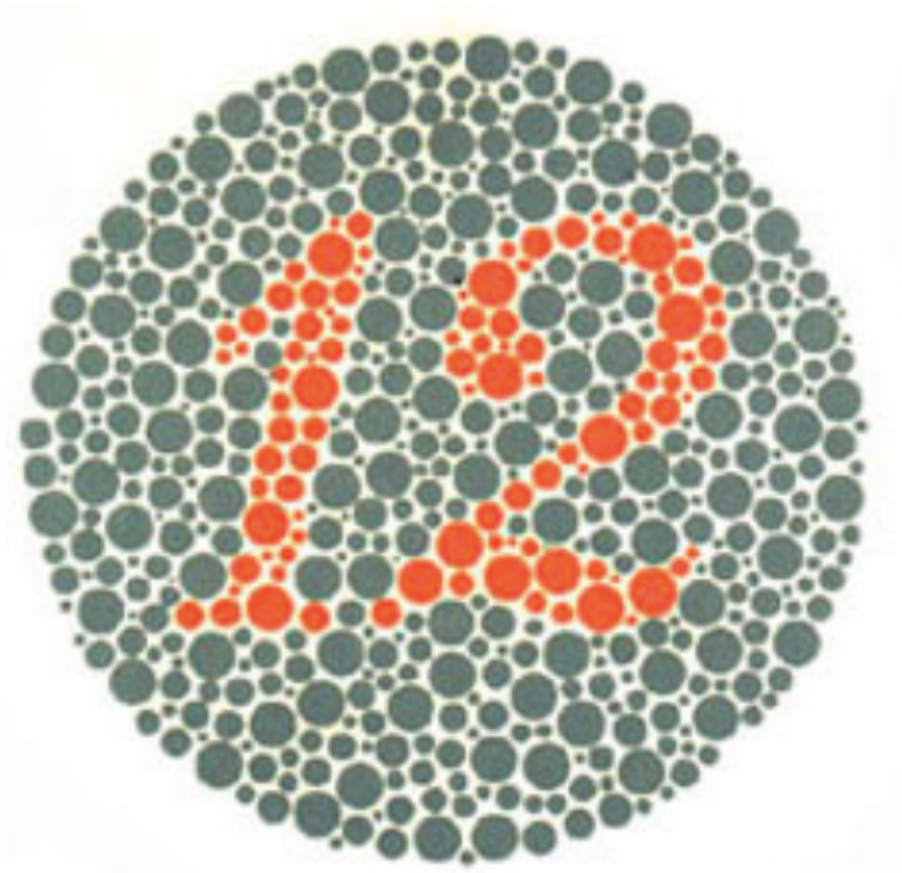
missing or deficient cones:

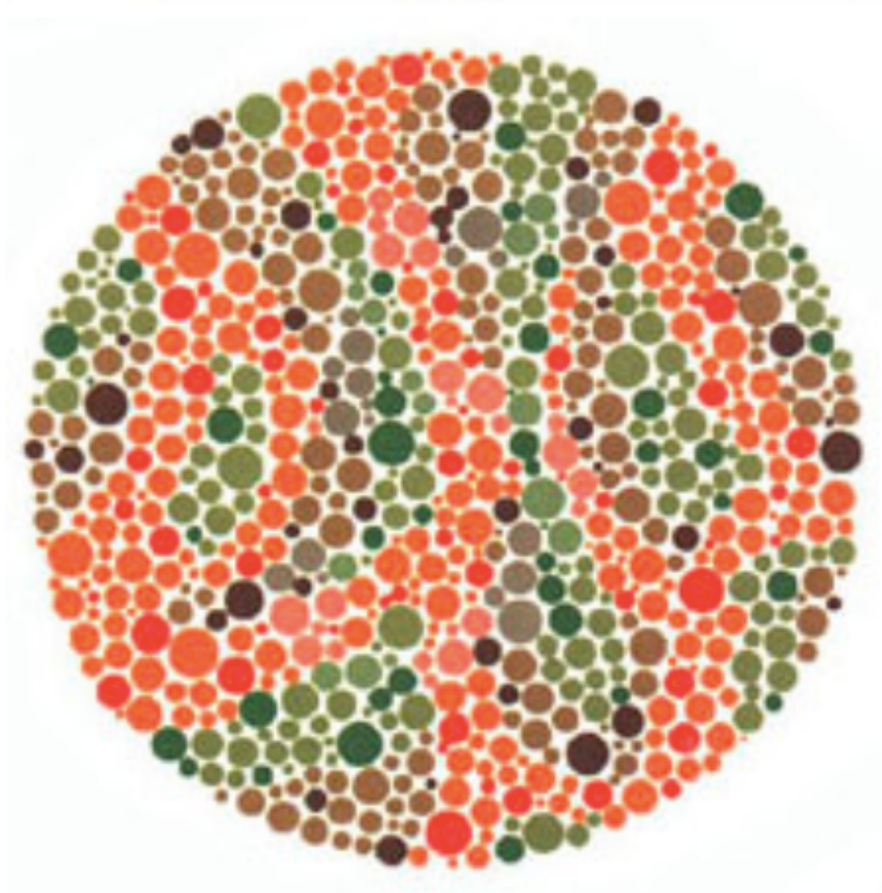
protanopia (red)

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)

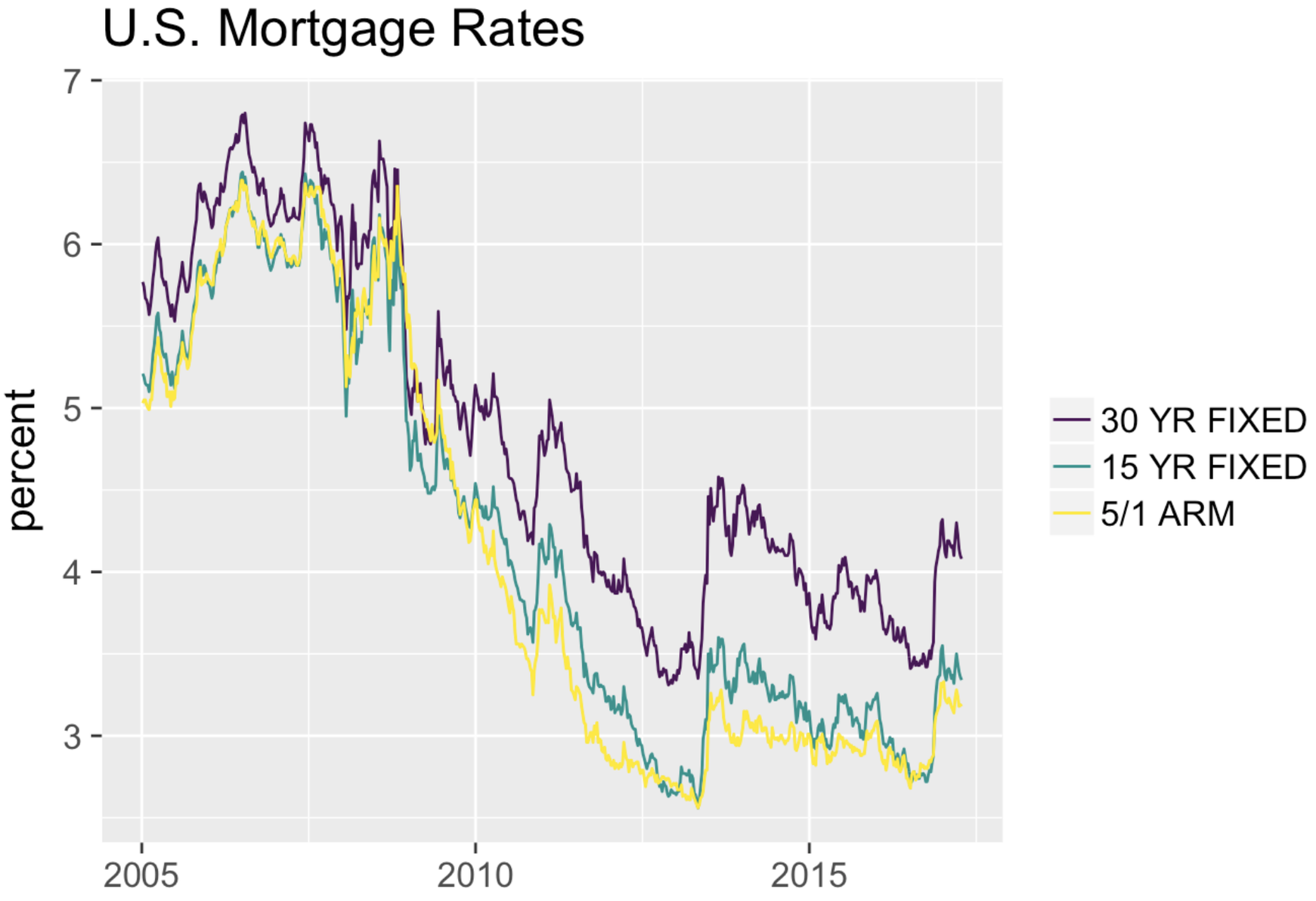
Use a color vision deficiency simulator such as Color Oracle

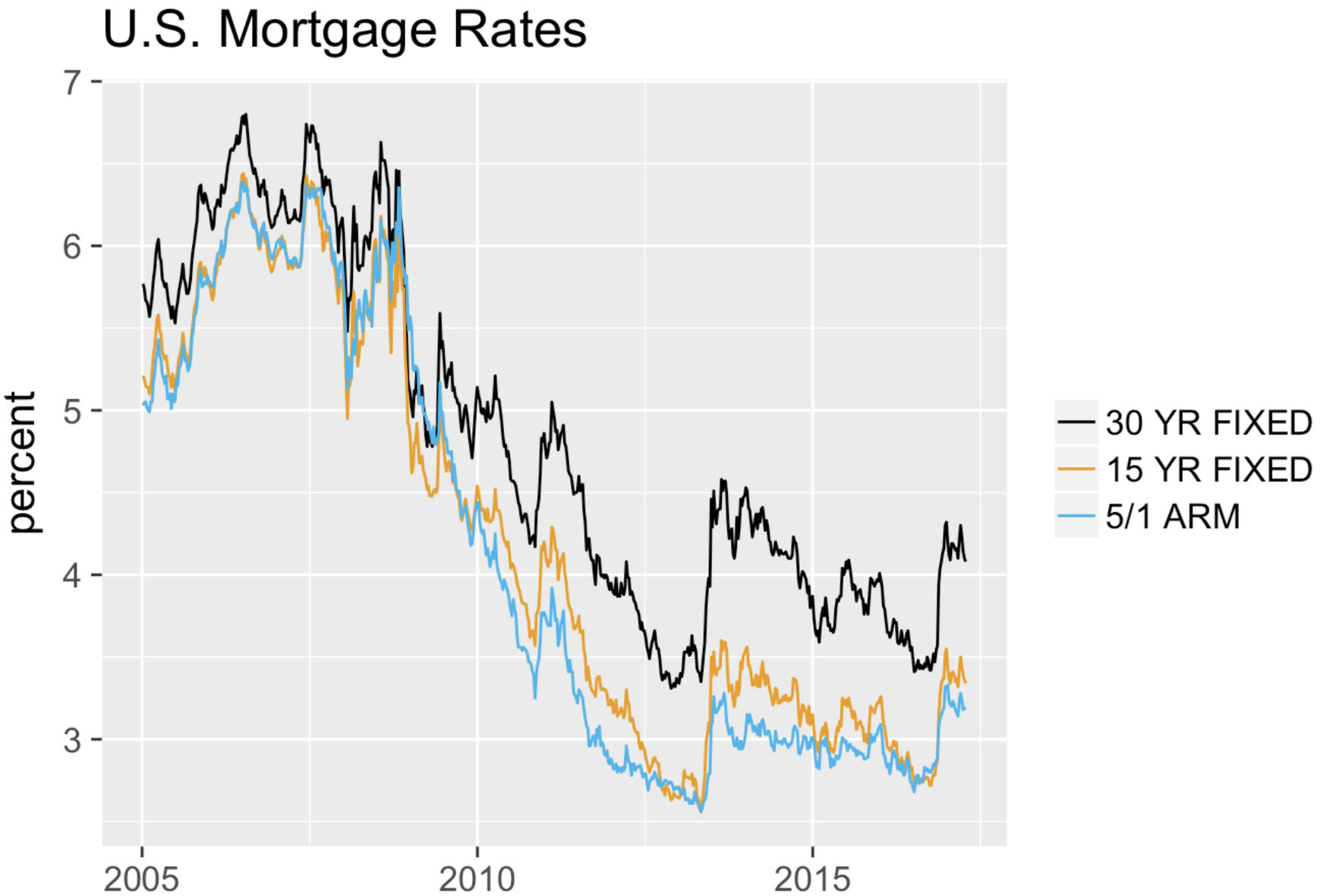
Use high contrast

Your Results:

Original Image

Deuteranope Simulation


U.S. Mortgage Rates
7
6
5
4
3
percent
2005
2010
2015
30 YR FIXED
15 YR FIXED
5/1 ARM




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

General color tips

Be consistent with colors

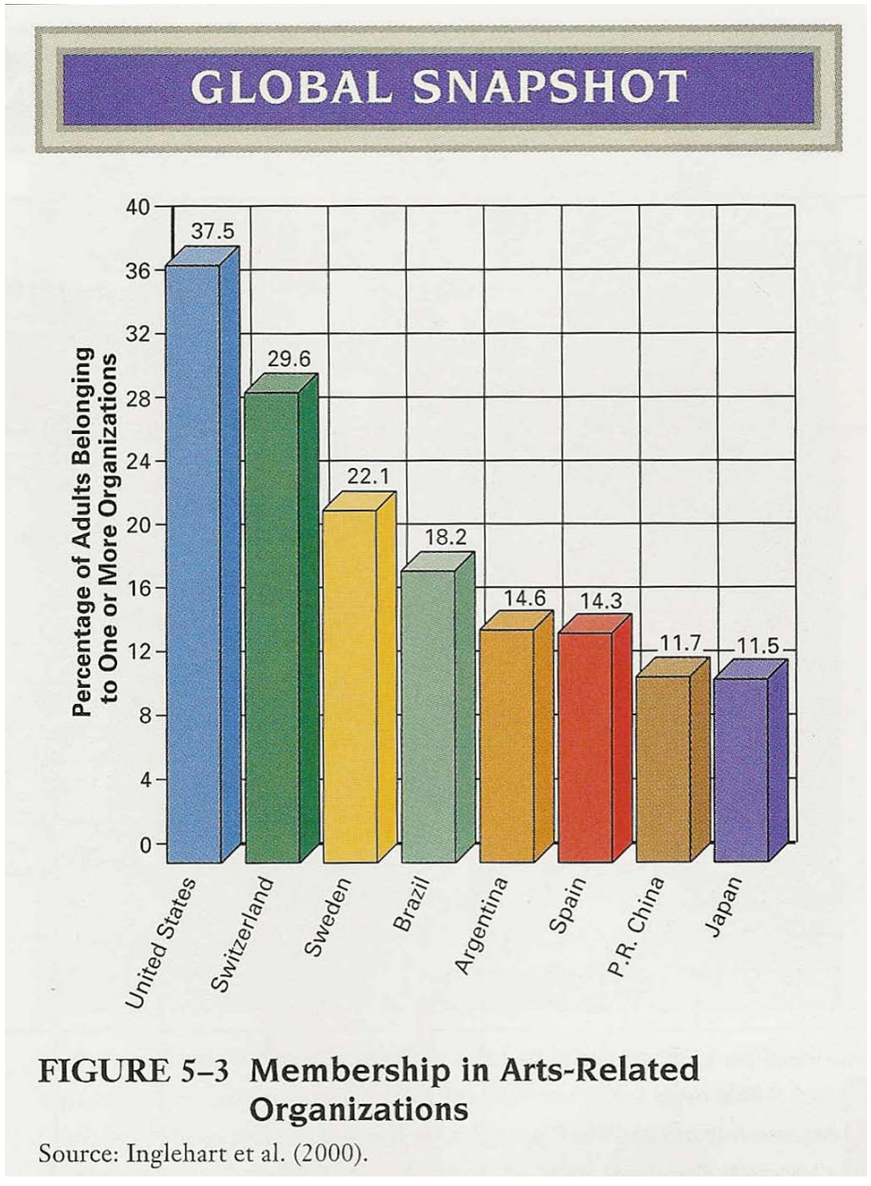


FIGURE 5–3 Membership in Arts-Related Organizations

Source: Inglehart et al. (2000).

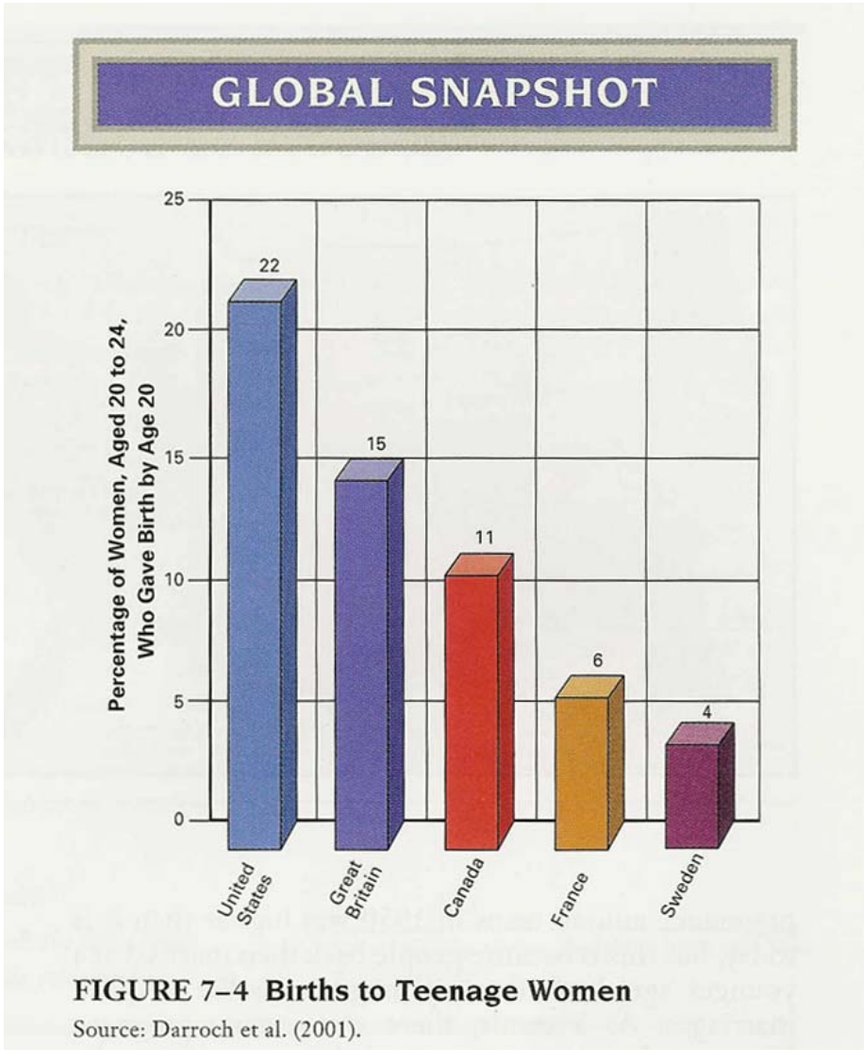
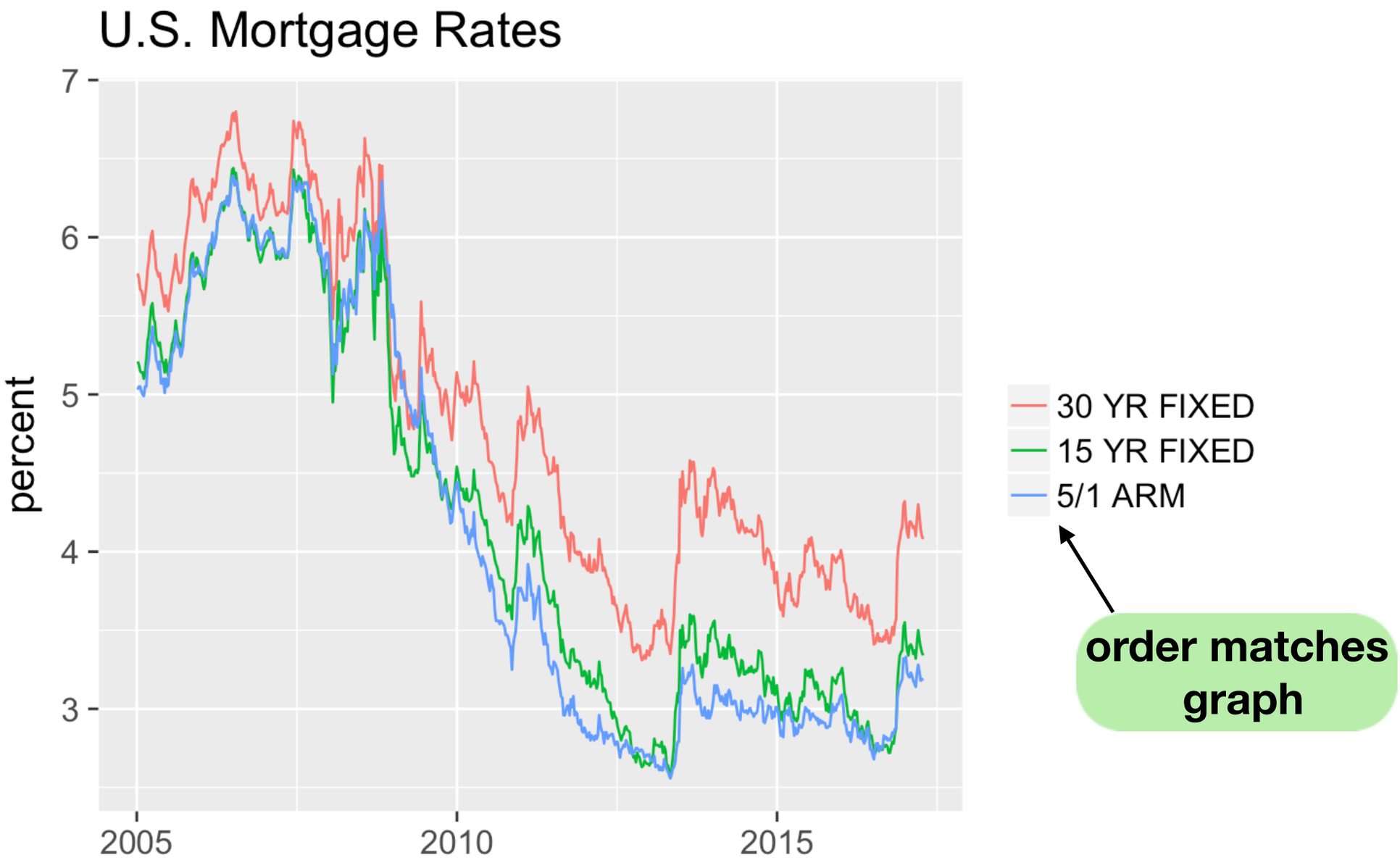


FIGURE 7–4 Births to Teenage Women

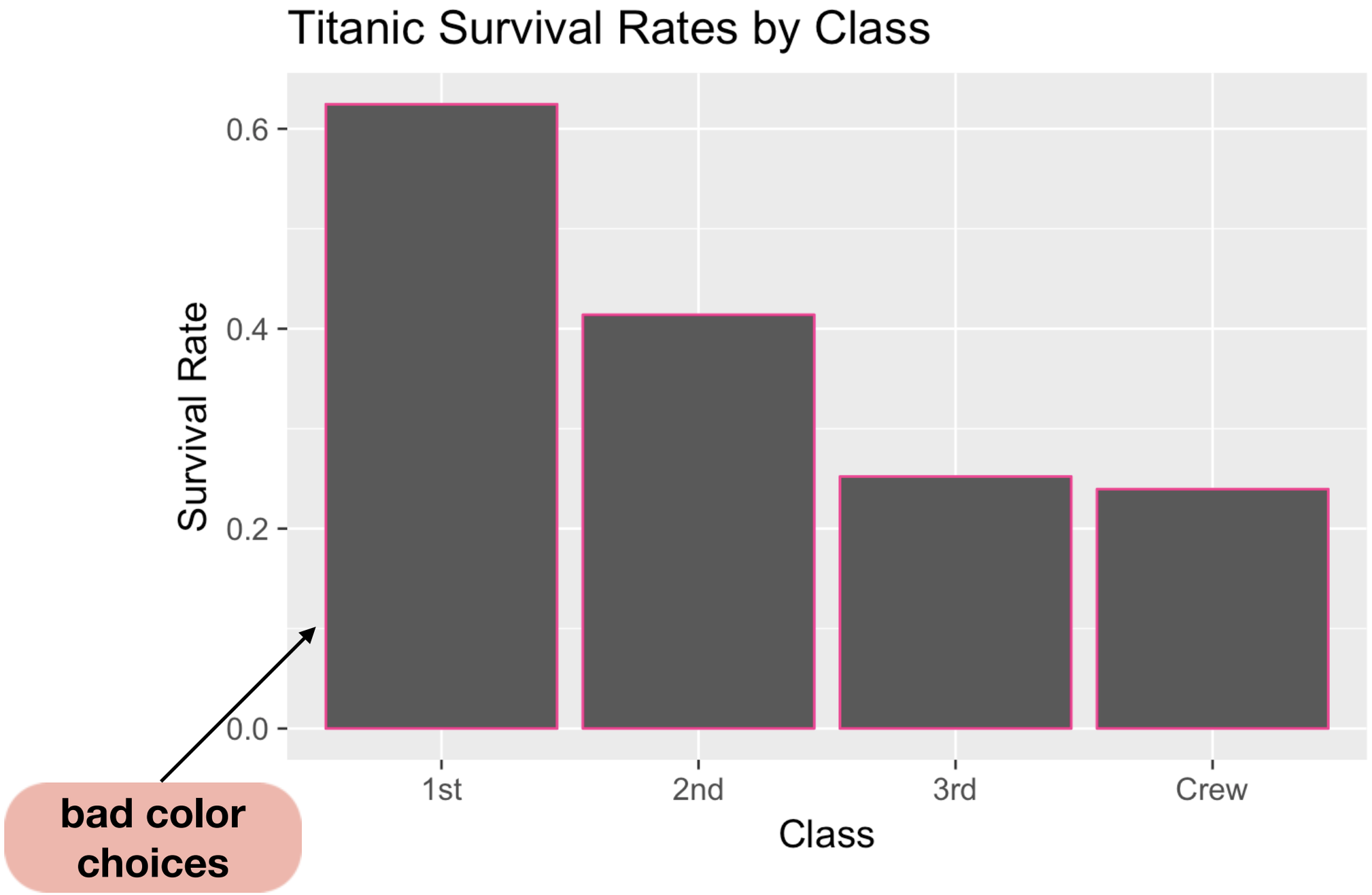
Source: Darroch et al. (2001).

(inconsistent)

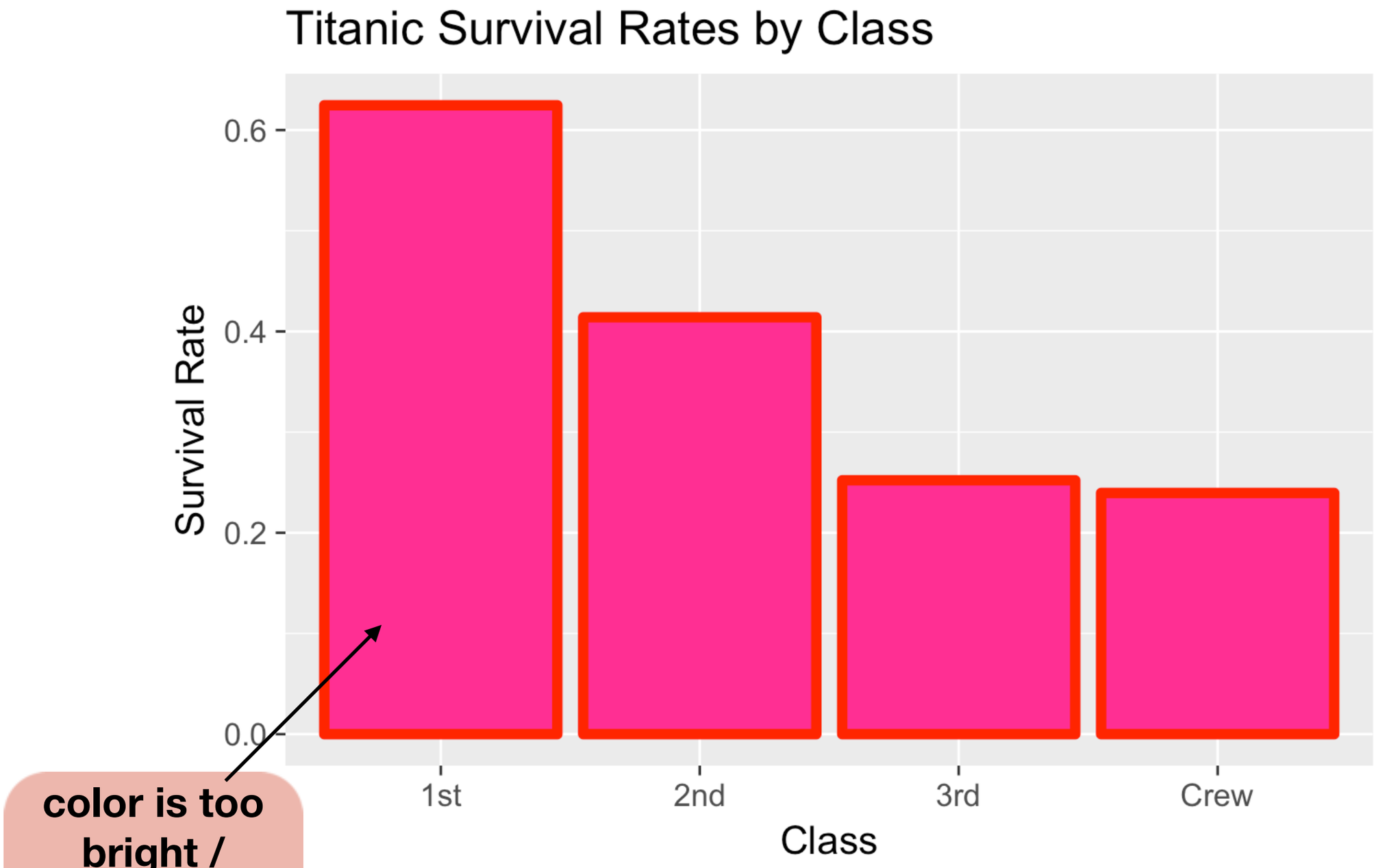
Legend order matches graph order



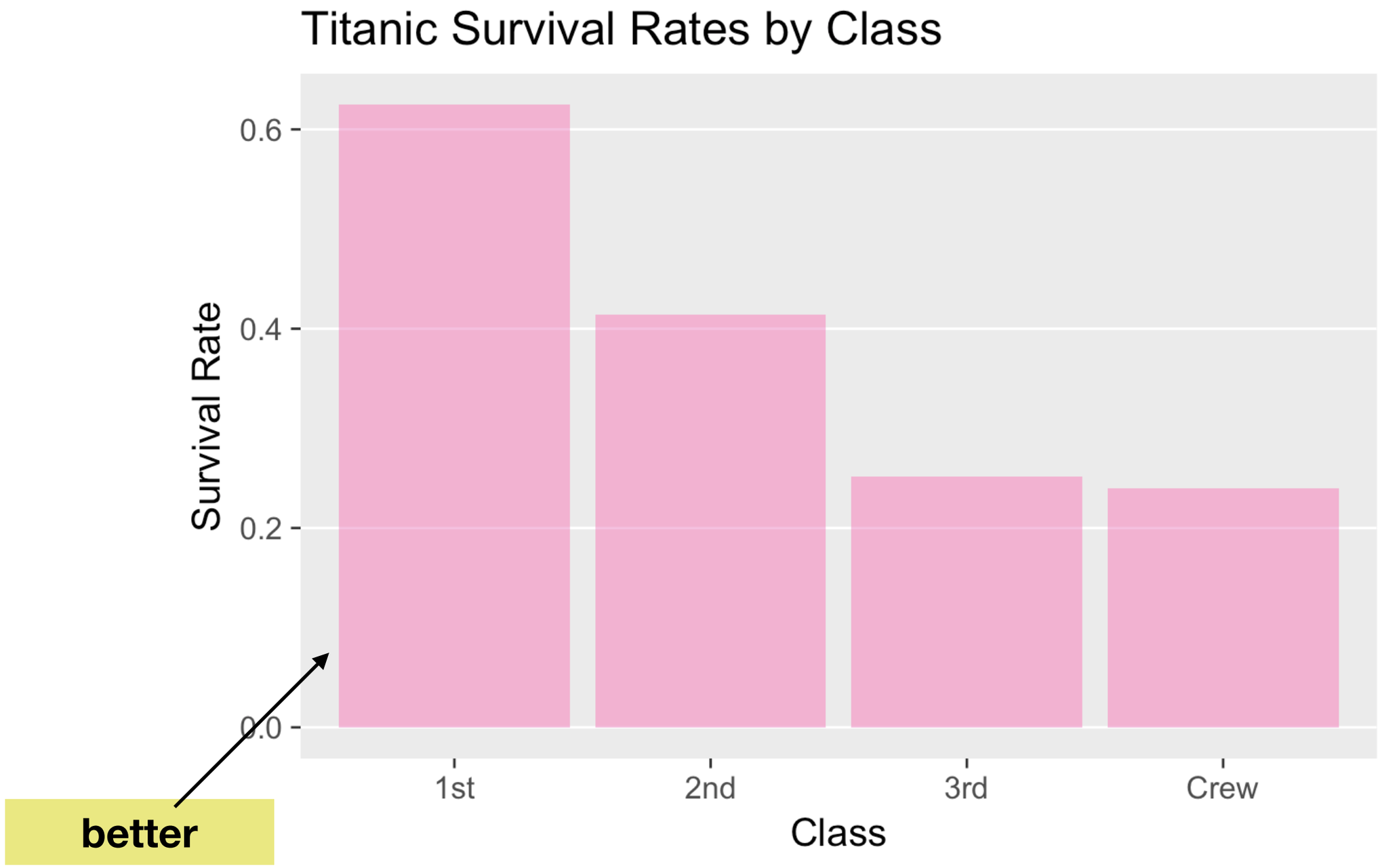
Dark fill, light border doesn't work



Limit overly bright colors



Toned down generally works better



Create your own palettes

https://coolors.co/app