

# Customizing Plots

We now know how to create many plot types using `ggplot2`, but often you want to customize your plots. Today, we'll discuss common tools for customizing our plots.

To begin, make sure that you have the `tidyverse` loaded.

```
library(tidyverse)
```

## The Deadeast Names in the U.S.

The “Deadeast Names” graphics appeared on [fivethirtyeight.com](http://fivethirtyeight.com) on 5/29/14. Today, we'll recreate this plot to illustrate additional customizations that are possible in R.

The data for this plot can be found on [github](https://github.com) and loaded into R using the following command:

```
dead_names <- read_csv("https://raw.githubusercontent.com/cmssc205/data/master/dead_names.csv")
```

## Recreating the graphic

First, we must recreate the structure of the bar chart.

```
dnplot <-  
  ggplot(dead_names, aes(x = reorder(name, pct_dead), y = pct_dead, fill = sex)) +  
  geom_bar(stat = "identity") +  
  geom_text(aes(label = pct_dead), hjust = -.1) +  
  facet_wrap(~sex, scales = "free_y", ncol = 1) +  
  coord_flip() +  
  ylim(0, 95) +  
  labs(x = NULL, y = NULL,  
       title = "Deadeast Names",  
       subtitle = "Estimated percentage of Americans with a given name born since 1900 who were dead a
```

## Choosing color palettes

`ggplot2` does not choose the nicest looking palettes, and the palettes are typically not colorblind friendly. Luckily, it's quite easy to change the color palettes you use.

## Manual adjustments

```
dnplot +  
  scale_fill_manual(values = c("goldenrod1", "dodgerblue1"))
```

## Deadest Names

Estimated percentage of Americans with a given name born since 1900 who were dead as of Jan. 1, 2014

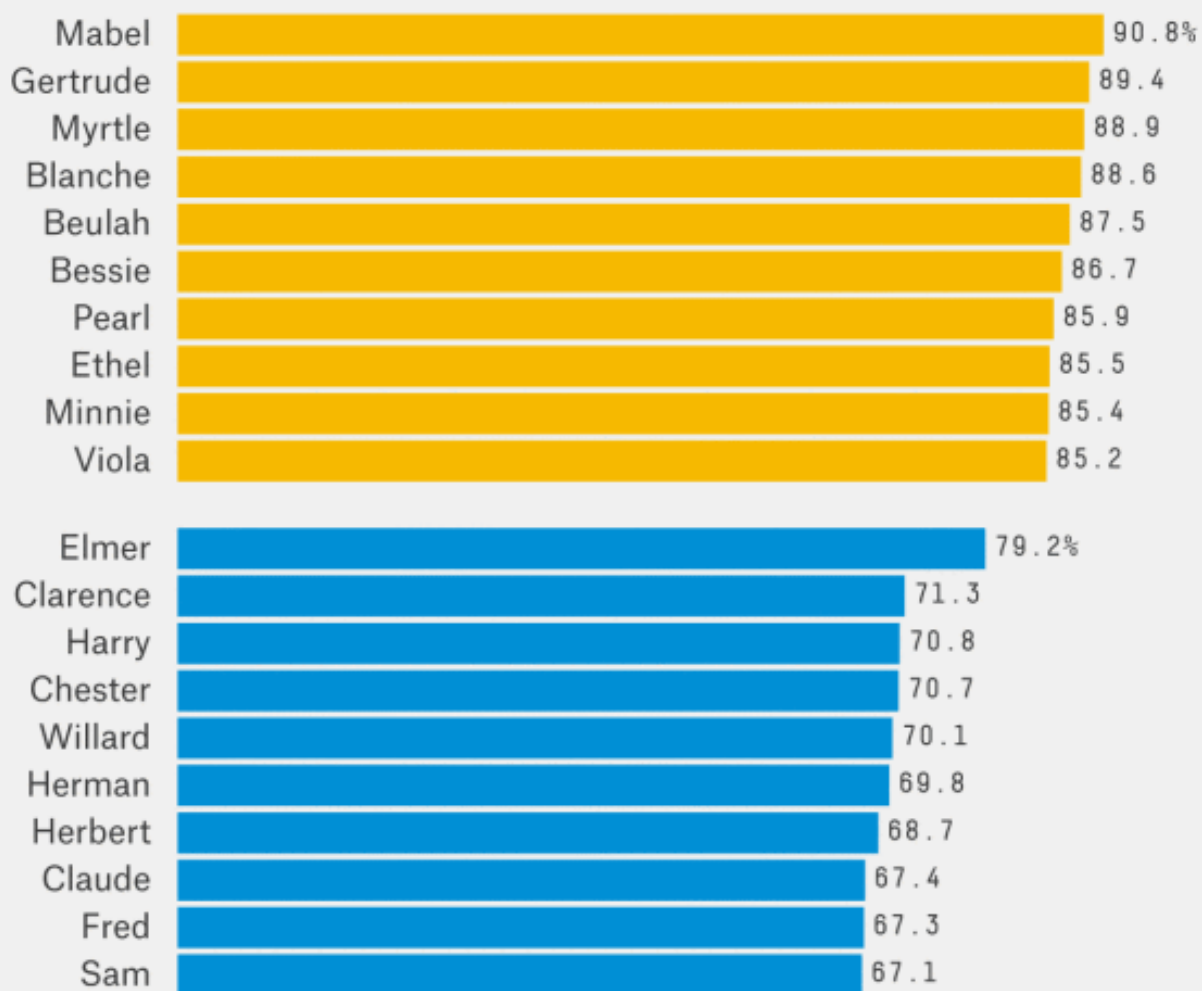
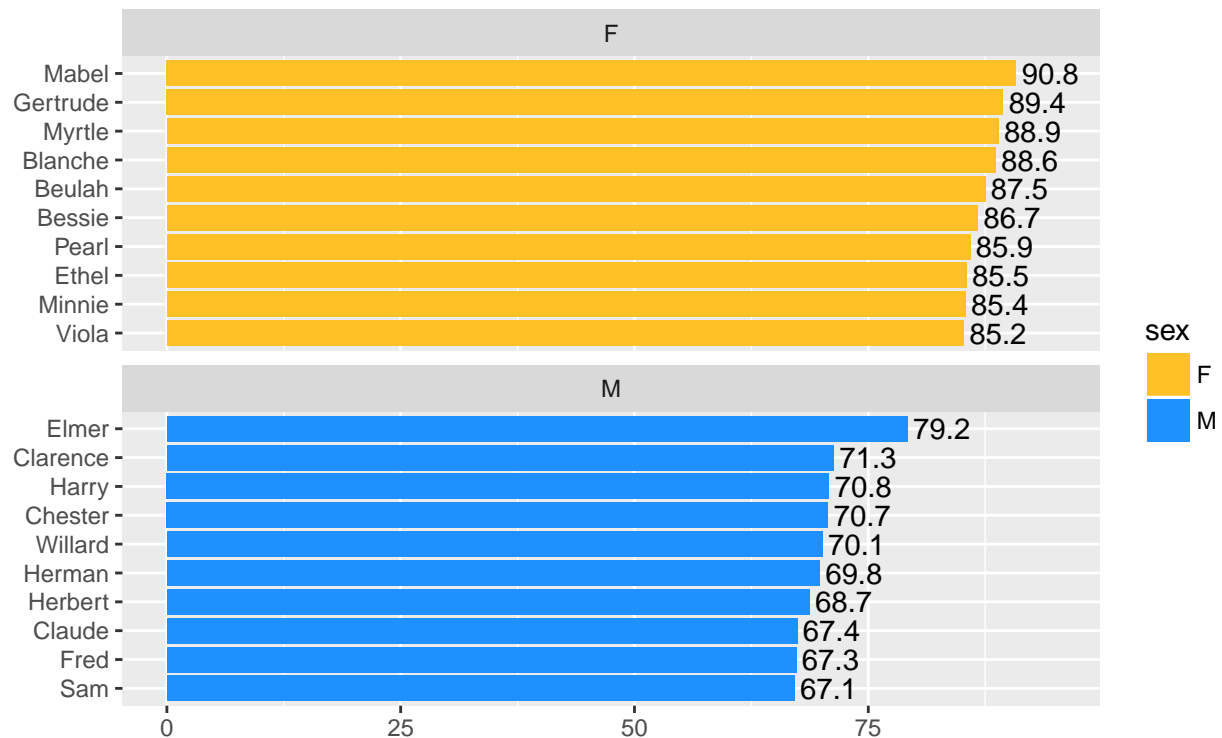


Figure 1:

## Deadest Names

Estimated percentage of Americans with a given name born since 1900 who were dead as of Jan. 1, 2014



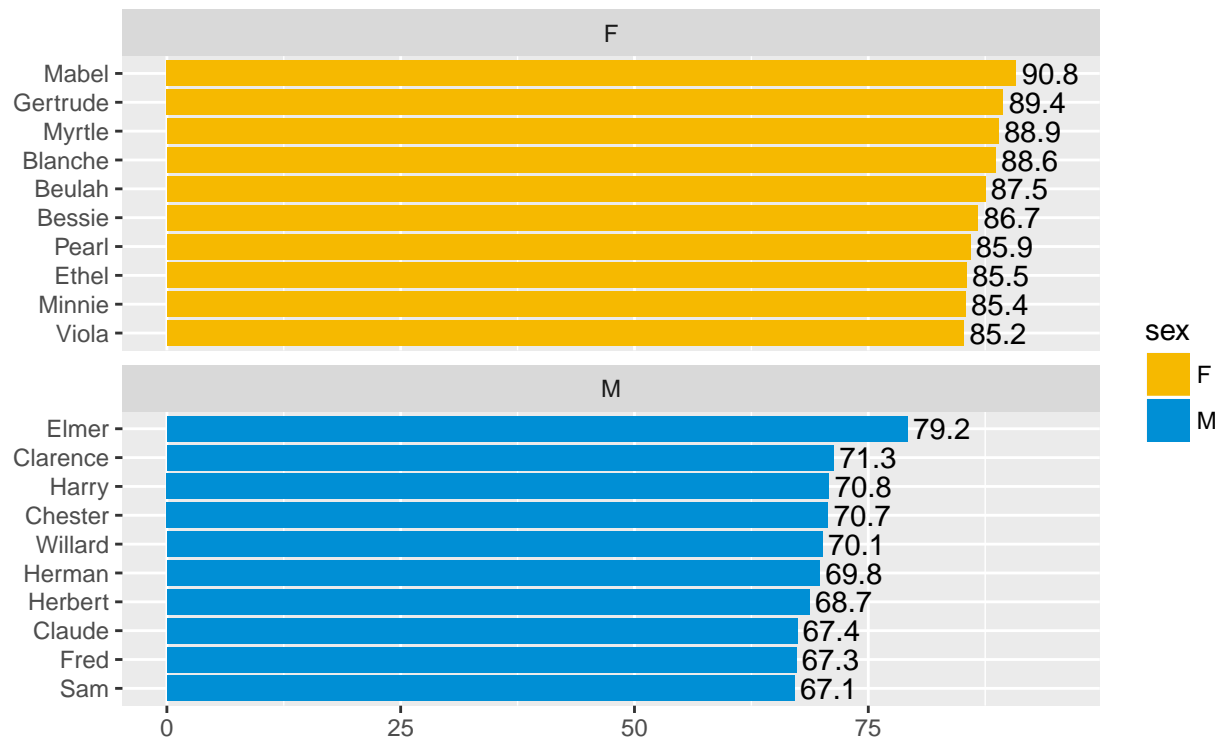
R has numerous named colors, but they are limited. For more freedom in your color specification, you may wish to switch to hexadecimal color specification.

We can match the colors used exactly using a hexadecimal specification determined with a digital color meter.

```
p538 <-
  dnplot +
    scale_fill_manual(values = c("#f6b900", "#008fd5"))
p538
```

## Deadest Names

Estimated percentage of Americans with a given name born since 1900 who were dead as of Jan. 1, 2014



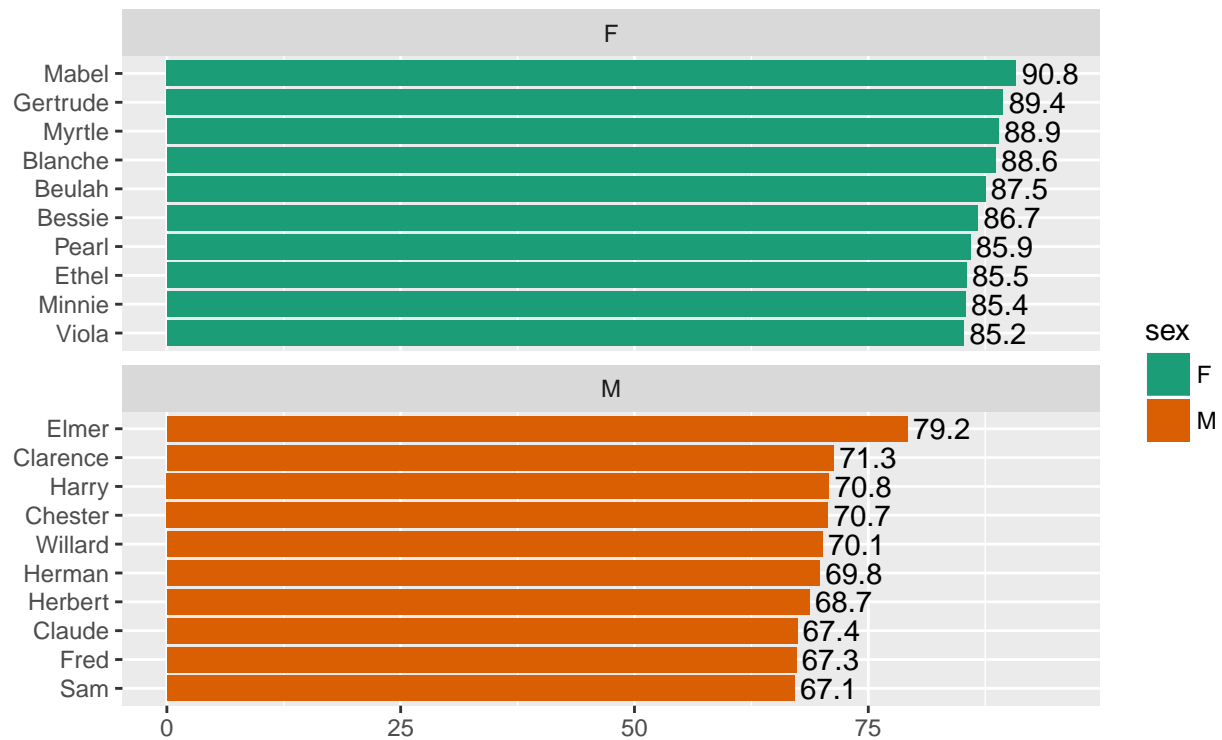
## Using RColorBrewer

While it was relatively easy to pick two colors, it can be much harder to select color palettes. Luckily, we can use other vetted palettes.

```
dnplot +  
  scale_fill_brewer(palette = "Dark2")
```

## Deadest Names

Estimated percentage of Americans with a given name born since 1900 who were dead as of Jan. 1, 2014



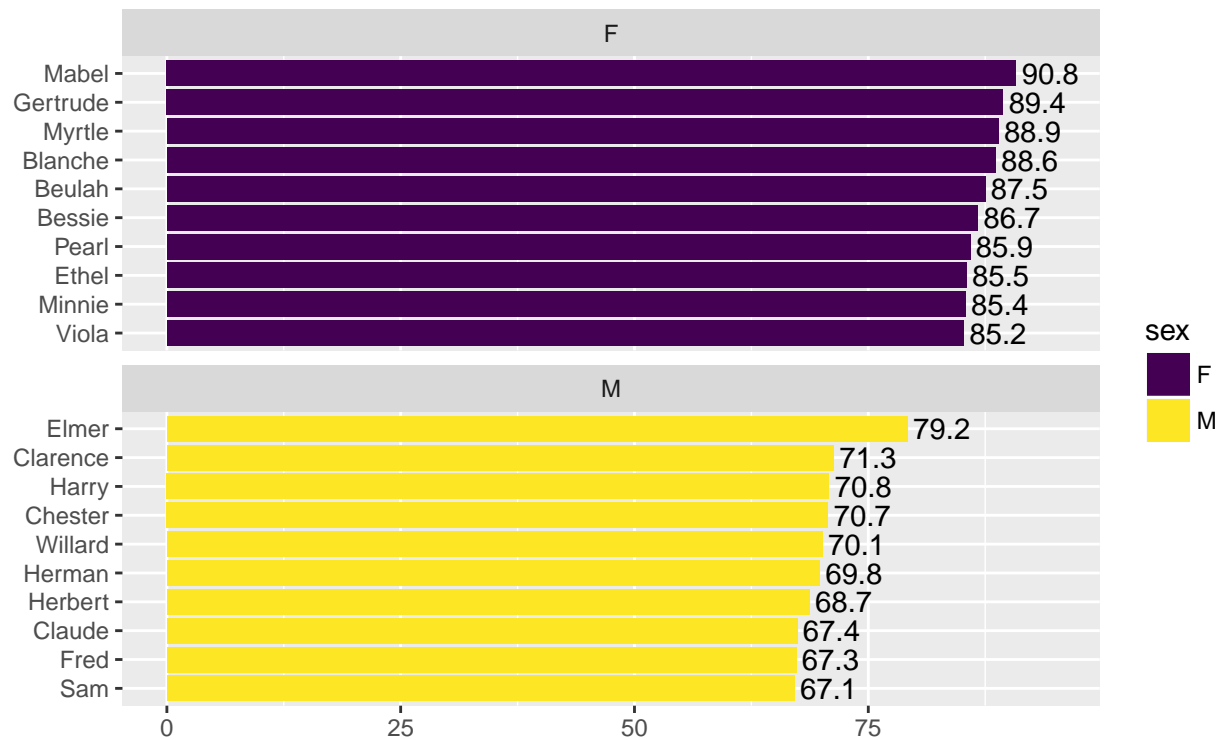
## Using viridis

```
library(viridis)
p538 +
  scale_fill_viridis(discrete = TRUE)
```

```
## Scale for 'fill' is already present. Adding another scale for 'fill',
## which will replace the existing scale.
```

## Deadest Names

Estimated percentage of Americans with a given name born since 1900 who were dead as of Jan. 1, 2014



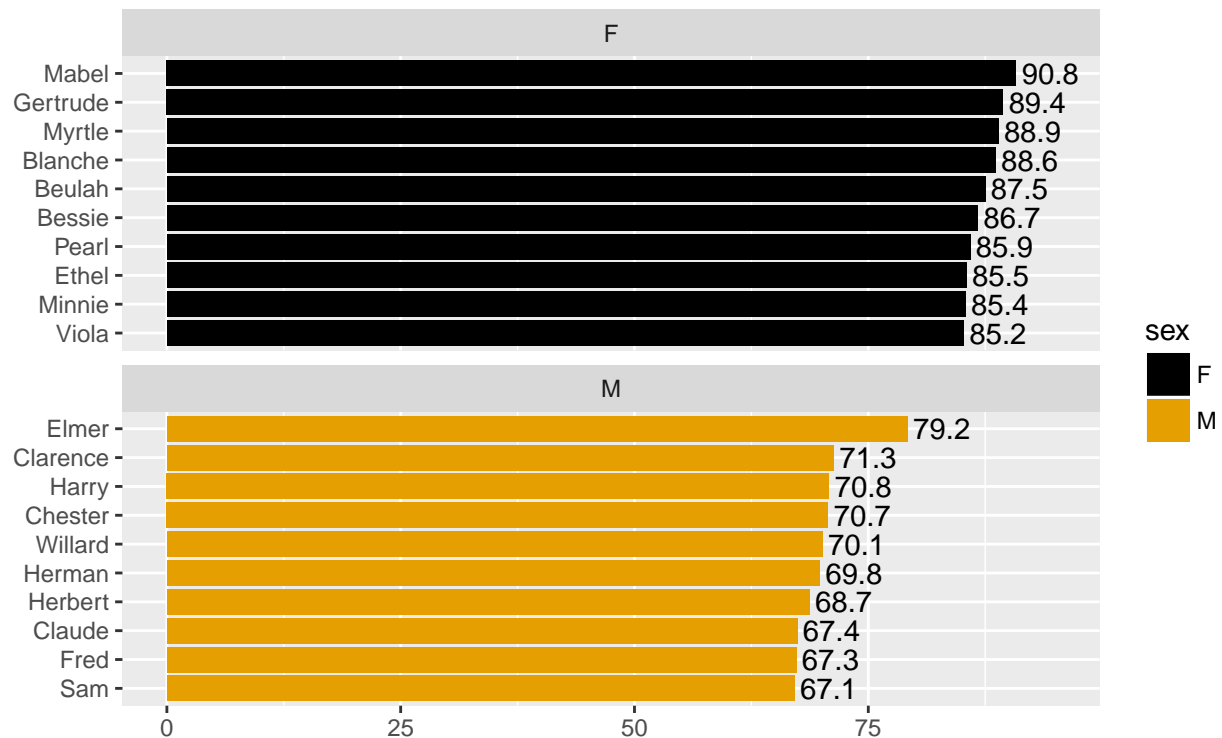
## A colorblind friendly palette

```
library(ggthemes)
p538 +
  scale_fill_colorblind()
```

```
## Scale for 'fill' is already present. Adding another scale for 'fill',
## which will replace the existing scale.
```

## Deadest Names

Estimated percentage of Americans with a given name born since 1900 who were dead as of Jan. 1, 2014



## Choosing themes

By default `ggplot2` uses a grey background and guidelines on a plot; however, we don't always want our plots to appear this way. To change this the appearance, we need to work with themes.

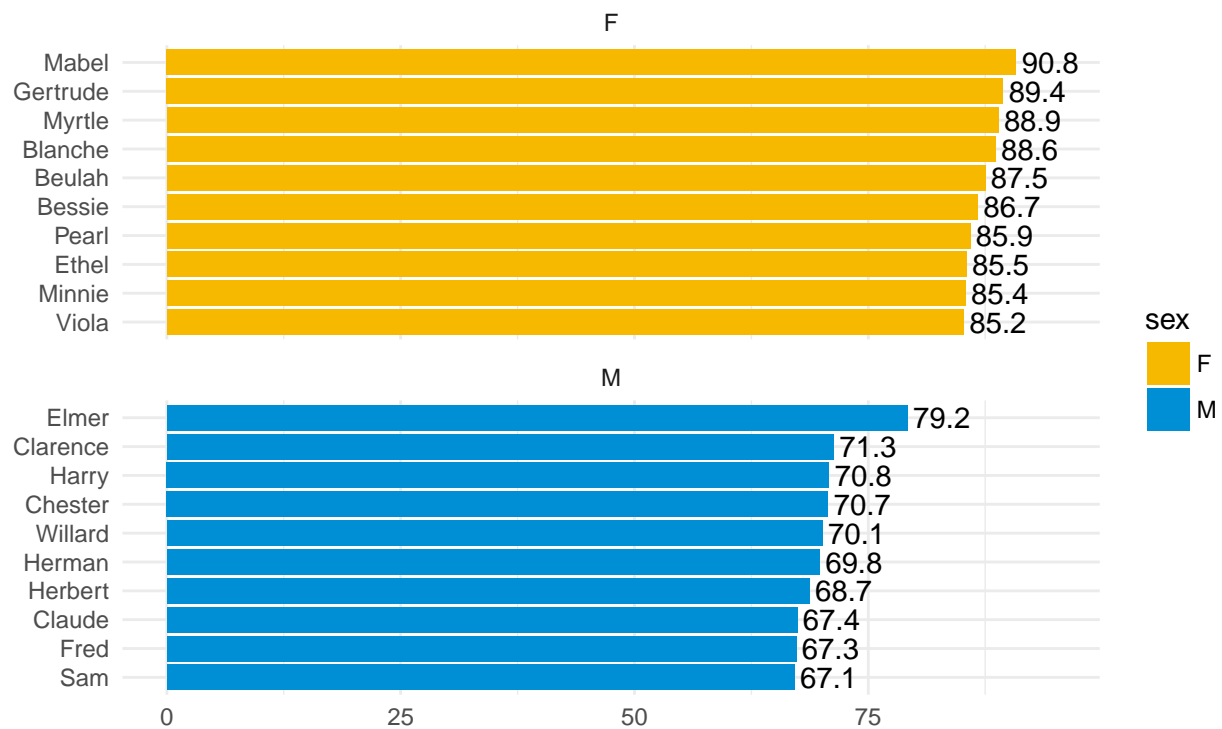
The `ggthemes` package offers many additional choices.

Remember, a new theme is added just like a layer.

```
p538 +  
  theme_minimal()
```

## Deadest Names

Estimated percentage of Americans with a given name born since 1900 who were dead as of Jan. 1, 2014



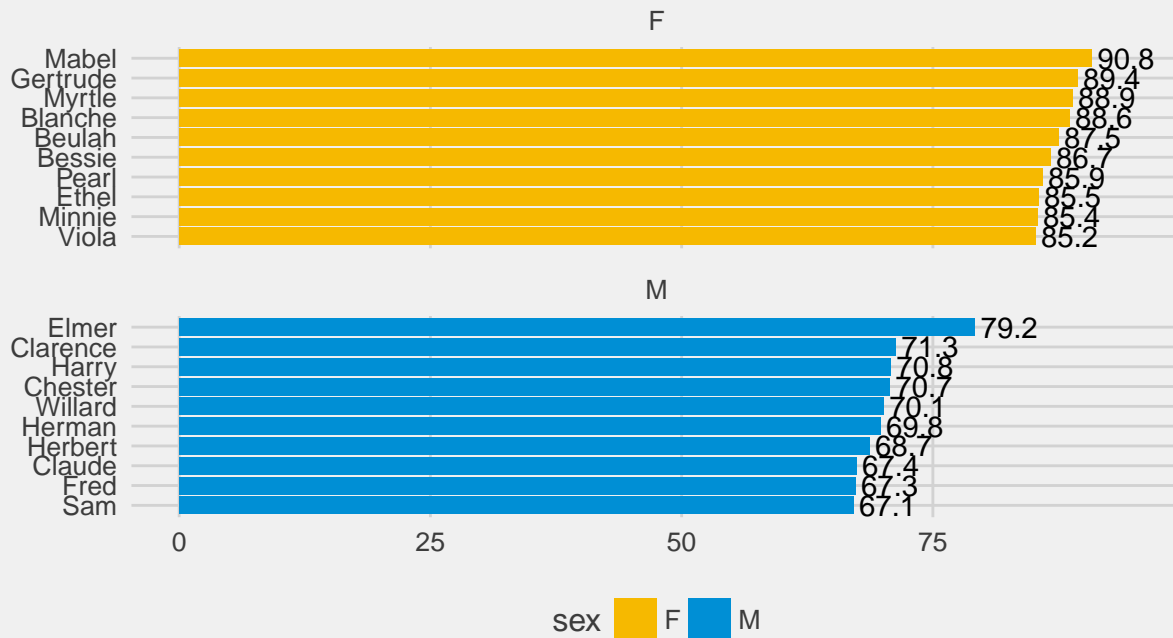
What other themes could we try?

```
p538 +  
  theme_fivethirtyeight()
```



## Deadest Names

Estimated percentage of Americans with a given name born since 1900 who were dead as of Jan. 1, 2014



## Customizing themes

The `theme()` function allows us to fine tune every aspect of our plot canvas.

```
p538 +
  theme_fivethirtyeight() +
  theme(legend.position = "none", # get rid of legend
        panel.grid = element_blank(), # get rid of grid lines
        strip.text = element_blank(), # get rid of facet labels
        axis.text.x = element_blank() # no scale for bar length
  )
```

## Deadeast Names

Estimated percentage of Americans with a given name born since 1900 who were dead as of Jan. 1, 2014

