SENTIMENT ANALYSIS IN R

Parlor trick or worthwhile?

Ted Kwartler
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Interesting Visuals

Good Visuals

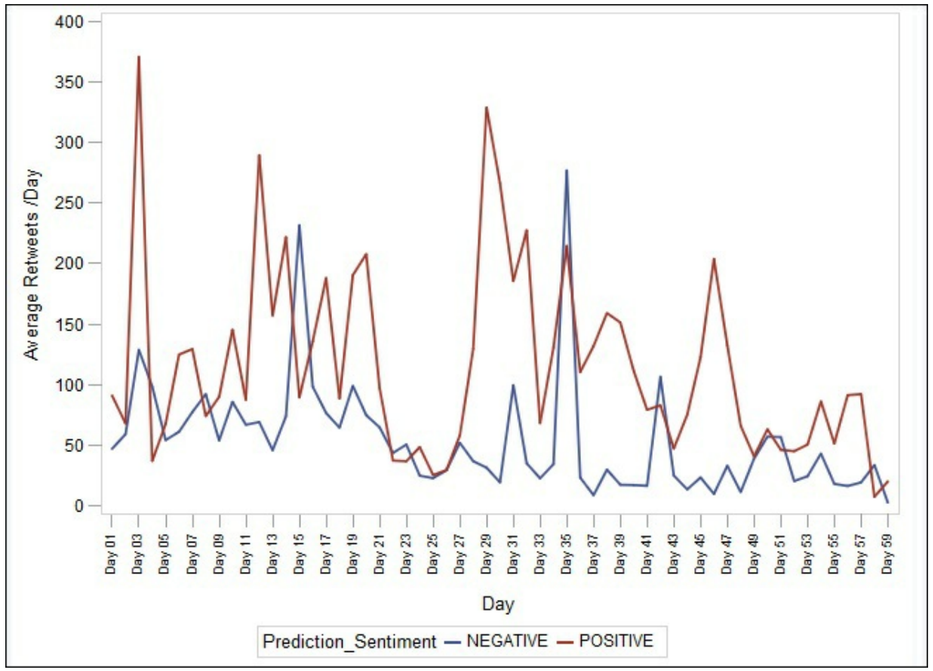
- **Simple** to interpret
- **Confirm** or **Elucidate** data aspects
- **Context** for the audience
- **Appropriate** type e.g. line charts for time, bars for amounts

Bonus:

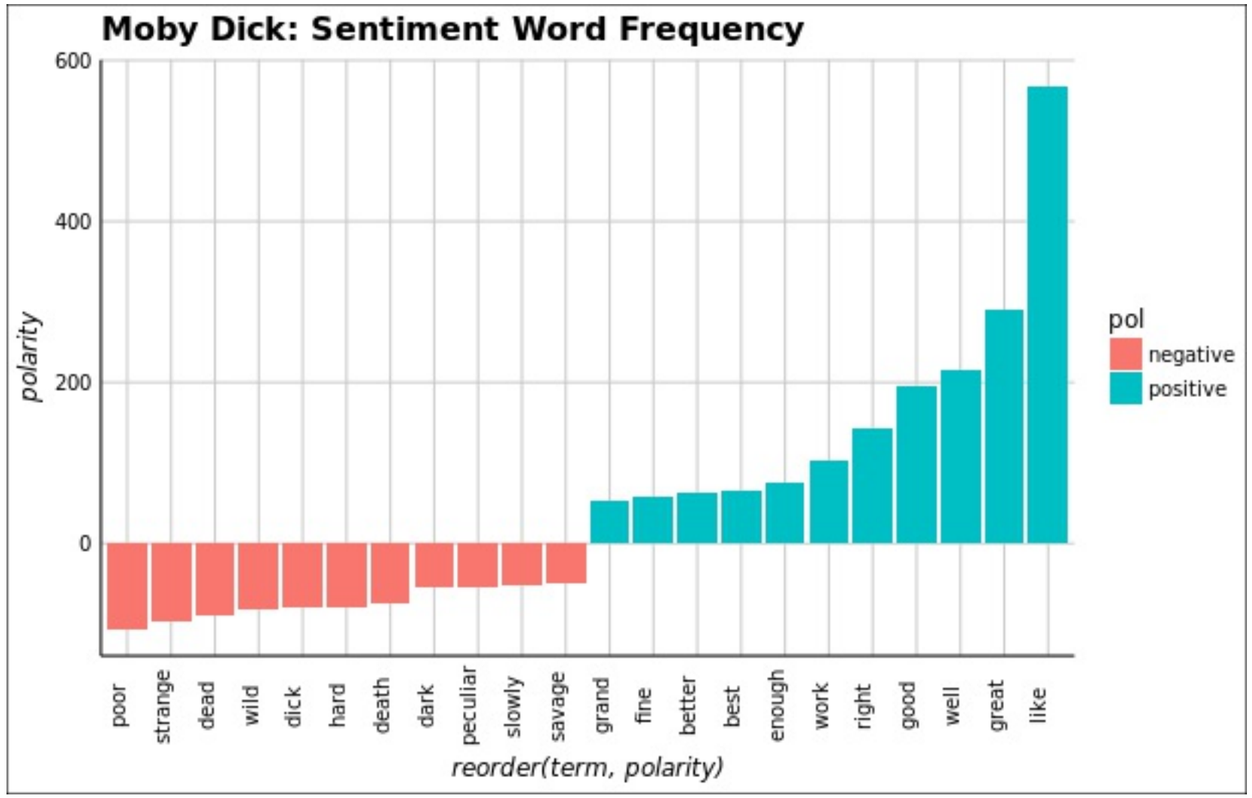
- Avoid word clouds

Tracking Sentiment over Time

Sentiment Timeline - is a way of displaying sentiment values in chronological order. It is typically a graphic design showing time periods, such as months, as the X axis and the sentiment values as Y axis values either as a line or series of bars.



Simple Frequency Analysis



ggplot2 is a popular library based on the "grammar of graphics" for constructing visuals in R.

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Let's practice!

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Introspection using sentiment analysis

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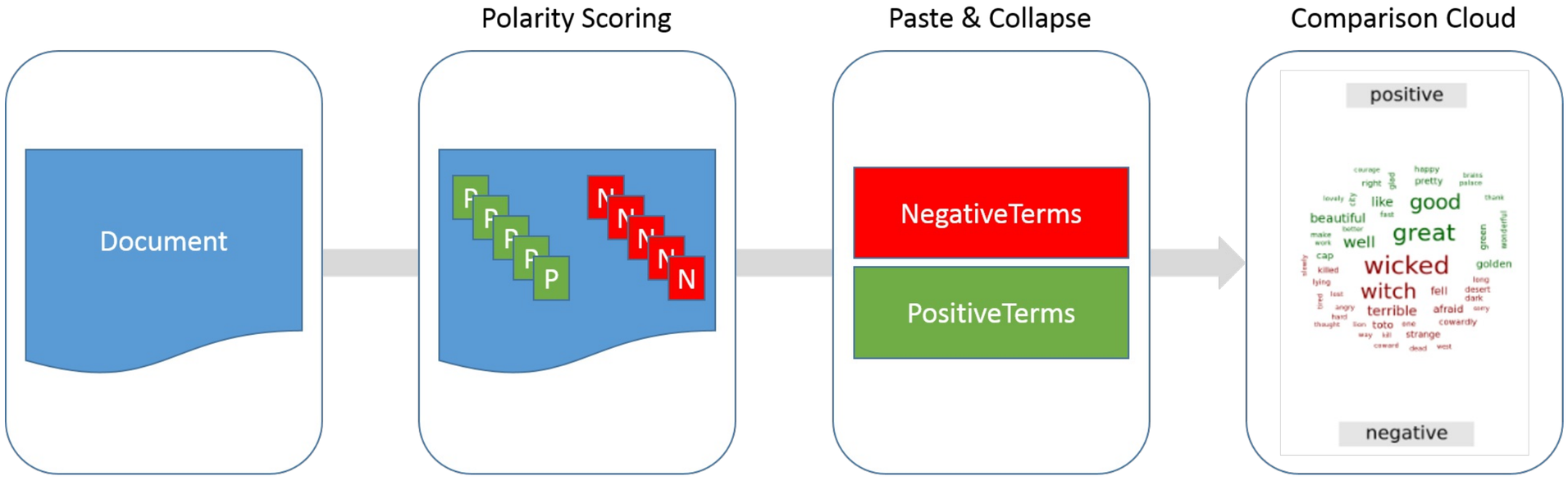
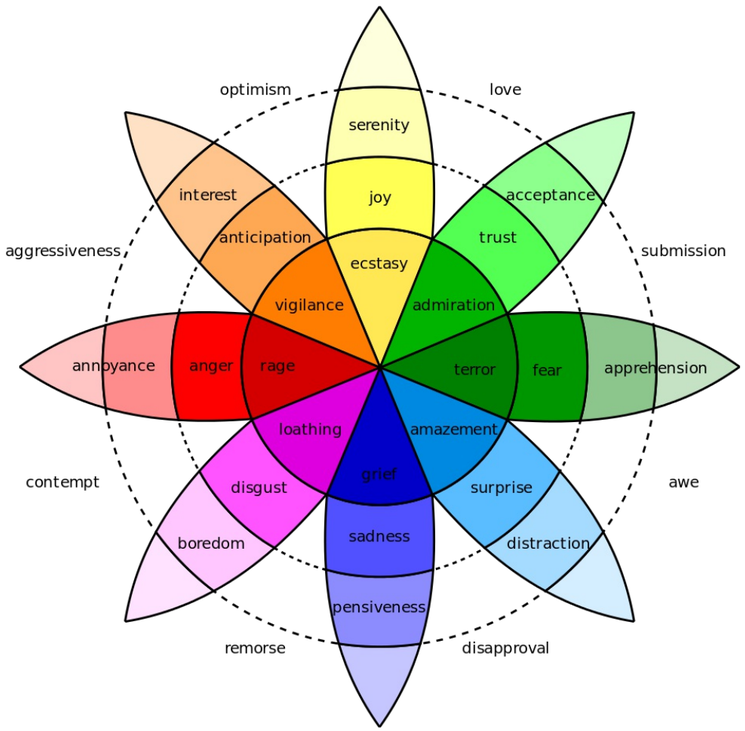
Qdap's Polarity for Subsetting a Corpora

```
> library(qdap)
> polarity(text.var, grouping.var = NULL)
```



Comparing frequent words in Plutchik's Framework



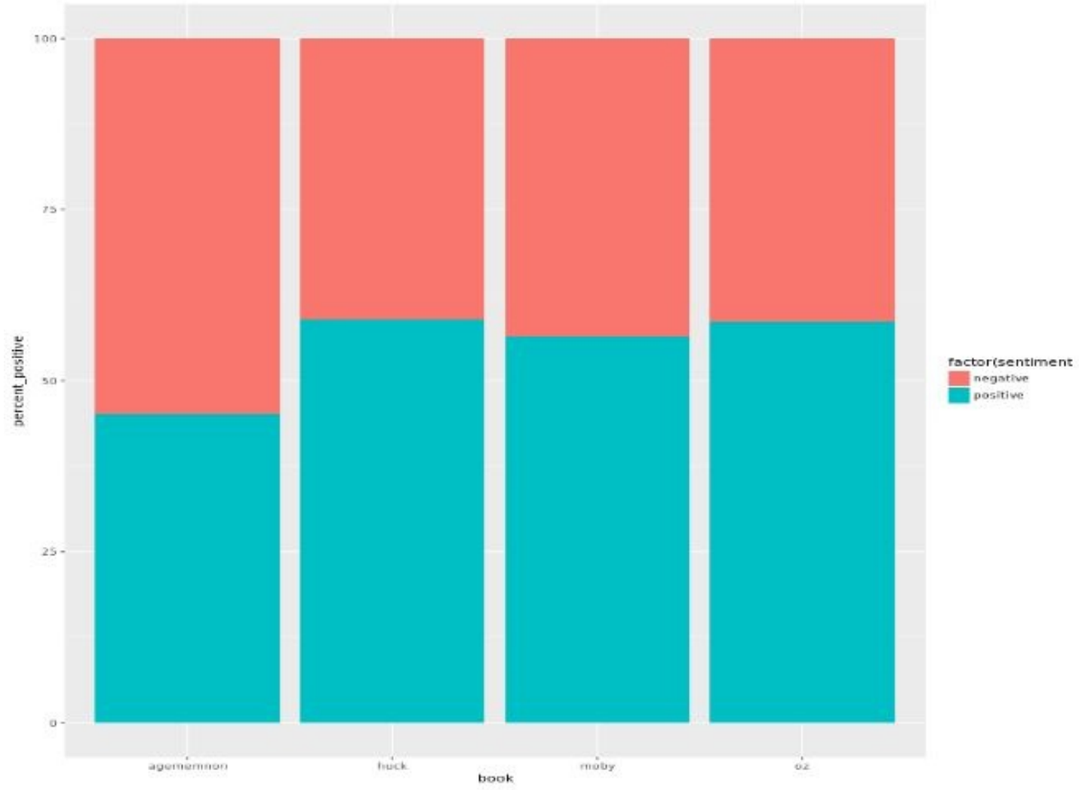
Where's Waldo? Where isn't Waldo?

```
> x <- c("Nicole", "Nick", "Waldo")
> grep("Waldo", x)
[1] 3

> grepl("Waldo", x)
[1] FALSE FALSE  TRUE

> !grepl("Waldo", x)
[1] TRUE  TRUE FALSE
```

Adding an "or" operator

```
> x <- c("Nicole", "Nick", "Waldo")
> grepl("Waldo|Nicole", x)
[1] TRUE FALSE  TRUE

> !grepl("Waldo|Nicole", x)
[1] FALSE  TRUE FALSE
```

Stacked comparisons for polarity mixture



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Interpreting a kernel density, box plots & radar charts

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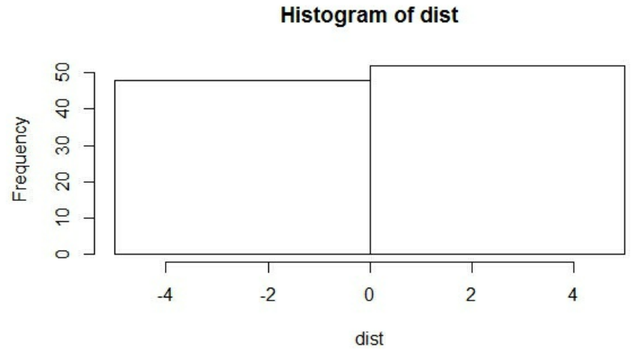
More Visualizations

- Kernel Density plot
- Box plot
- Radar Chart
- Treemap

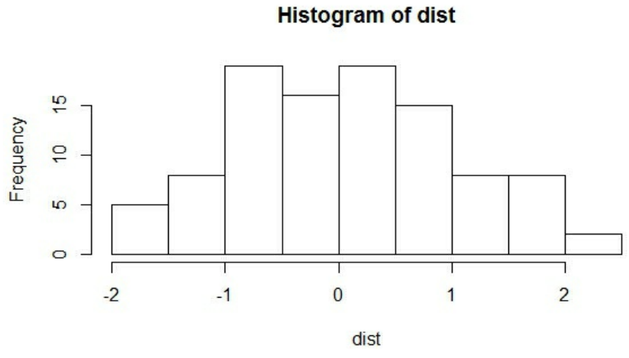
Kernel Density Plots Vs Histogram

```
> dist <- rnorm(100,
+               mean = 0,
+               sd = 1)
```

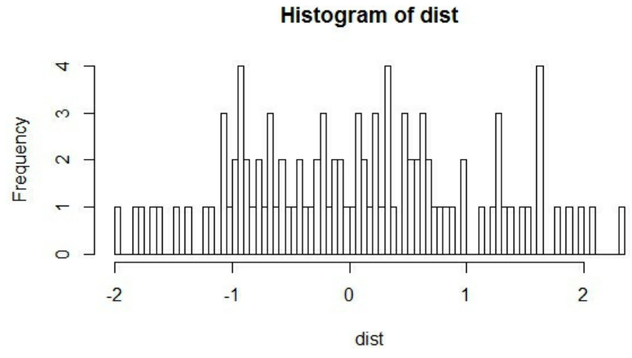
```
> hist(dist, breaks = 1)
```




```
> hist(dist, breaks = 10)
```

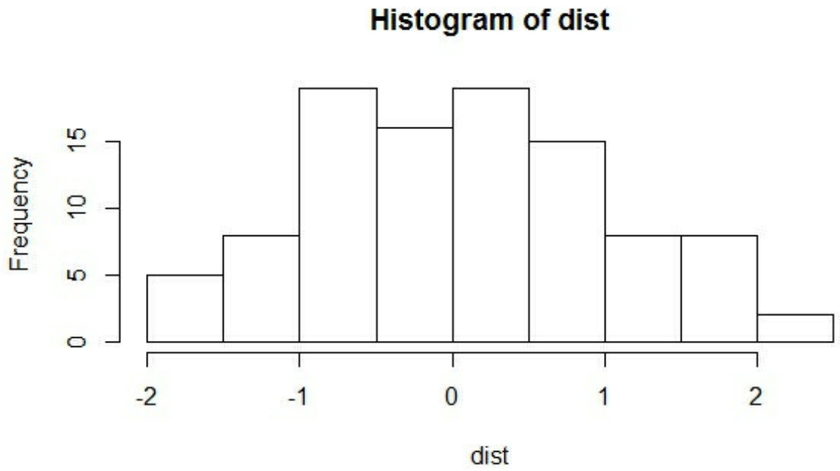



```
> hist(dist, breaks = 100)
```

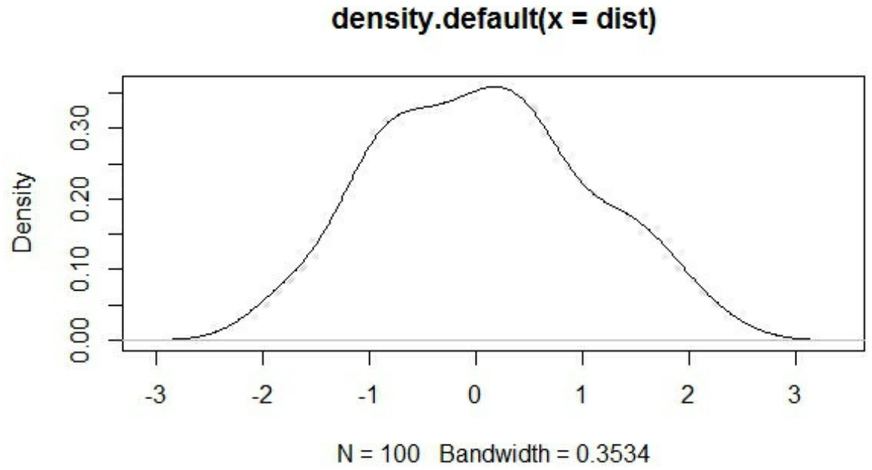


Kernel Density Plots Vs Histogram

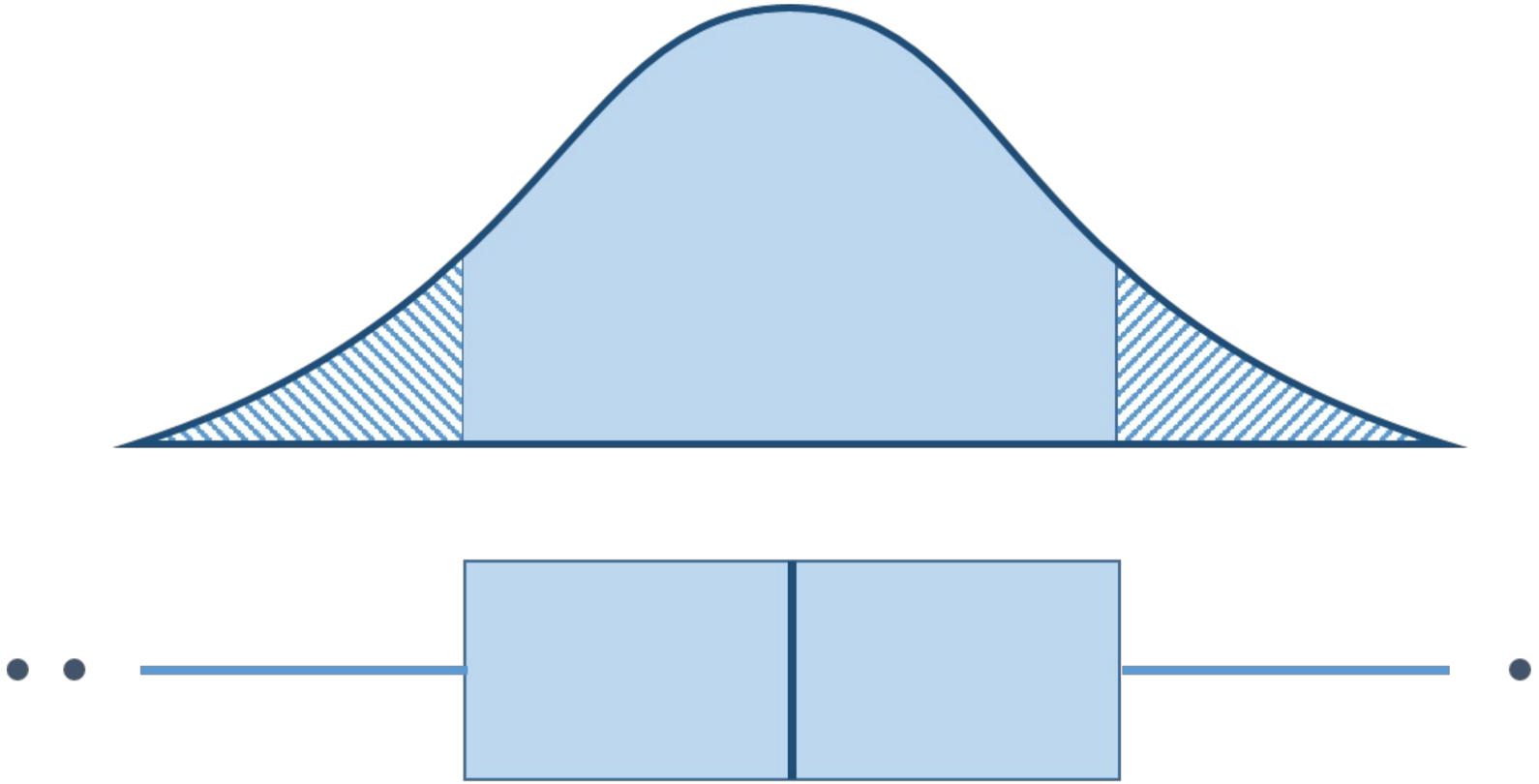
```
> dist <- rnorm(100,
+               mean = 0,
+               sd = 1)
> hist(dist, breaks = 10)
```



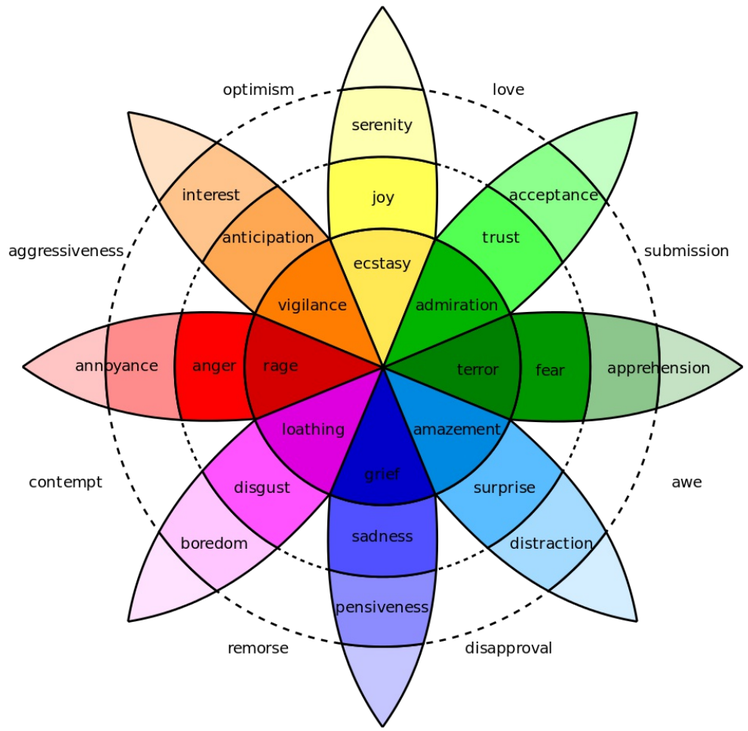

```
> d_curve <- density(dist)
> plot(d_curve)
```

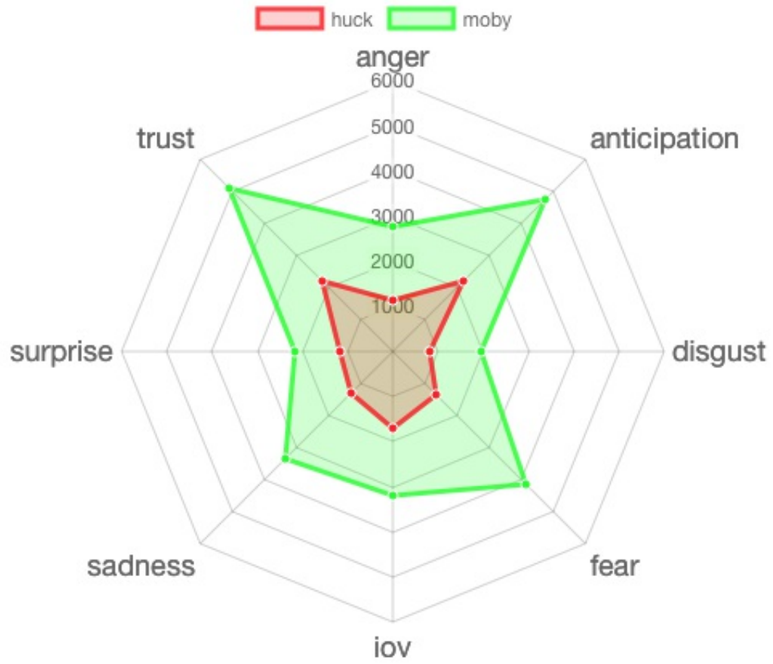


Box Plot

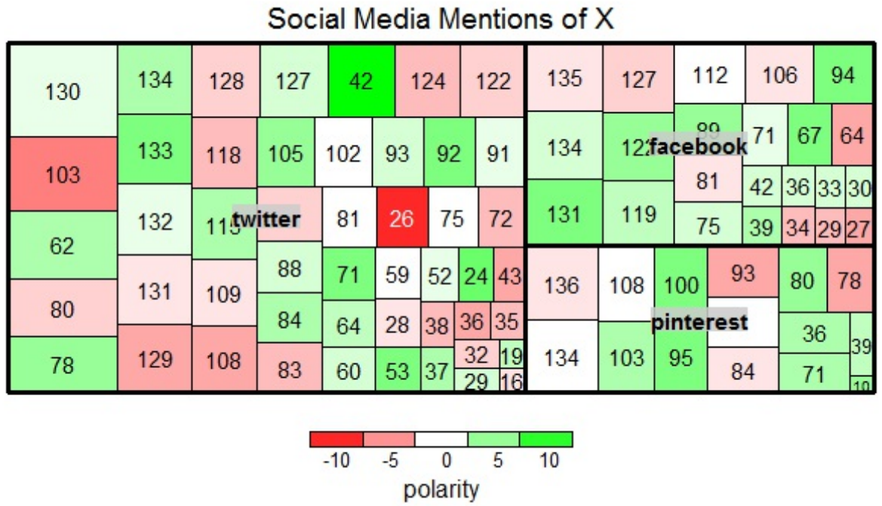


Radar Wheel of Emotion





Treemaps



- Each block represents a data point like a row
- Each block's size is dictated by another data dimension
- Each block is colored according to another data dimension
- Blocks are arranged into like groups using another data dimension

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