

Visualization

- Main goal is to tell the story (data + model)
- Is the story clear?
- Are the data clear?
- Asking "How can I make the story or data clear?" is more useful than asking "What type of plot should I make?"
- The elements of the grammar help with this perspective

Marks

Points



Lines



Areas



Channels

Position

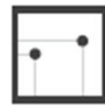
→ Horizontal



→ Vertical



→ Both



Color



Shape



Tilt



Size

→ Length



→ Area



→ Volume



Combining

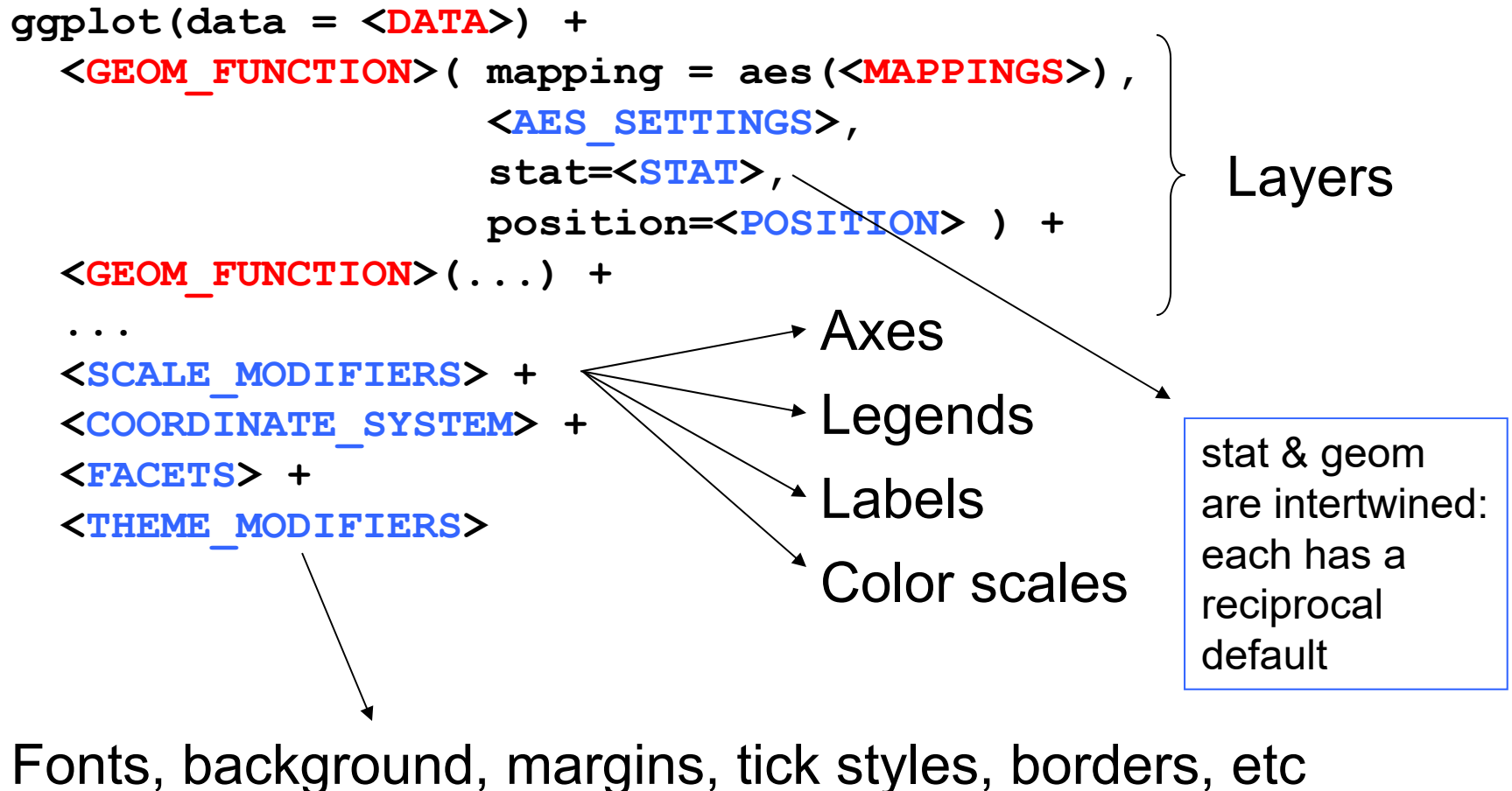


Summary Wickham paper

- Geom (geometric object) : points, lines, polygons, ...
- Aesthetic: aes: x, y, shape, color. How data are mapped to aes of geom.
- Scales: one per aes
- Statistics
- Coordinate system (one per plot)
- Annotations
- Facets

Layer

ggplot template



Cheatsheet: <https://www.rstudio.com/resources/cheatsheets> (visualization)

ggplot inheritance

```
ggplot() +  
  geom_point(data=mpg, mapping=aes(x=displ, y=hwy)) +  
  geom_smooth(data=mpg, mapping=aes(x=displ, y=hwy))
```

```
ggplot(data=mpg, mapping=aes(x=displ, y=hwy)) +  
  geom_point() +  
  geom_smooth()
```

layers inherit

