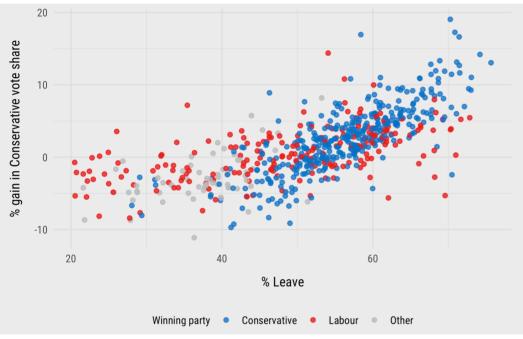


plot grammar -> ggplot2 spec

data types, channels, marks

```
leave_hanretty: ratio
con_1719: ratio
leave_hanretty -> x-position
con_1719 -> y-position
mark -> geom_point
```

```
data_ge %>%
  ggplot(data=.) +
  geom_point(
    mapping=
     aes(
          x=leave_hanretty,
          y=con_1719
    )
)
```



```
leave_hanretty: ratio
con_1719: natio
winning_party: nominal
leave_hanretty -> x-position
con_1719 -> y-position
winning_party -> colour
mark -> geom_point
```

```
data_ge %>%
  ggplot(data=.) +
  geom_point(
    mapping=
    aes(
         x=leave_hanretty,
         y=con_1719,
         colour=winning_party
    )
)
```

```
20

10

20

40

Keave

Flipped Lab-to-Con
FALSE
TRUE

Data: Published by House of Commons Library, accessed via parlitools package
```

```
leave_hanretty: ratio
con_1719: ratio
winning_party: nominal
flipped: ordinal
leave_hanretty -> x-position
con_1719 -> y-position
winning_party -> colour
flipped -> alpha
mark -> geom_point
```

```
data_ge %>%
  ggplot(data=.) +
  geom_point(
    mapping=
    aes(
        x=leave_hanretty,
        y=con_1719,
        colour=winning_party,
        alpha=flipped
    )
)
```