car_emissions

2025-03-03

```r
carData <- read_csv("carData.csv")
```

```r
Yugo_emissions <- carData |>
  select(day, co, car, dev) |>
  mutate(dev = ifelse(dev > 0, "Yes", "No")) |>
  filter(car == "Yugo") |>
  group_by(day, dev) |>
  summarise(avg_emission = mean(co, na.rm = TRUE))

Yugo_Co <- ggplot(Yugo_emissions, aes(x = day, y = avg_emission, colour = dev, group = dev))
  geom_line(size = 1.5) +
  geom_point(size = 3) +
  scale_color_manual(values = c("Yes" = "orange", "No" = "blue")) +
  labs(
    title = "Average Yugo Co Emissions Over Time",
    x = "Day of Observation",
    y = "Avg CO Emissions (pct of volume)",
    colour = "Device Installed?"
  ) +
  theme_light(base_size = 14)
```

```
Warning: Using `size` aesthetic for lines was deprecated in ggplot2 3.4.0.
i Please use `linewidth` instead.
```

```r
Bentley_emissions <- carData |>
  select(day, co, car, dev) |>
  mutate(dev = ifelse(dev > 0, "Yes", "No")) |>
  filter(car == "Bentley") |>
  group_by(day, dev) |>
```

```r
  summarise(avg_emission = mean(co, na.rm = TRUE))

Bentley_Co <- ggplot(Bentley_emissions, aes(x = day, y = avg_emission, colour = dev, group =
  geom_line(size = 1.5) +
  geom_point(size = 3) +
  scale_color_manual(values = c("Yes" = "orange", "No" = "blue")) +
  labs(
    title = "Average Bentley Co Emissions Over Time",
    x = "Day of Observation",
    y = "Avg CO Emissions (pct of volume)",
    colour = "Device Installed?"
  ) +
  theme_light(base_size = 14)

#graphs for Co2 Emissions
Yugo_Data <- carData |>
  select(day, co2, car, dev) |>
  mutate(dev = ifelse(dev > 0, "Yes", "No")) |>
  filter(car == "Yugo") |>
  group_by(day, dev) |>
  summarise(Avg_emission = mean(co2, na.rm = TRUE))

Yugo_Co2 <- ggplot(Yugo_Data, aes(x = day, y = Avg_emission, colour = dev, group = dev)) +
  geom_line(size = 1.5) +
  geom_point(size = 3) +
  scale_color_manual(values = c("Yes" = "orange", "No" = "blue")) +
  labs(
    title = "Average Yugo Co2 Emissions Over Time",
    x = "Day of Observation",
    y = "Avg Co2 Emissions (pct of volume)",
    colour = "Device Installed?") +
  theme_light(base_size = 14)

Bentley_Data <- carData |>
  select(day, co2, car, dev) |>
  mutate(dev = ifelse(dev > 0, "Yes", "No")) |>
  filter(car == "Bentley") |>
  group_by(day, dev) |>
  summarise(Avg_emission = mean(co2, na.rm = TRUE))

Bentley_Co2 <- ggplot(Bentley_Data, aes(x = day, y = Avg_emission, colour = dev, group = dev)
  geom_line(size = 1.5) +
```
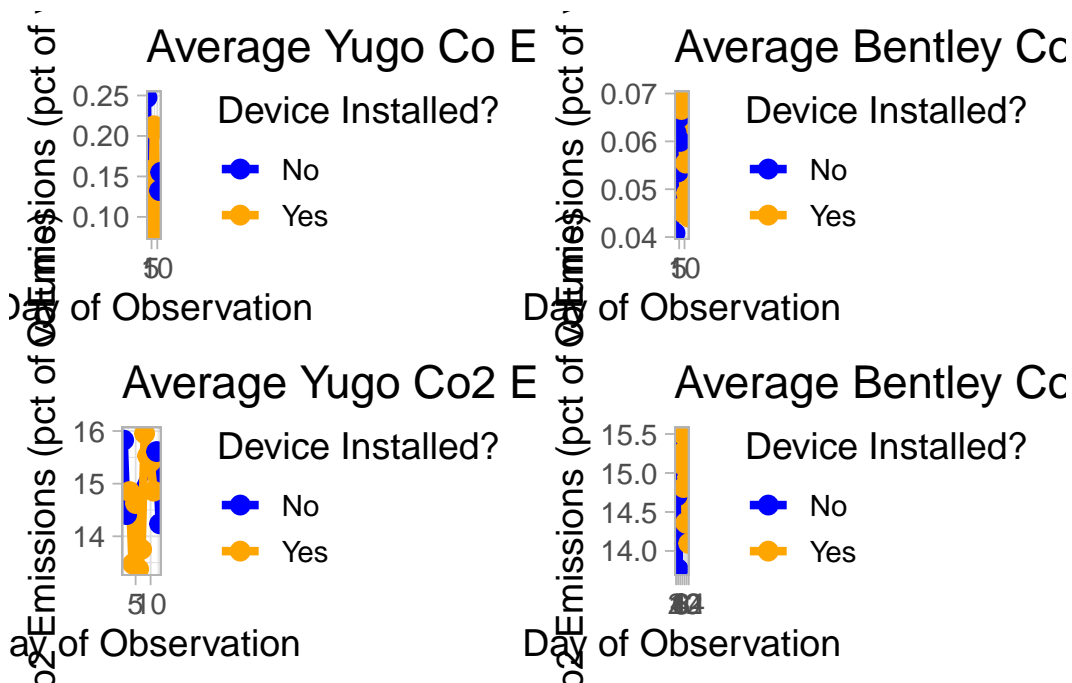
```
  geom_point(size = 3) +
  scale_x_continuous(breaks = seq(0,14, by = 2)) +
  scale_color_manual(values = c("Yes" = "orange", "No" = "blue")) +
  labs(
    title = "Average Bentley Co2 Emissions Over Time",
    x = "Day of Observation",
    y = "Avg Co2 Emissions (pct of volume)",
    colour = "Device Installed?") +
  theme_light(base_size = 14)

grid.arrange(Yugo_Co, Bentley_Co, Yugo_Co2, Bentley_Co2, ncol = 2, nrow = 2)
```



```
Caption <- ""
```