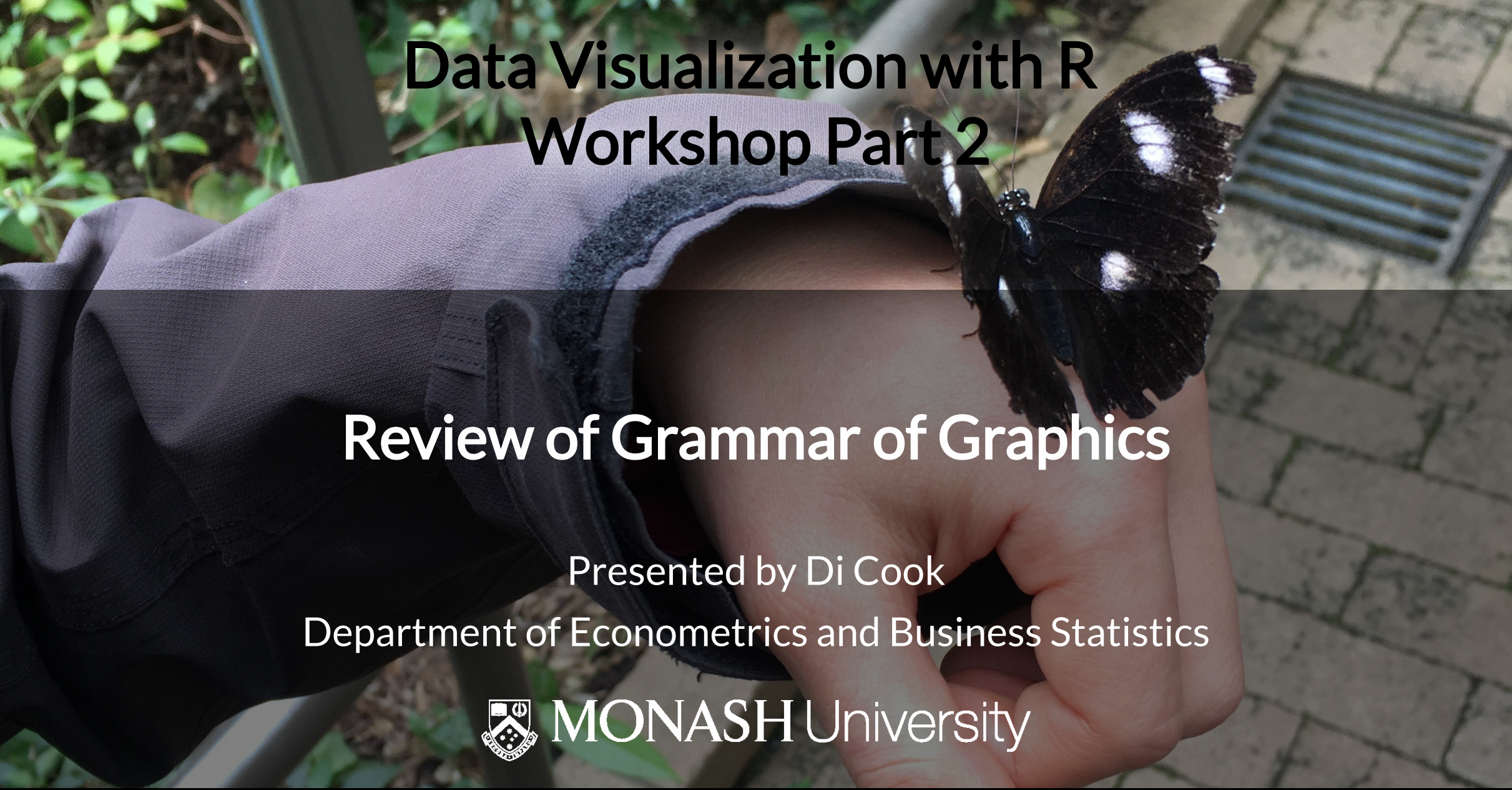


Data Visualization with R Workshop Part 2

Review of Grammar of Graphics

Presented by Di Cook

Department of Econometrics and Business Statistics

MONASH University

6th Dec 2021 @ Statistical Society of Australia NSW Branch | Zoom

demo data for today

Tuberculosis incidence

The TB data is from the WHO.

Show 10 entries

Search:

	country	iso3	year	new_sp_m04	new_sp_m514	new_sp_m014	new_sp_m1524	new_sp_m2534	new_sp_m
1	Australia	AUS	1980						
2	Australia	AUS	1981						
3	Australia	AUS	1982						
4	Australia	AUS	1983						
5	Australia	AUS	1984						
6	Australia	AUS	1985						
7	Australia	AUS	1986						
8	Australia	AUS	1987						
9	Australia	AUS	1988						
10	Australia	AUS	1989						

Showing 1 to 10 of 78 entries

Previous 1 2 3 4 5 ... 8 Next

- Is the data in tidy form?
- What are the variables in this data?
- How many variables are there? country (name, iso3), year, sex, age

Reshape your data into tidy form so that it is easy, and clear how the variables are maped into elements of the plot.

Tidying the data

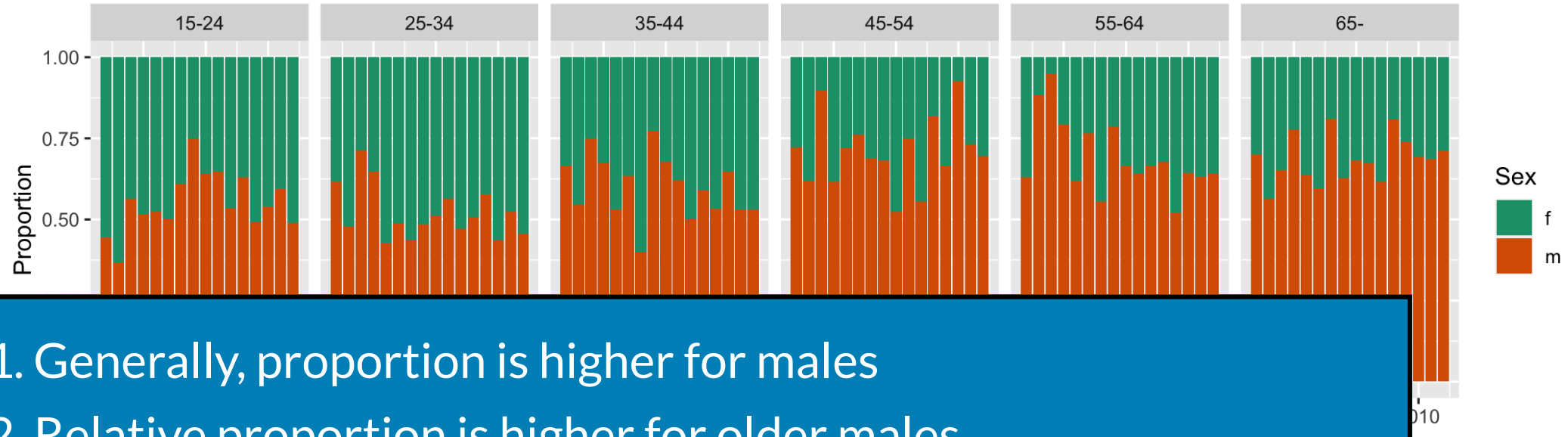
Show 10 entries Search:

	country	year	age_group	sex	count
1	Australia	1997	15-24	m	8
2	Australia	1997	25-34	m	24
3	Australia	1997	35-44	m	18
4	Australia	1997	45-54	m	13
5	Australia	1997	55-64	m	17
6	Australia	1997	65-	m	28
7	Australia	1997	15-24	f	10
8	Australia	1997	25-34	f	15
9	Australia	1997	35-44	f	9
10	Australia	1997	45-54	f	5

Showing 1 to 10 of 192 entries

Previous 1 2 3 4 5 ... 20 Next

```r
ggplot(tb_oz, aes(x = year, y = count, fill = sex)) +
  geom_bar(stat = "identity", position = "fill") +
  facet_wrap(~age_group, ncol = 6) +
  scale_fill_brewer(name = "Sex", palette = "Dark2") +
  ylab("Proportion")
```

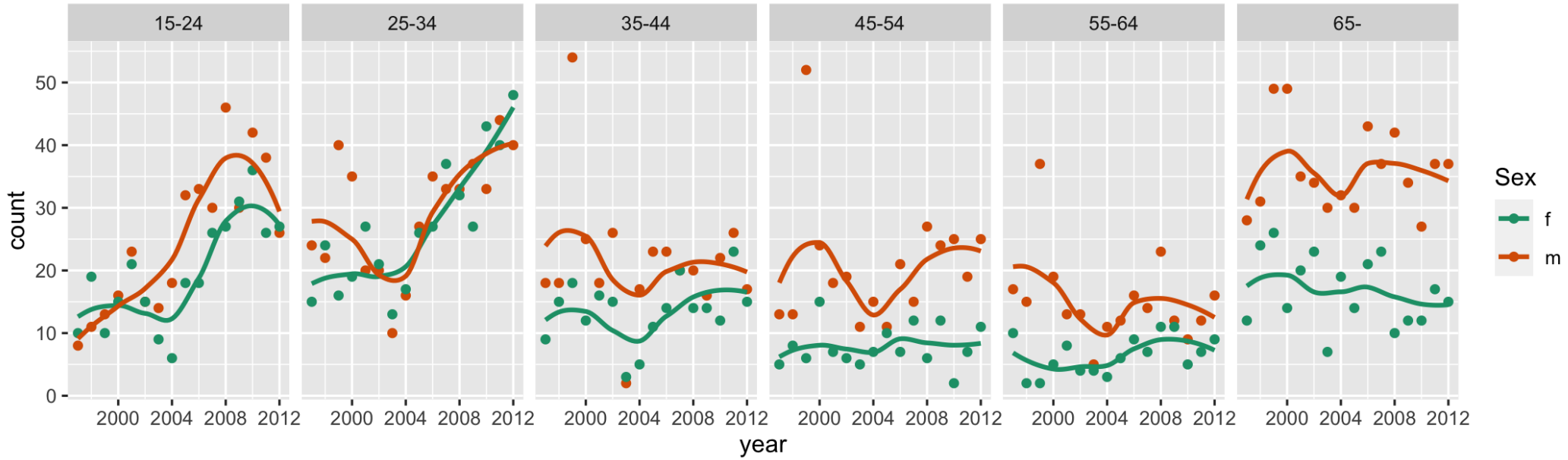


1. Generally, proportion is higher for males
2. Relative proportion is higher for older males
3. Quite variable proportions from year to year

What don't we learn from this plot?

Information about counts is lost

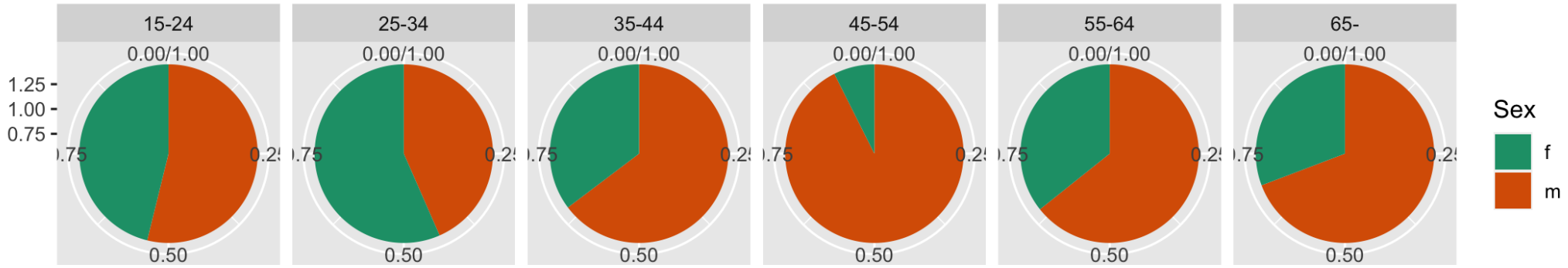
```
ggplot(tb_oz, aes(x = year, y = count, colour = sex)) +
  geom_point() +
  geom_smooth(se = F) +
  facet_wrap(~age_group, ncol = 6) +
  scale_colour_brewer(name = "Sex", palette = "Dark2")
```



What do we learn?

- Generally, counts are quite varied from year to year, but relatively stable
- Increasing trend in counts for both males and females under 35
- Counts for males almost always higher than females

```r
tb_oz %>%
  filter(year == 2010) %>%
  ggplot(aes(x = 1, y = count, fill = sex)) +
    geom_bar(stat = "identity", position = "fill") +
    facet_wrap(~age_group, ncol = 6) +
    scale_fill_brewer(name = "Sex", palette = "Dark2") +
    xlab("") + ylab("") +
    coord_polar(theta = "y")
```



What do we learn?

In 2010,

- there were almost no 45-54 year old women with TB
- there were more 24-35 year old women with TB than men
- generally more males than females had TB

How many plots should you usually do?

Lots! In order to understand your data, look at it in many different ways. Like you might do to explore some new object.

</> Open `part2-exercise-01.Rmd`

15:00

Session Information

```
devtools::session_info()
```

```
## ─ Session info  🏴  🦵  🤾  ──────────────────────────────────────────────
##  hash: flag: St. Lucia, leg: medium skin tone, person playing handball: medium skin ton
##
##  setting  value
##  version  R version 4.1.2 (2021-11-01)
##  os       macOS Big Sur 10.16
##  system   x86_64, darwin17.0
##  ui       X11
##  language (EN)
##  collate  en_AU.UTF-8
##  ctype    en_AU.UTF-8
##  tz       Australia/Melbourne
##  date     2021-11-30
##  pandoc   2.11.4 @ /Applications/RStudio.app/Contents/MacOS/pandoc/ (via rmarkdown)
```