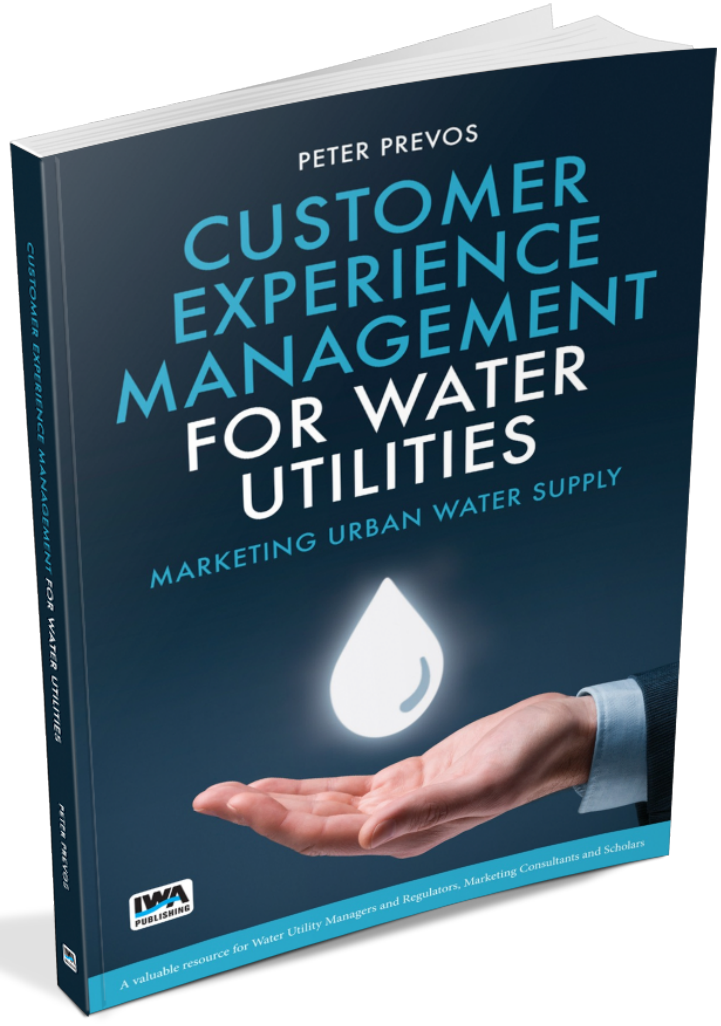
R^4H_2O: R for Water Professionals: Session 3

Dr Peter Prevos

Session 3 Program

- Recap
- Data cleaning
- Exploring customer perception



Recap

- Read CSV file
- Filter data
- Group data
- Arithmetic
- Descriptive statistics
- Visualise data
- Export to PowerPoint

Cleaning Data

- Go to the the `casestudy2` folder
- Open the `chapter_08.R` file
- Cleaning data with code

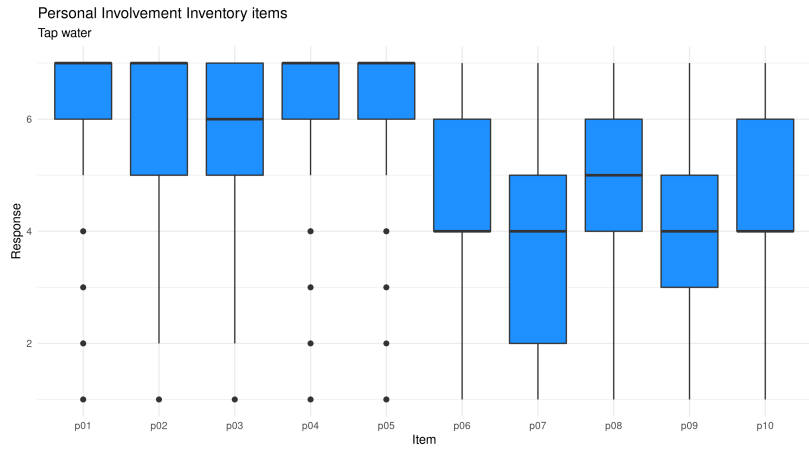


Figure 1: Tap water consumer involvement.

Joining Data

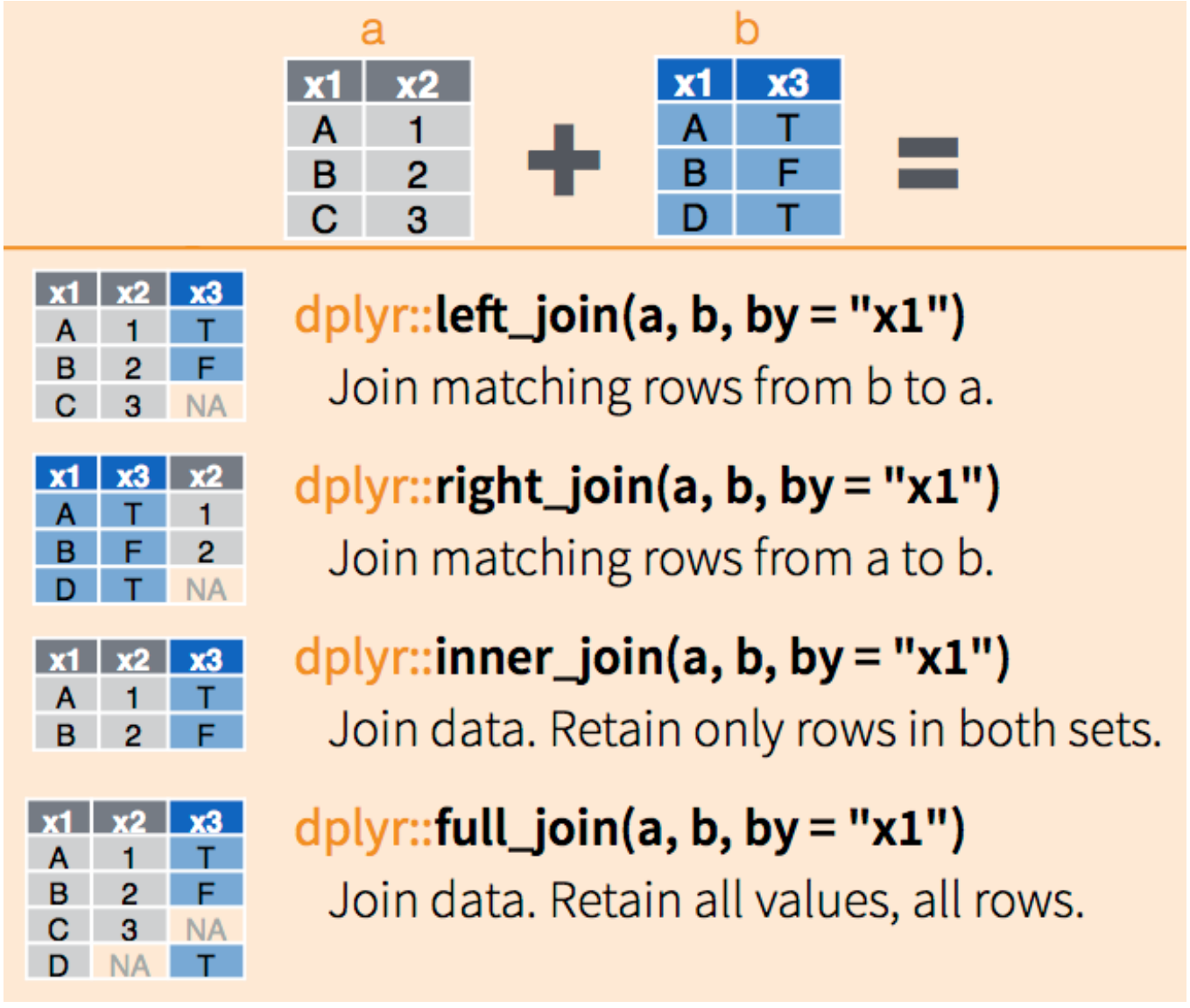


Figure 2: Tidyverse functions to join data.

Pipes

```
customers <- rawdata[-1, ] %>%
    type_convert() %>%
    filter(is.na(term)) %>%
    left_join(cities) %>%
    select(c(-2:-20, -33)) %>%
    rename(survey_id = V1)
```

Figure 3: René Magritte (1929), *The Treachery of Images*.

Consumer Involvement

1. Cognitive involvement (importance, relevance, meaning, value and need)
2. Affective involvement (involvement, fascination, appeal, excitement and interest)

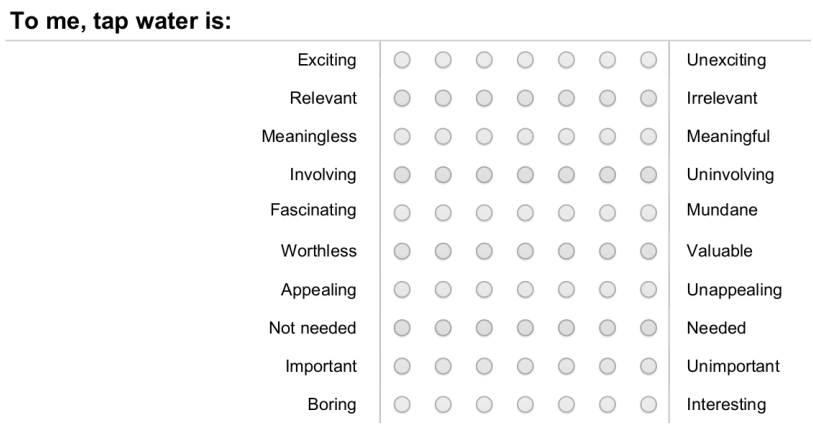


Figure 4: Personal Involvement Index differential semantic scale.

Pivoting Data

Sample	Date	Turbidity	THM	E. coli
S1234	13/12/2017	0.05	0.12	0
S1235	14/12/2017	0.1	0.07	
S1236	15/12/2017	0.23	0.21	0

Date	Sample	Analyte	Result	Unit
13/12/2017	S1234	Turbidity	0.05	mg/l
13/12/2017	S1234	THM	0.12	mg/l
13/12/2017	S1234	E. coli	0	orgs/100ml
14/12/2017	S1235	Turbidity	0.1	mg/l
14/12/2017	S1235	THM	0.07	mg/l
15/12/2017	S1236	Turbidity	0.23	mg/l
15/12/2017	S1236	THM	0.21	mg/l
15/12/2017	S1236	E. coli	0	orgs/100ml

Figure 5: `pivot_longer(lab_wide, cols = -1:-2, names_to = "Analyte", values_to = "Result")`