

THE MELBOURNE DECONSTRUCTION

A Springboard's *Introduction to Data Science* Capstone Project

Introducing the problem

- At my local coffee shop, are **sales of drinks** influenced by **weather**?
- But, *how to define drinks*?
 - If it's a latte, do we code "1" for "latte" and 0 for other variables?
 - If it's an americano, do we code "1" for "americano"?..
- What's the use in knowing if *high pressure* is associated with *more americanos sold*?
- There must be a more useful approach...

The Melbourne Deconstruction

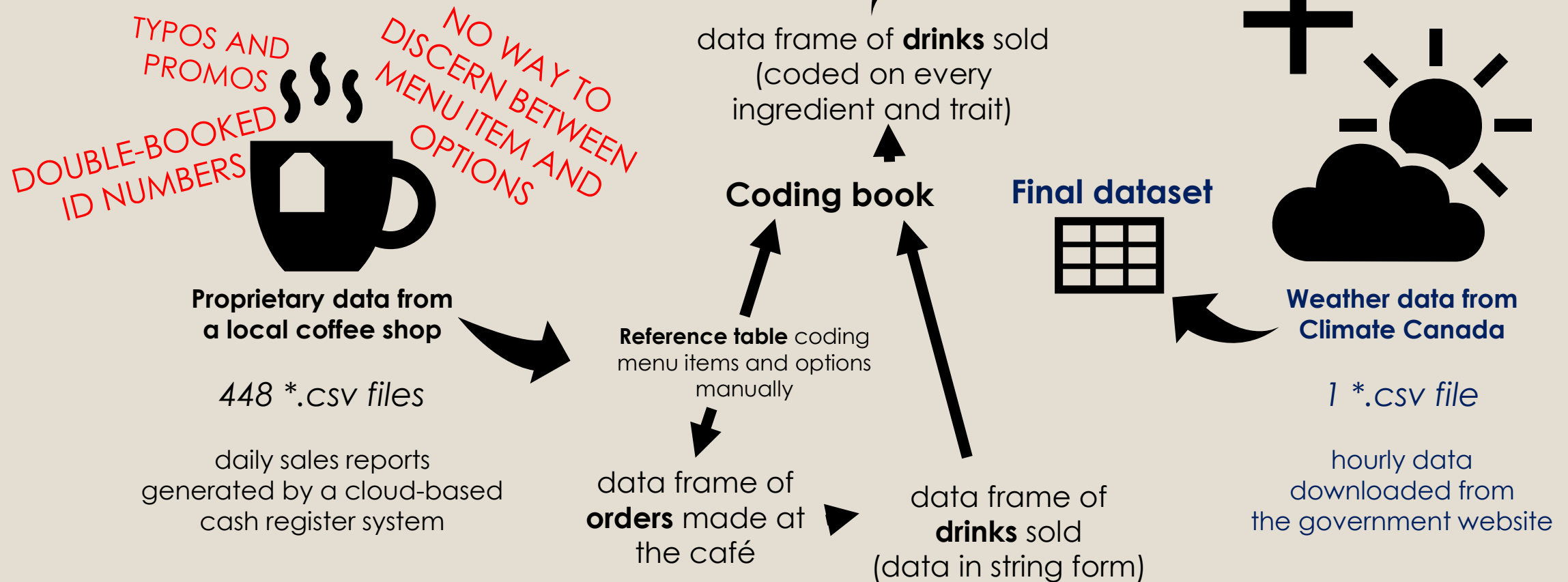
A couple of years ago, Melbourne baristas decided to serve a *long macchiato* like this:



The Melbourne Deconstruction

- It's no way to serve a drink...
- but it's definitely useful for data science.
- **Coding drinks according to their ingredients and traits** (not their actual names) is more representative of...
 - A café's day-to-day logistics
 - The highly customizable nature of the product

Data wrangling

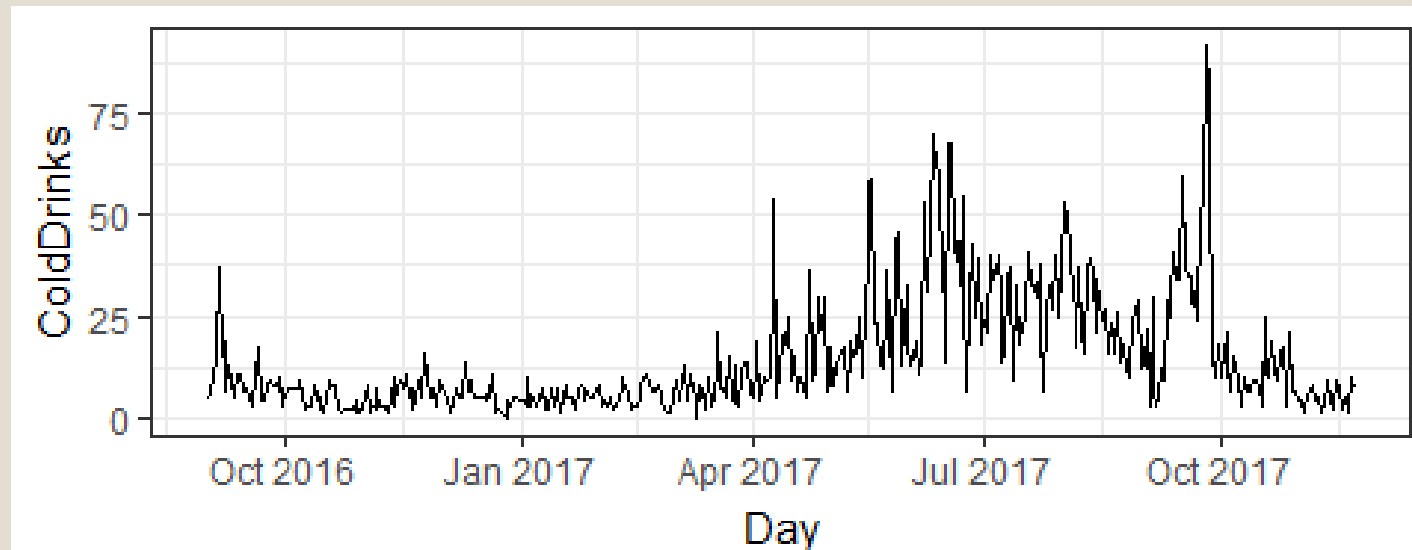


Variables in the dataset

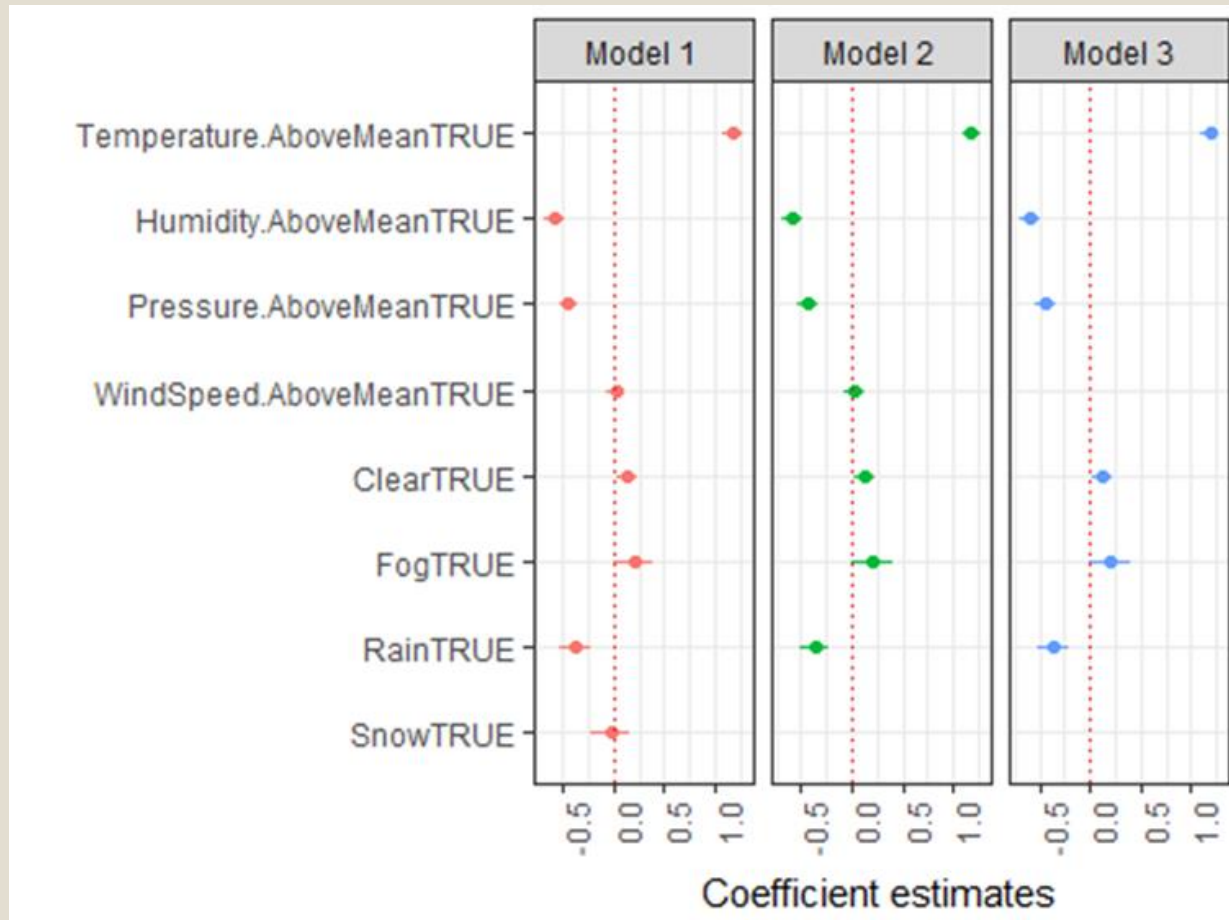
Dependent	Independent
<p>Content (ingredients):</p> <ul style="list-style-type: none">• Espresso• Tea• Regular milk• Specialty milk• Chocolate• Water• Seasonal ingredients• Juice <p>Traits:</p> <ul style="list-style-type: none">• Cold• Froth• High in sugar• High in caffeine	<ul style="list-style-type: none">• Temperature• Dew Point temperature• Relative humidity• Wind speed• Pressure• Atmospheric phenomena and sky conditions:<ul style="list-style-type: none">• Rain• Snow• Clear sky• Fog

Statistical analysis: sales of cold drinks

Hypothesis: higher numbers of cold drinks sold coincide with *higher temperatures, better visibility* (manifested by *clear skies and lack of fog*), and *lack of precipitation*.



Multiple linear regression



Results

- Higher numbers of cold drinks sold coincide with above-average temperatures.
- However, above-average pressure and humidity are both associated with lower numbers of cold drinks sold.
- Finally, visibility, measured by the presence of clear sky or fog, does not appear to be a factor in sales of cold drinks.

Recommendations

1. **Create a weather trigger-based marketing strategy for cold drinks.** The trigger should include above-average temperature, humidity and pressure—the latter coincide with lower sales of cold drinks.
2. **Use in-store displays to emphasize that cold drink options are available both “to go” and “for here.”** Do not assume that cold drinks are only suited for weather that lends itself nicely to walking around with an iced latte in hand.