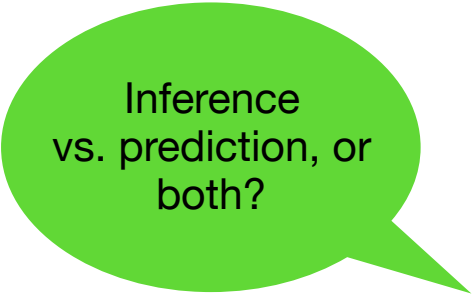


Key themes and summary of issues

- Inference and model purpose

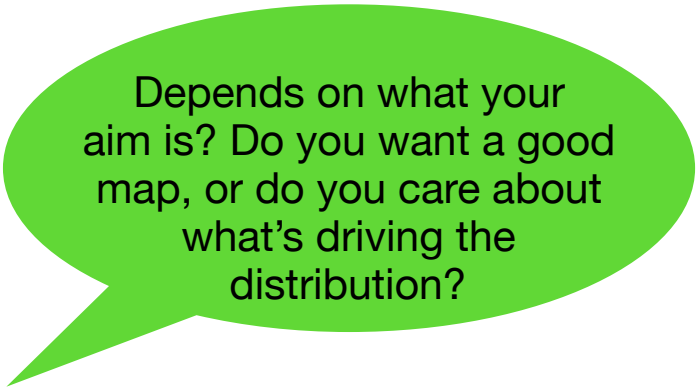


A green speech bubble with a tail pointing towards the bottom right corner. Inside the bubble, the text "Inference vs. prediction, or both?" is written in a black, sans-serif font, centered horizontally and vertically.

Inference
vs. prediction, or
both?

**Fitting everything available
(SDM).**

**But also: dredging across
multiple models.**



Depends on what your aim is? Do you want a good map, or do you care about what's driving the distribution?

**Absence of well specified
a priori hypotheses: “let’s test this
too!” (Multiple models)**

Inference: Confirmatory vs. Exploratory Analysis

- Model purpose: “Good map”
== accurate (precise?)
predictions
- Dredging risks confirming a
‘bad map’, one that is false at
the level of application, and
hence does not generalise well.

- “What’s driving the distribution” == inductive reasoning.
- Exploratory goal: Build rich mental model and understand structure.

Key themes and summary of issues

— Inference and model purpose

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Inference: Confirmatory vs. Exploratory Analysis

- Problem occurs when we cast exploratory work as confirmatory: “the same behavior can be either EDA or p-hacking depending on how it is reported.” (Jebb *et al.*)
- “ “EDA as CDA” breaks the cardinal rule that a result cannot be discovered and validated using the same data.” (Jebb *et al.*)
- “Current practices with many journals that all but required a deductive approach have led to authors positioning papers as de- ductive even when the underlying research was not.” (Woo *et al.* 2017)

Key themes and summary of issues

— Inference and model purpose

Inference
vs. prediction, or
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Absence of well specified
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