

(Null) Hypothesis Testing

Ling250/450: Data Science for Linguistics

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 - Experimentalism deals with **evidence** for a claim, rather than proof
 - Acknowledges that there's **always uncertainty** in the process
 - A hypothesis has to be **falsifiable**: if it can't be shown to be wrong, it's **experimentally useless**

Statistical Hypotheses

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- **Research hypothesis:** clairvoyance/ESP is real, allowing people to "see" things that aren't physically present
- **Experiment:** 100 people guess the result of a coin flip from a separate room

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- The Null Hypothesis often represents a **simpler** or **less-informative** state of affairs than the actual hypothesis
- E.g. H_0 for the ESP experiment is "subjects will guess the coin flip according to **random chance**"

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"Null until proven otherwise"

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- The book uses the metaphor of a **legal trial**, where a defendant is presumed to be **innocent until proven guilty**

Aliens and the Null Hypothesis

