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Assessing evidence and uncertainty

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Propositions associated with the dissertation
Quantifying Evidence and Uncertainty: Informed Decision Making
in Drug Approval and Replication Target Selection
by
Merle-Marie Pittelkow

1. Treatment choices should be informed by good, scientific evidence.
- Chapter 2, Chapter 3, Chapter 4, and Chapter 5.
2. “*The p-value is an imperfect statistical summary index*” (Goodman & Royall, 1988) and Bayes Factors offer a valuable alternative to quantify statistical evidence.
- Chapter 2, Chapter 3, and Chapter 4.
3. If drugs are endorsed without adequate evidence for their efficacy, this should be communicated to patients.
- Chapter 2 and Chapter 3.
4. The current application of the life-cycle approach in drug endorsement leads to inadequate standards of evidence.
- Chapter 4.
5. Replication target selection should and *can* be streamlined.
- Chapter 5, Chapter 6, and Chapter 7.
6. Transparency is key in evaluating replication target selection procedures.
- Chapter 5, Chapter 6, Chapter 7, and Chapter 8.
7. Formal frameworks improve informed decision making while retaining the uniqueness of individual decisions.
- Chapter 5, Chapter 6, Chapter 7, and Chapter 8.
8. In practice, we need a simplistic, dichotomous answer to questions. (inspired by Izard et al., 2019).
9. “Es irrt aber, wer glaubt, daß Versuche, so klar sie auch gedacht waren immer das *richtige* Ergebnis gaben” p. 12, Fleck et al., 1980.