Heuristics and bias

Definition (Correctness)
A judgement is correct if it affirms a true proposition or denies a false one. An error in judgement occurs when a judgement is incorrect.

Definition (Heuristic)
A heuristic is a (simplified) method of making judgements.

Definition (Bias)
A bias is a systematic error in judgement.
Some heuristics and their biases

Heuristics and probability judgements:

- **availability** we judge events that come to mind more easily to be more likely; eg, it is easier to bring to mind memorable events (eg, terrorism), even if rare

- **representativeness** we use similarity to archetypes to make classification judgements; eg, shy people resemble (stereo-)typical librarians more than farmers

Heuristics often substitute ‘easier’ propositions:

“shy X more likely to be a librarian than a farmer” by “shyness more typical of librarians than farmers”

Cognitive biases
Representativeness and probability judgements

From Kahneman, *Thinking, Fast and Slow*.

An individual has been described by a neighbor as follows: “Steve is very shy and withdrawn, invariably helpful but with little interest in people or in the world of reality. A meek and tidy soul, he has a need for order and structure, and a passion for detail.”

*Is Steve more likely to be a librarian or a farmer?*

Kahneman attributes this to the *representativeness heuristic*

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**Decision-theoretic interpretation: Laplacian assumption**

Laplace: ignorance = equal probability

![Diagram showing the representativeness heuristic with two distributions labeled L for librarian and F for farmer.](image-url)