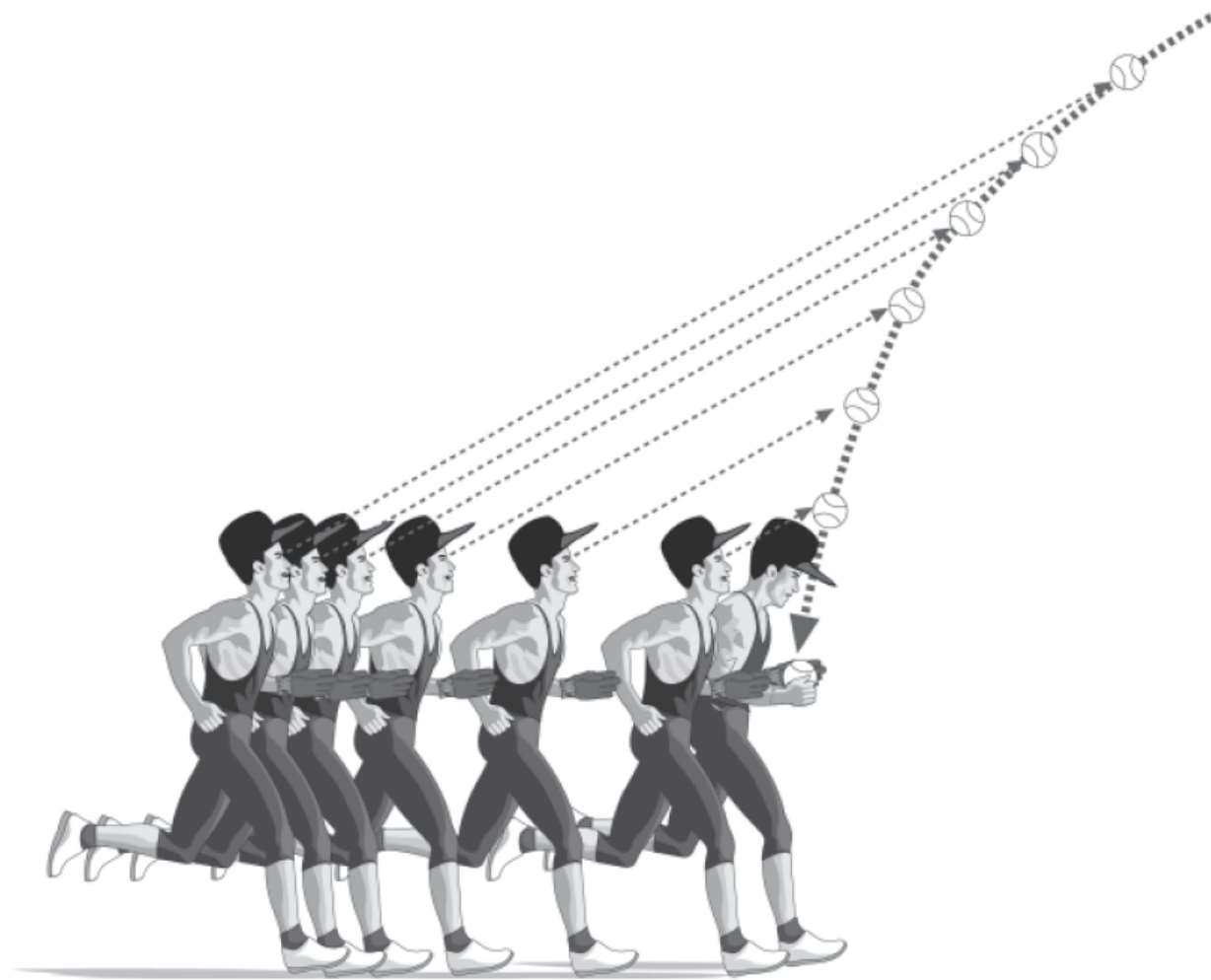


Gaze Heuristic



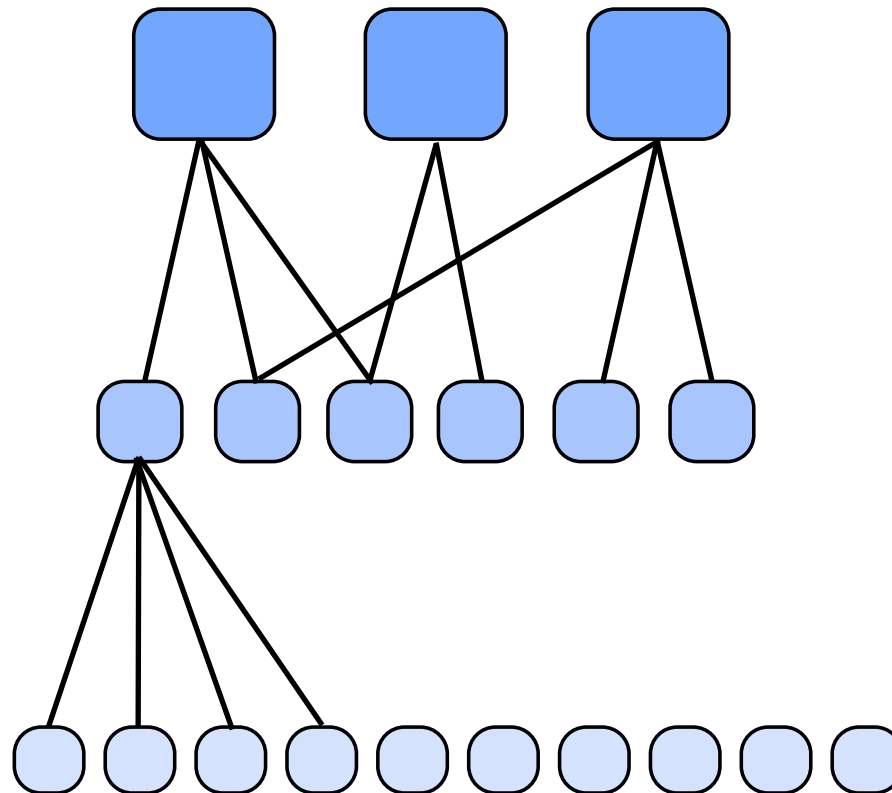
Gaze heuristic: Fixate your gaze on the ball, start running, and adjust your speed so that the angle of gaze remains constant.

Adaptive Toolbox

Heuristics

Building blocks

Evolved capacities



Quale città ha più abitanti: San Diego o San Antonio?

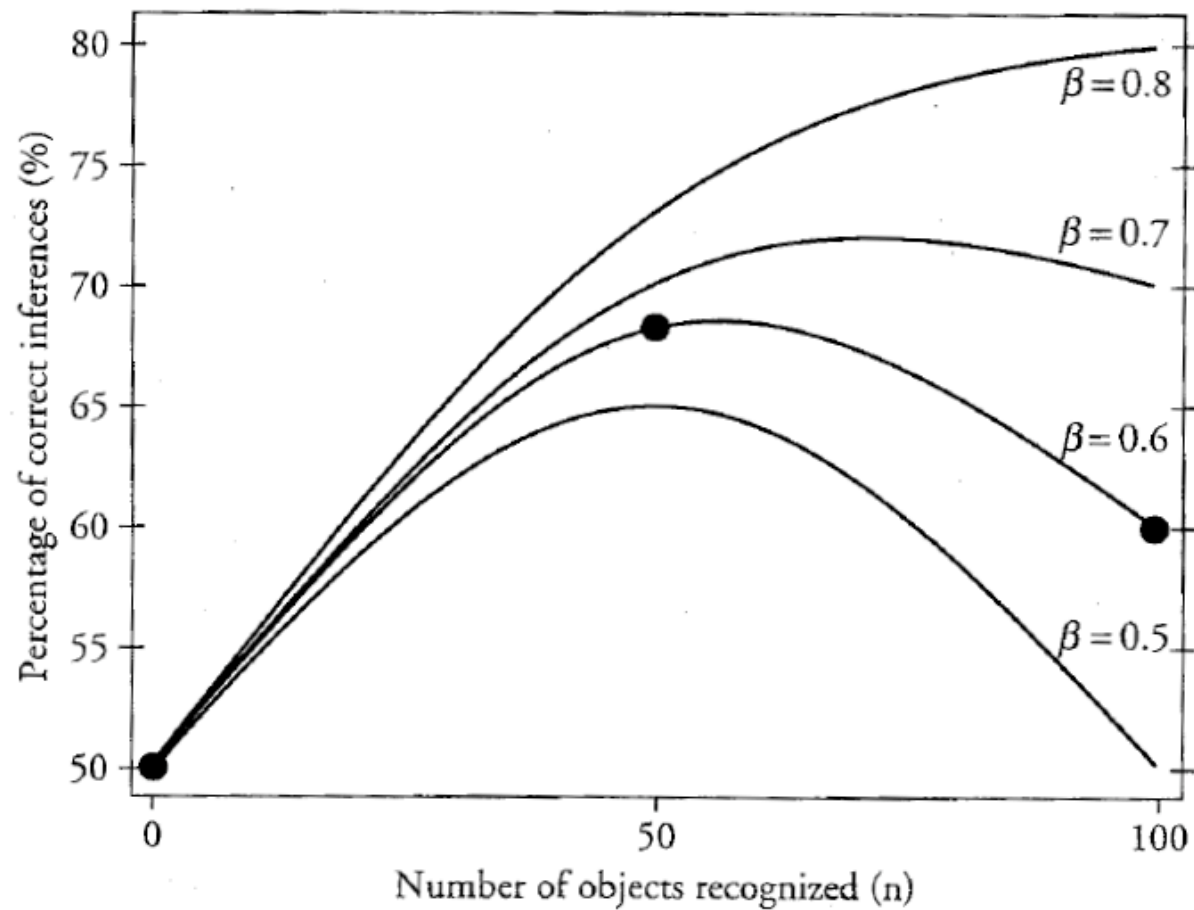
Recognition Heuristic

Recognition heuristic: If one of two objects is recognized and the other is not, then infer that the recognized object has the higher value with respect to the criterion.

effetto “less is more”

Recognition validity: $\alpha = R/(R+W)$

Knowledge validity: β



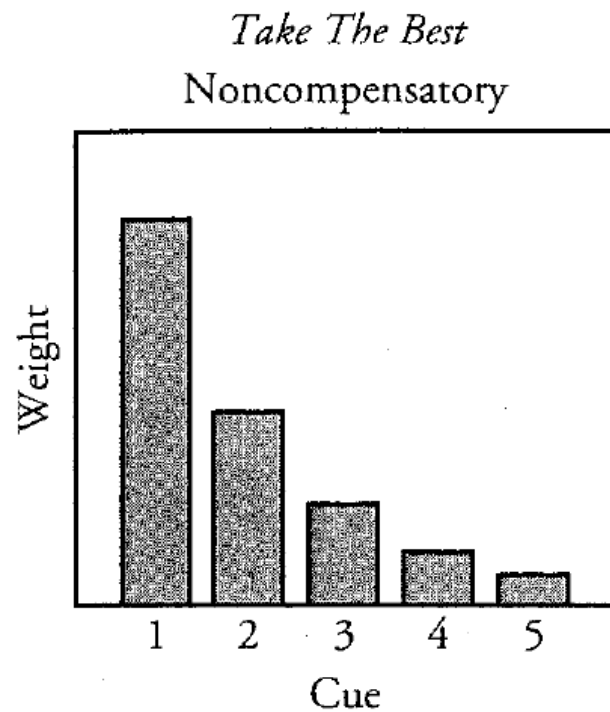
$$\alpha > \beta$$

Take the Best

- 1 *Search rule*: Search through cues in order of their validity. Look up the cue values of the cue with the highest validity first.
- 2 *Stopping rule*: If one object has a positive cue value and the other does not (or is unknown), then stop search and proceed to Step 3. Otherwise exclude this cue and return to Step 1. If no more cues are found, guess.
- 3 *Decision rule*: Predict that the object with the positive cue value has the higher value on the criterion.



Ambienti non-compensativi



$$W_j > \sum_{k>j} W_k$$

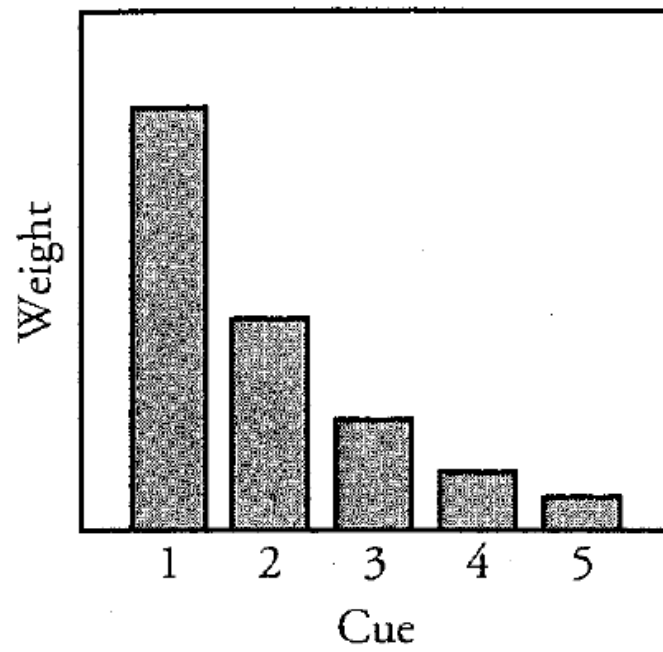
Scarsità di informazione

$$M < \log_2 N$$

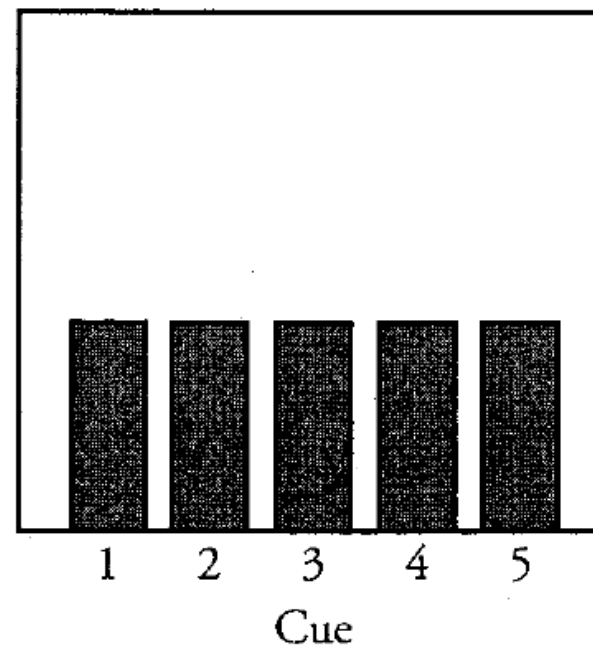
M : numero di cues

N : numero di oggetti da valutare

Take The Best
Noncompensatory



Tallying
Compensatory



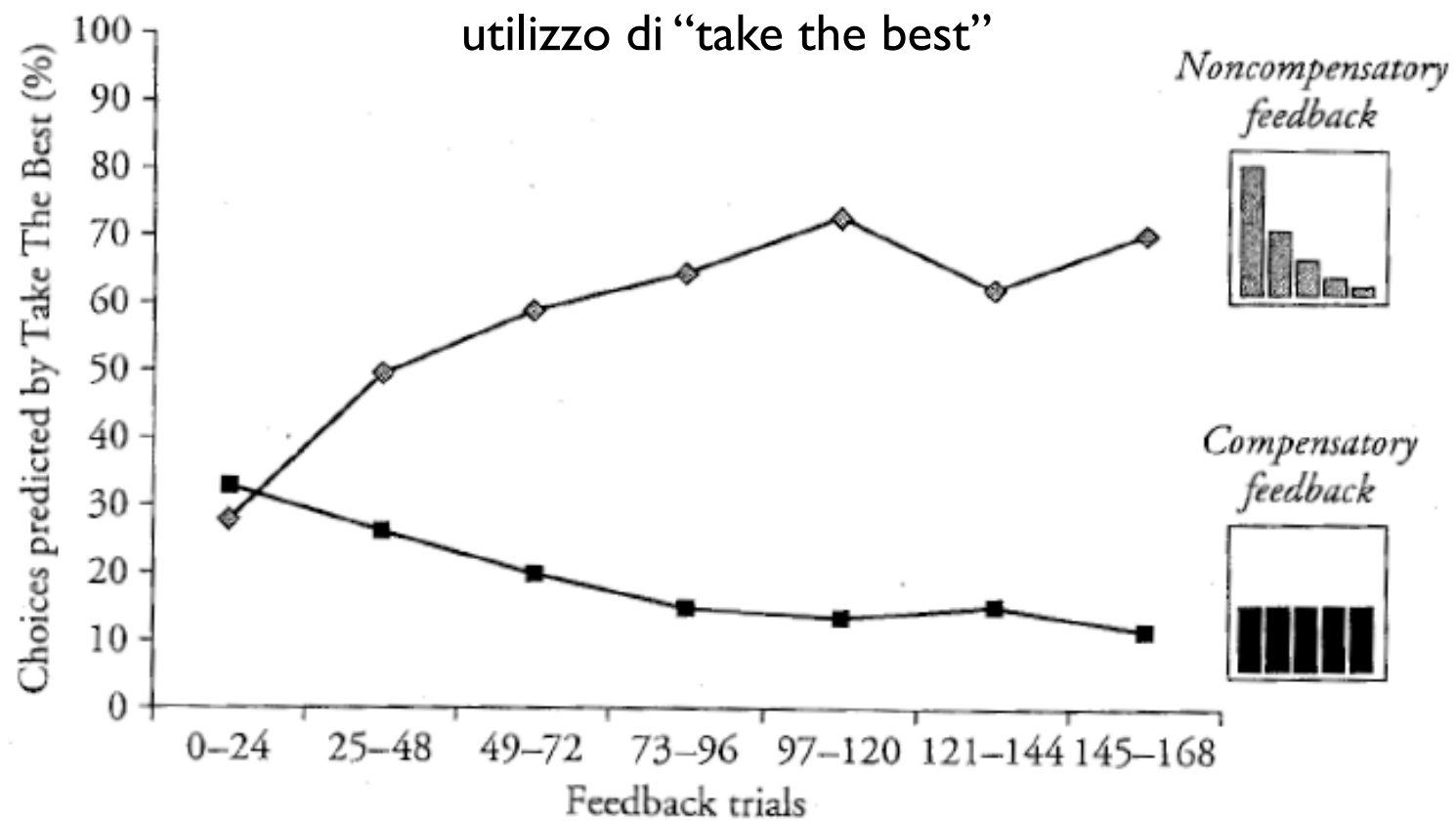


Figure 4.4 How people adapt their heuristics to the structure of environment

Source: Based on Rieskamp & Otto (2004)

Vantaggi delle euristiche:

- Velocità
- Soluzione di problemi intrattabili
- Robustezza

Le euristiche ignorano gran parte dell'informazione (sono “frugali”) ciò le rende resistenti al “rumore” nell'ambiente

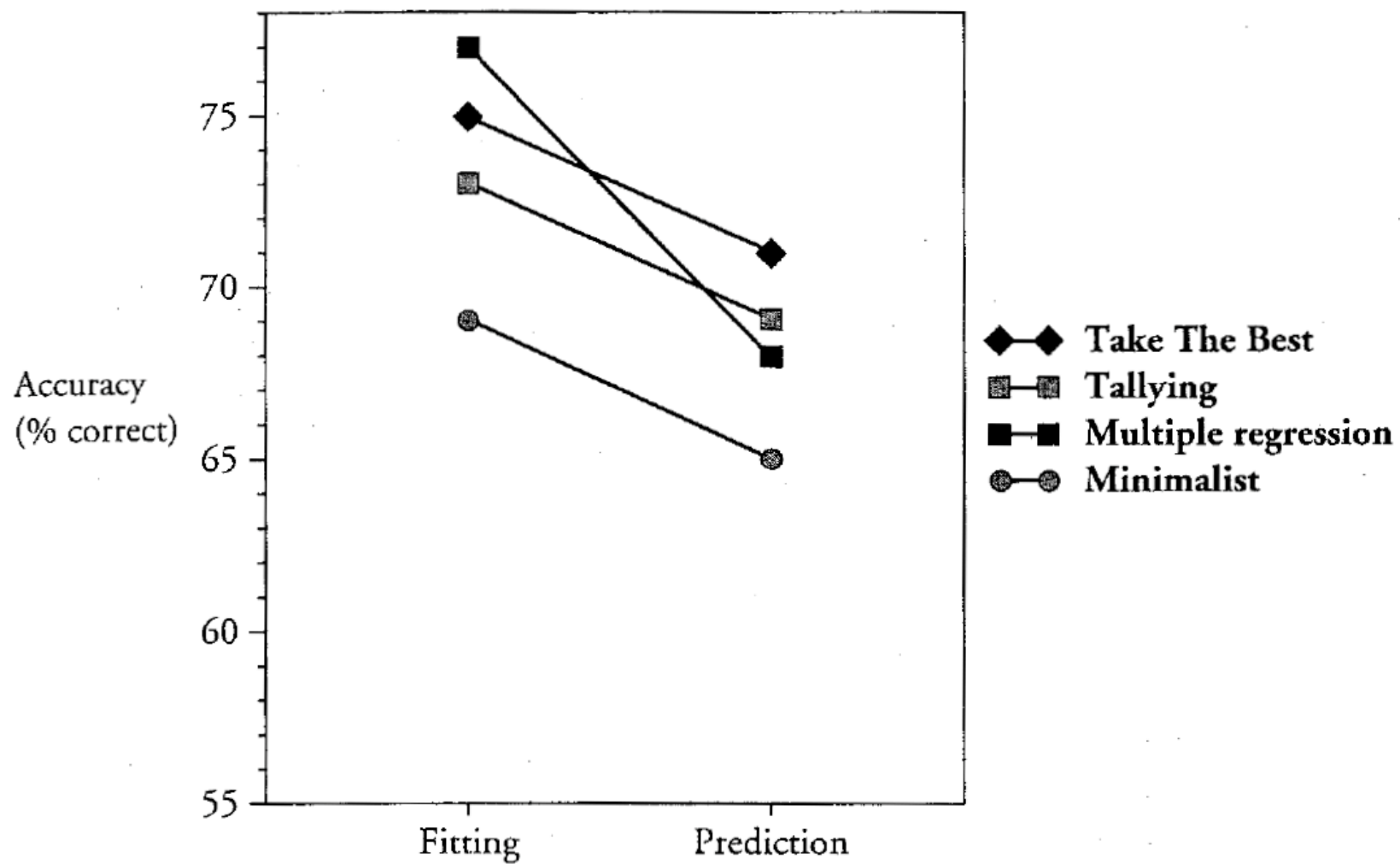
Approccio classico:

- ignora l'ambiente
- la mente distorce l'informazione che riceve; decisioni irrazionali

Approccio ecologico:

- l'ambiente contiene informazione e rumore; ha una *struttura*
- la mente sfrutta la struttura dell'ambiente per decisioni efficaci

20 prediction problems



Heuristic	Definition ¹	Ecologically rational if:
Recognition heuristic (Goldstein & Gigerenzer, 2002).	If one of two alternatives is recognized, infer that it has the higher value on the criterion.	Recognition validity >.5
Fluency heuristic (Schooler & Hertwig, 2005)	If one alternative is recognized faster than another, infer that it has the higher value on the criterion.	Fluency validity >.5
Take the best (Gigerenzer & Goldstein, 1996)	Infer which of two alternatives has the higher value by (a) searching through cues in order of validity, (b) stopping the search as soon as a cue discriminates, (c) choosing the alternative this cue favors.	Cue validities vary highly, moderate to high redundancy, scarce information (Hogarth & Karelaia, 2005, 2006; Martignon & Hoffrage, 1999, 2002).
Tallying (unit-weight linear model; Dawes, 1979)	To estimate a criterion, do not estimate weights but simply count the number of favoring cues.	Cue validities vary little, low redundancy (Hogarth & Karelaia, 2005, 2006).
Imitate the majority (Boyd & Richerson, 2005)	Look at a majority of people in your peer group, and imitate their behavior.	Environment is not or only slowly changing, info search is costly or time-consuming.

Sfida alla prospect theory:

Priority Heuristic

(Brandstatter et al. 2006)

Priority rule Go through attributes in the order: minimum gain, probability of minimum gain, maximum gain.

Stopping rule Stop information search if the minimum gains differ by one tenth (or more) of the maximum gain (across the two gambles); otherwise, stop search if probabilities of minimum gain differ by 0.1 (or more).

Decision rule Choose the gamble that is more attractive in the attribute (gain or probability) that stopped search.

Consigli di lettura:

Ariely (2008). *Prevedibilmente irrazionali*. Rizzoli.

Gigerenzer (2009). *Decisioni intuitive*. Cortina.

Lucchiari & Pravettoni (2010). *Mind the gap*. Unicopli.

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