

## BOOK REVIEW

# The Uncertain, the Simple and the Smart: Review of *Smart Management: How Simple Heuristics Help Leaders Make Good Decisions in an Uncertain World* by Jochen Reb, Shenghua Luan and Gerd Gigerenzer. Cambridge, MA: MIT Press, 2024, 261 pages, hard cover.

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*Smart Management* is a culmination of the *fast-and-frugal heuristics* perspective, a major research program on heuristics grounded in cognitive psychology and algorithmic models for decision-making, that goes the extra mile of tailoring its messages to management. Heuristics have been proposed in management before, good business strategy has been claimed to consist of simple rules (Eisenhardt & Sull, 2001), fast-and-frugal heuristics have been developed for successful project management (Flyvbjerg, 2022), and there have been attempts to rehabilitate bounded rationality in management learning (Lejarraga & Pindard-Lejarraga, 2020). Nevertheless, the uptake of fast-and-frugal heuristics has been slow and costly. In this review, I argue that the book by Jochen Reb, Shenghua Luan and Gerd Gigerenzer—the latter is the originator of the fast-and-frugal-heuristics program—can help accelerate the suitable application of heuristics in our volatile, uncertain, complex, and ambiguous (VUCA) world. The insights of *Smart Management* come from: (i) a clear, bold conceptual analysis, (ii) a comprehensive empirical assessment, and (iii) a tough, critical mindset for learning.

I must disclose having researched heuristics, sometimes together with the authors, although not during the last 5 years. I have seen evidence for the power of heuristics, but contrary results too, and noticed that distinguished researchers remain unconvinced. Writing this review has been a learning experience, and this is the light in which to read it.

*Conceptual analysis.* The fundamental concept in *Smart Management* is uncertainty. Uncertainty means that not all possible decision actions, future system states, and associated probabilities and consequences can be known, and hence an optimal action cannot be calculated (Table 2.1, p. 17). The book clarifies (p. 20) that a world with uncertainty is what Jimmie Savage, founder of modern Bayesian decision theory, called a *large world*, and strongly argues that this is essentially the same with a VUCA world in management lingo. The issue, according to *Smart Management*, is that decision research and education in business schools typically refer to small worlds—wherein good decision making may be identified with optimization and heuristics are linked to biases as in the pioneering psychological research of Amos Tversky and Daniel Kahneman—without considering the differences between small and large worlds on what good decision-making is. But Savage pointed out the impossibility of optimization in large worlds and Herb Simon, a founder of bounded rationality and artificial intelligence, conjectured that heuristics might outperform optimization in large worlds. Alas, this early wisdom was lost in translation. This book wishes to resurrect the wisdom, flesh it out and put it to work.

A deciding contribution of *Smart Management* is that it dares to argue that the infatuation of management decision resources with small worlds is damaging. We are teaching our students that various trade-offs must exist: If you use a decision heuristic you may gain in speed, effort or transparency but you will lose in accuracy, we instruct. This rhetoric—the evidence is discussed shortly—encourages students to be suspicious of and brush aside the capacities of the human mind to anticipate, intuit, innovate, and do whatever else is needed to overcome business challenges such as making forecasts, allocating resources and leading people in a large world. We gamble with giving students a wrong idea of what management decision making is. The paragraph ‘Uncertainty enables progress’ (pp. 20–21) is a gem in crafting the argument and useful summaries are given in Tables 2.2 and 2.3 (p. 22 and 30, respectively). Such material could have drifted to an excessive admiration of human expertise, but this book avoids the trap.

One might object that there exists management decision research on heuristics for large worlds and that fast-and-frugal heuristics are taught in some business schools or that some ‘common misconceptions about heuristics’ are caricatures as ‘intuition should not be trusted, analysis is always better’ (p. 30). *Smart Management* does not address such objections directly.

*Empirical assessment.* A characteristic of fast-and-frugal heuristics has been that, unlike other conceptions of heuristics in psychology and management, they can be represented by algorithms. All 15 heuristics in the Glossary are of that type, as the  $1/N$  heuristic that allocates an equal amount of money to each asset in a financial portfolio. The book provides the right amounts of quantitative, well-documented evidence on heuristic performance in several tasks, including hiring (Chapter 4, pp. 61–65) and marketing (Chapter 12, pp. 180–185), along the way offering eye-catching demonstrations of fast-and-frugal heuristics outperforming state-of-the-art machine learning algorithms. There is understandably less quantitative evidence on some topics, such as innovation (Chapter 6) and leadership (Chapter 9). Chapter 7 addresses negotiation, also bringing in an uncertainty angle in the small worlds of game theory.

The book navigates the temptation of cherry picking successful applications of heuristics. Instead, it emphasizes the principle of *ecological rationality*, that every heuristic works well in the appropriate context but not in others. The prudent take-away message is: ‘... do not avoid heuristics but learn how to use them intelligently’ (p. 210). Derivations of precise conditions under which either heuristics or optimization perform better are outlined together with the foundational bias-variance decomposition of forecasting error (pp. 49–52), although this outline might not satisfy formally minded readers while confusing those preferring verbal narratives. The book passes on the chance to comment that bias and variance are negatively correlated and accepting one can lead to competitively accurate forecasts; this fact contradicts popular statements that both bias and variance—the latter has been dubbed ‘noise’—should be removed.

Interestingly, *Smart Management* goes outside the comfort zone of known fast-and-frugal heuristics and introduces heuristics whose suitable application requires discretion that cannot (yet) be captured formally. This extension aligns with recent attempts to view managerial guidelines such as Toyota’s best practices as fast-and-frugal heuristics (de Treville, Browning, Marewski & Weiss, 2023). Some heuristics as ‘hire well and let them do their jobs’ (p. 138) for leadership are intriguing and invite further work, whereas others seem a bit like old wine in a new bottle, such as ‘errors are expected to occur; if they do, they are taken as valuable information, and one talks openly about them to identify the cause’ (p. 173) for organizational culture building.

*Critical mindset.* The book opens and closes by asking what one will likely not learn (Chapter 1), but should learn (Chapter 13), in business school. In both cases, the first answer of *Smart Management* is ‘heuristics’. Indeed, there is a wealth of information on fast-and-frugal heuristics across management, explicated with lab and field experiments, computer simulations and theoretical analyses.

Perhaps even more importantly, there are lessons about how to learn. *Smart Management* is grounded on two subjects that serve well to develop students’, and lecturers’, critical thinking: history and philosophy. The book is vigilant about not taking ideas as given truths, no matter how deeply engrained they have become. *Smart Management* challenges widespread decision-making

dogmas, such as that the only useful perspective on rationality is logic (there is the *ecological rationality* principle) and that uncertainty can always be reduced to probability (consider the phenomenon of entrepreneurship). The fundamental ideas of Simon have had a changing and complex relationship to the ideas of Kahneman and Gigerenzer that one must take time to understand (Petracca, 2021), and this book can inspire readers to make the intellectual effort.

*Smart Management* is a mature exposition of the fast-and-frugal-heuristics perspective, written in a layered fashion so that it may be employed in a host of courses, for undergraduates and doctoral students to managers, executives and leaders. It connects with other perspectives, discussing results of artificial intelligence and the heuristics-and-biases program, showing that some have been misread as if they applied to large worlds when they refer to small ones; for example, IBM's Watson won *Jeopardy!* but performed poorly in cancer treatment (pp. 177–178). The tone is constructive: 'The two programs [heuristics-and-biases and fast-and-frugal heuristics] should not be seen as antagonistic, but rather as natural steps towards progress' (p. 16). While we all, theorists and practitioners, are co-developing management's vision of decision making, this book hopefully will be part of the conversation.

**Competing interests.** The author declares none.

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