



Heuristics in organizations: A review and a research agenda[☆]

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ABSTRACT

A systematic literature review of the articles published in the *Journal of Business Research* and other organization and management theory (OMT) journals reveals a substantial increase in the number of studies on heuristics. Anticipating the emerging influence of heuristics for OMT, we review the basic principles and the state of the art of its current application. We find that scholars have verified the applicability and value of individual heuristics in management on an individual level. However, scholars lack a detailed understanding of the role of heuristics in organizations. A distinct organization-level perspective on heuristics would contribute to an understanding of organizations as antecedents, subjects, and consequences of heuristics. The study here presents this potential together with a research agenda for heuristics and organizational processes.

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1. Introduction

In the Special Section on “Risk, Uncertainty, and Heuristics” in the *Journal of Business Research*, Mousavi and Gigerenzer (2014) re-emphasize the key role that heuristics play for different kinds of business situations under uncertainty. Dating back to the seminal work of Herbert Simon (1947), the role of heuristics has been debated in a wide range of areas in organization and management theory (OMT). However, the debate on fast-and-frugal heuristics in OMT has been criticized as incomplete as it does not distinguish between individual-level and organizational-level heuristics (Vuori & Vuori, 2014). In order to assess such critiques, we systematically review the studies in the extant OMT literature that refer to heuristics, take stock of the empirical and theoretical foundations of prior heuristic research, and present a research agenda for heuristics in organizations.

2. Heuristics in the organization and management theory literature

An initial content search for “heuristics” in major management journals reveals ten journals with a focus on heuristics: *Management Science* (991 articles published since 1955), *Academy of Management Review* (311), *Journal of Business Research* (309), *Academy of Management Journal* (247), *Strategic Management Journal* (240), *Research Policy* (203), *Organizational Studies* (194), *Journal of Management Studies* (179), *Organization Science* (146), and *Administrative Science Quarterly* (49). Although such content

screening is only a starting point and does not specify the distinct role of heuristics within each paper, it reveals an increase in scholarly interest in heuristics in these journals over the years, peaking in 2014 (Fig. 1).

The study of heuristics does not present a single perspective; such study is subject to two dominant perspectives (Kelman, 2011): the heuristics-and-biases paradigm and the fast-and-frugal paradigm. From an OMT perspective, both paradigms relate to the seminal Carnegie School contributions such as Simon (1947), March and Simon (1958), and Cyert and March (1963). The heuristics-and-biases paradigm relates to the notion of bounded rationality and associates heuristics with biases in decision-making. Empirical observations reveal that important principles of rational choice are often violated in the real world. For instance, not all the alternatives or consequences of a choice are known nor are all the preferences accounted for; thus, decision behavior differs systematically from rational procedures (March, 1994). Scholars have discussed the limitations of information availability and processing (e.g., problems of attention, memory, comprehension, and communication) as the reasons for systematic behavioral deviance from rational models (March, 1994). From a bounded rationality perspective, heuristics appear to emerge from the individual cognitive ecology of the decision maker, which is “bounded” (as the name suggests). The heuristics-and-bias research program investigates the psychological aspects of bounded rationality and examines simplification processes such as editing, decomposition, heuristics, or framing (Kahneman, Slovic, & Tversky, 1982).

In contrast, the fast-and-frugal paradigm provides a positive view of heuristics. This paradigm is based on the work of Gerd Gigerenzer. The paradigm refers to Herbert Simon's oft-cited metaphor of human rational behavior as being a pair of scissors “whose blades are the structure of task environments and the computational capabilities of the actor” (Simon, 1990: 7). Simon's “scissors” metaphor is the central point of

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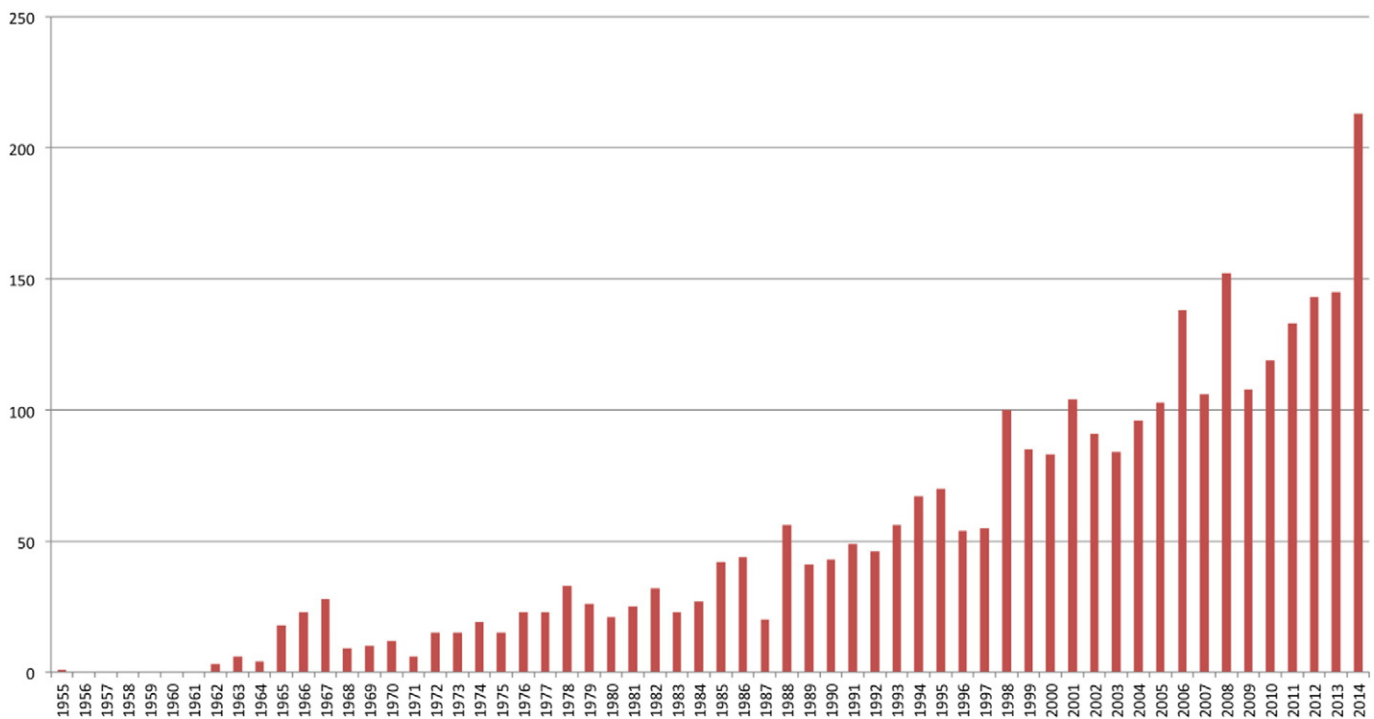


Fig. 1. Papers on heuristics published between 1955 and 2014 in Management Science, Academy of Management Review, Journal of Business Research, Academy of Management Journal, Strategic Management Journal, Research Policy, Organizational Studies, Journal of Management Studies, Organization Science, and Administrative Science Quarterly.

reference for contingent decision-making theory (Payne, Bettman, & Johnson, 1993), giving way to “ecological rationality,” which is defined as the “ability to exploit the structure of the information in natural environments” (Goldstein & Gigerenzer, 2002: 76). This is a fundamental concept of the “ecological rationality of heuristics” that has been established within the interdisciplinary research program on the foundations of adaptive human behavior (Gigerenzer, Hertwig, & Pachur, 2011). From this point of view, heuristics may be strategically rational in certain situations; they are “ecologically rational,” a term that frames individual and environmental contingencies that benefit inference based on heuristics (Goldstein & Gigerenzer, 2002; Martignon & Hoffrage, 1999). This view significantly differs from the program on heuristics developed by Kahneman et al. (1982), as the latter acknowledges the accuracy of heuristics in exploiting environmental information. Thus, heuristics are “efficient cognitive processes that ignore information” (Gigerenzer & Brighton, 2009: 107). From that perspective, researchers investigate the when and the how of simple rules for exploiting environmental specifics (Brandstätter, Gigerenzer, & Hertwig, 2006; Gigerenzer, 1991; Gigerenzer & Goldstein, 1996; Gigerenzer & Hoffrage, 1995; Gigerenzer, Hoffrage, & Kleinboelting, 1991; Gigerenzer et al., 2011; Goldstein & Gigerenzer, 2002; Martignon & Hoffrage, 1999). Heuristics capture knowledge about which cues to search for in the context of a particular decision, when to stop searching for cues, and what decision to derive from the cues obtained (Czerlinski, Gigerenzer, & Goldstein, 1999: 98).

The debate on heuristics in OMT becomes evident when we examine two of the top cited articles on heuristics, both published in the *Strategic Management Journal (SMJ)*: the first is the article by Amit and Schoemaker (1993), with 69.73 average citations per year (1534 total citations); and the other is the article by Bingham and Eisenhardt (2011) with 5.50 average citations per year (22 total citations). These articles refer to the two different views on heuristics. Amit and Schoemaker (1993) discuss decisions about strategic assets: “In making investment decisions about Strategic Assets, managers face the daunting tasks of (1) anticipating possible futures, (2) assessing competitive interactions within each projected future, and (3) overcoming organizational inertia and internal dispute in order to realign the firm’s bundle of SA” (Amit &

Schoemaker, 1993: 40). In particular, they discuss the role of heuristics for decisions about strategic assets, and they follow the extant psychological literature (Kahneman et al., 1982) in stating that “managers will approach this uncertainty, complexity, and conflict with considerable bias, illusion, and suboptimality” (Amit & Schoemaker, 1993: 40).

In contrast, Bingham and Eisenhardt (2011) reveal the strategic rationality of heuristics. Through their longitudinal case study of the internationalization processes of information technology (IT) firms, Bingham and Eisenhardt (2011) report that firms learn a specific portfolio of “opportunity capturing heuristics,” which are idiosyncratic across different firms. The authors argue that firms engage in “simplification cycling”—over time and with experience, firms refine their sets of heuristics while simultaneously simplifying them. They identify this ability for “simplification cycling” as a key dynamic capability and, therefore, as a source of organizational adaptability. Thus, in their view, heuristics are crucial in enabling managers to deal with uncertain and highly transformative environments (Bingham & Eisenhardt, 2011). This view has grounding in the fast-and-frugal paradigm of heuristics that has recently found broad and increasing attention in the OMT community. Henceforth, we focus on the fast-and-frugal paradigm and its application in OMT.

2.1. References to Gerd Gigerenzer’s work in leading management journals

A large number of articles within the ten journals that form our sample refer to the fast-and-frugal paradigm, citing Gigerenzer. An examination of the articles published in these journals reveals that the *Journal of Business Research* has the largest number of publications referencing Gigerenzer: *Journal of Business Research* (36 articles), *Management Science* (13), *Strategic Management Journal* (12), *Academy of Management Review* (6), *Journal of Management Studies* (6), *Organization Studies* (5), *Administrative Science Quarterly* (4), *Organization Science* (3), and *Research Policy* (1). As the papers that cite Gigerenzer also target topics other than heuristics, the two authors of this paper independently assessed the content of the papers. The qualitative assessment revealed high consensus in coding and provides further scope limiting the final sample to 46 papers. Table 1 lists the papers in the final sample.

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