# Chapter 1
# Cognitive Capacity in the Management and Organization Research: A Review and Agenda for Future Research

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## ABSTRACT

*Today's technological advances hold great promise for managers, as they unleash unprecedented amounts of information. Whether and how managers will cope with the cognitive (over)load to effectively seize these opportunities remains underexplored. Extant organizational and management research has built on the assumption of managers' cognitive capacity limitations – a key aspect of their bounded rationality. Numerous studies have relied on this assumption and have contributed to our understanding of how individuals, groups, organizations, industries, and organizational fields cope with limited cognitive capacity. Based on a review of this research, this chapter uncovers how the organizational and management scholarship has applied and complemented the foundational work. It then sheds light on recent insights from parallel disciplines, and outlines avenues for future research to develop a broadened conceptualization of cognitive capacity and to further integrate the role of modern technologies in shaping cognitive capacity and in coping with cognitive (over)load in organizations.*

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## INTRODUCTION

Given the 21st century's technological advances, the recent management research has focused on the promise and opportunities of the unprecedented amounts of information, the so-called 'big data', and on the role of computational techniques to unveil patterns in such data and to solve problems (George et al., 2016; Raisch & Krakowski, 2021; vonKrogh, 2018). In turn, much less focus has been on the human interface - whether and how managers will cope with the amount of information and cognitive (over)load to effectively seize these opportunities.

As humans, we have limited cognitive capacity – psychological and physical limitations to the amount of cognitive load that one can effectively bear at any point in time (March & Simon, 1993; 1958; Simon, 1947; Weick, 1970). This capacity limitation is part of the explanation for why actors are boundedly rational (Foss, 2003; Gavetti et al., 2012; Greve, 2013; Porac & Tschang, 2013). There are two sources of bounded rationality: problems of uncertainty (*too little information*) and problems of overload (*too much information*). While the recent management and organizational research has regained an interest in the former problem, for instance in the work on heuristic decision-making and ecological rationality (c.f. Bingham & Eisenhardt, 2011; Gigerenzer, 2008), the latter problem remains under-researched (Laureiro-Martinez et al., 2019; Nauhaus et al., 2021).

This may be surprising, for three reasons: First, as introduced above from a practical perspective, the unprecedented amounts of information that managers face today often create information (over)load and unprecedented strains on their cognitive capacity. Yet, how managers handle this situation and what the role of technology is therein remains less well understood (Colbert et al., 2016; Nauhaus et al., 2021; Raisch & Krakowski, 2021). Second, from a conceptual perspective, the notion of cognitive capacity limitations is a widely held assumption of human cognition across many foundational as well as recent organization and management theories (DiMaggio & Powell, 1983; Galbraith, 1973; March & Simon, 1993; 1958; Weick, 1995). The widespread use of the assumption has led to its use in a variety of different ways. Thus, we need clarification of the different meanings associated with the construct and its related constructs, as well as their interrelationships and integration. Second, the core tenet draws on foundational work on cognitive capacity limitations from the early 1950s and 1960s and is largely cross-cited across literatures. Despite more recent advances in the source discipline, these insights have not spilled back into the management and organizational literatures.

The purpose of this review is to harness the generative potentials of previous studies and to expand the current thinking about cognitive capacity and its related constructs in ways that account for more recent insights into the characteristics of human cognition. The chapter is structured as follows: First, the chapter first syn-