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## Leader cognition: Approaches and findings

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## ABSTRACT

Although few scholars would dispute the point leaders must think, cognition has not, perhaps, received the attention it warrants in studies of leadership. The intent of the present special issue is to examine how cognition influences leader emergence and performance. In this introductory piece we argue that cognitive skills, often domain specific cognitive skills, strongly influence leader emergence and performance. The conditions that moderate the impact of these skills are also examined along with the ways in which cognitive capacities shape subsequent leader behavior. The implications of cognition for leader development and directions for future research are discussed.

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A superficial reading of the literature on leadership (Bass & Bass, 2009; Yukl, 2011) seems to point to a conclusion. Leaders do not need to think — they must act. In keeping with this assumption, theories of leadership, and the measures formulated based on these theories, have typically focused on follower perceptions of leader behavior (Dinh, Lord, & Hoffman, 2014). For example leader–member exchange (Graen, Novak, & Sommerkamp, 1982), transformational leadership (Bass & Avolio, 1990), servant leadership (Liden, Panaccio, Meuser, Hu, & Wayne, 2014), and ethical leadership (De Hoogh & Den Hartog, 2008) to mention a few examples, all represent behaviorally based theories of leadership.

Although it may be useful to understand and frame leadership in terms of behavior, this framing of leadership begs a number of questions. Are there different styles of leader behavior—charismatic, ideological, or pragmatic (Mumford, 2006)? Does leader behavior vary as a function of social context (Sparrowe, 2014) or organizational context (Carter & DeChurch, 2014)? And, where does leader behavior come from—identity (Day, Harrison, & Halpin, 2009), personality (Bono & Judge, 2004), or cognition (Mumford, Connelly, & Gaddis, 2003; Mumford, Zaccaro, Harding, Jacobs, & Fleishman, 2000)?

It is this last question to which the present special issue is devoted. More specifically, the present special issue is focused on how cognition influences leader emergence and performance. Cognition may be defined in many ways, however cognition ultimately refers to how people work with information in solving problems (Ericsson, 2003). As Zaccaro (2014) has noted, leaders must solve problems — albeit problems arising in a social or organizational context. As a result, there is ample reason to suspect that cognition would be critical to understanding the nature and significance of both leader emergence and leader performance (Mumford, Friedrich, Caughron, & Byrne, 2007).

**Cognition**

Although the available evidence indicates that cognition is a critical force underlying leader emergence and performance (Connelly et al., 2000; Lord, De Vader, & Alliger, 1986), one must ask what exactly is implied by the term cognition. To begin, one must bear in

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mind that in incidents of leadership there is both a leader, or leaders, and a follower, or followers, and cognition occurs among both leaders (Drazin, Glynn, & Kazanjian, 1999) and followers (Lord & Maher, 1990). In the present special issue, our concern is not follower cognition. Rather, the focus of the present special issue is on the cognition of leaders.

Leader cognition, however, as is the case with cognition in general, is a complex phenomenon. Cognition is commonly held to require knowledge, or information (Kolodner, 1997), and knowledge has been shown to influence leader performance (Vessey, Barrett, & Mumford, 2011). Indeed, the case can be made that it is not just knowledge which is of concern but the ways people organize, store, and recall this knowledge (Connelly et al., 2000). This observation suggests that priming and salience effects, effects shaping knowledge recall, may be important in understanding leader emergence and performance. Indeed, Ligon, Hunter, and Mumford (2008) have provided evidence indicating that the information provided by prior life experiences, and recall of these life experiences, is critical to the emergence of leadership styles.

Cognition, however, is not simply a matter of knowledge, and recall of this knowledge, it also depends on people's capacity to work with this knowledge. One key capacity in this regard is general intelligence – commonly construed as the speed and depth of information processing (Tyler, 1964). Indeed, intelligence has proved to be a critical cause of performance in virtually all domains where people must solve problems (Schmidt & Hunter, 1998). And, because leaders must solve social or organizational problems (Mumford, Zaccaro, Harding, Jacobs, & Fleishman, 2000), there is reason to suspect that cognition would also influence leader emergence and performance.

The speed and depth with which people process information, however, are not simply a matter of basic abilities, such as intelligence, and people's speed and depth of processing improve as a function of experience working in a domain. Experience working in a domain gives rise to specific skills – skills that emerge, in part, as a function of intelligence, and, in part, as a function of experience and active practice. What should be recognized here, however, is that these domain specific cognitive skills may be as important, if not more important, than general intelligence in accounting for leader emergence and performance when it is recognized that leadership emerges in social systems as a function of experience. Thus McKenna, Rooney, and Boal (2009) have argued that wisdom, social appraisal skills, may be important to understanding leader emergence and performance due to the distinctly social nature of the problems presented to leaders. This observation, however, broaches the question as to what other skills might contribute to leader emergence and performance.

Ability and skills, however, are of value in solving problems, including the problems presented to leaders, only when these capacities can be applied. The application of cognitive capacities in problem-solving has long been a focus of the literature on decision making (Hogarth, 1980). And, it seems clear that leaders must make decisions. The decision-making literature, however, has focused on situational variables, or individual variables, that result in better (optimal) or worse (sub-optimal) decisions in a specific context. In the case of leaders, however, these contingencies on the application of cognitive capacities may be far more complex when people are asked to address the type of problems commonly presented to leaders. Thus a number of variables ranging from stress (Fiedler & Garcia, 1987) to complexity of stakeholder concerns (Marion & Gonzales, 2013) may influence how leaders apply cognitive capacities.

The application of cognitive capacities is of interest for two reasons. The first reason is that how people apply their cognitive capacities will give rise to the type of behavior others see leaders exhibit. Cognition may shape the kind of visions leaders formulate and how these visions are articulated to key stakeholders (Strange & Mumford, 2005). Application of cognitive capacities may, moreover, shape how, and how well, leaders interact with followers giving rise to more, or less, effective patterns of leader member exchange.

The impact of applying cognition on leader behavior points to the second reason application of cognitive capacity is of interest to students of leadership. Understanding how leaders apply cognition, and the conditions shaping effective application of cognitive capacities in solving leadership problems, contributes to our ability to improve leader performance. Thus understanding how leaders apply cognitive capacity, and the variables shaping more, or less, effective application of these capacities, might allow us to “design” leadership jobs and develop work “aids” which would contribute to more effective leadership. More generally, understanding how people apply cognition might provide a basis for formulating more effective leadership development programs (Mumford, Marks, Connelly, Zaccaro, & Reiter-Palmon, 2000).

## Knowledge and ability

The first article in this special issue, an article by Combe and Carrington (this volume) examines one form of knowledge in relation to a critical situational influence. Prior studies (Mumford et al., 2007) have shown that leader cognition is particularly important to performance under conditions of crisis. Combe and Carrington (this volume) examine one form of knowledge, mental models (Rouse & Morris, 1986), held to be critical to crafting crisis resolution strategies. They examine agreement among the mental models of top management teams pre and post crisis. And, they found that shared mental models, shared mental models held to be critical to team performance (Day, Gronn, & Salas, 2004), emerge following crises. Thus crises may cause leaders to construct or organize knowledge in new, perhaps more appropriate, ways.

These findings are, of course, notable because they point to the salience of crises in the formation of leaders' knowledge structures. These findings, however, also suggest that as a result of crises leaders may come to understand prior experiences in different ways—imposing different organizing structures on past experience or case-based knowledge (Barrett, Vessey, & Mumford, 2011; Vessey et al., 2011). What remains unclear, however, is how crises interact with prior experience in shaping the shared mental models created by leadership teams.

Of course, one plausible answer to this question is that the shared mental models formulated in response to crises will depend on both team processes and the basic intelligence of team members. The role of intelligence in leadership has long been debated with

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