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The effect of cognitive diversity on the illusion of control bias in strategic decisions: An experimental investigation

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ABSTRACT

By integrating cognitive diversity into debiasing literature, this paper contributes towards opening the black box of executive judgment. Based on information processing theory we investigate the role of cognitive diversity in strategic decision making. We apply a vignette-based experimental research design to examine the effect of cognitive diversity in teams on decision maker's illusion of control. The results of these experiments provide evidence for a positive influence of high cognitive diversity for debiasing judgment while similarly indicating no such effect for groups with low cognitive diversity. These findings suggest that group composition aspects can play an important role for improving judgment in decision making teams and open promising new avenues for studying debiasing in behavioral strategy research.

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1. Introduction

Behavioral strategy research analyzes the psychological foundations of strategic management (Hodgkinson & Healey, 2011; Powell, Lovallo, & Fox, 2011; Wright & Goodwin, 2002). Particularly, it investigates the role of cognitive biases in strategic decisions (Powell et al., 2011; Schwenk, 1995). Research has shown that these psychological deviations from rationality in human thinking can limit decision maker's abilities to make optimal choices in complex environments thus reducing the quality of strategic decisions in organizations (Kahneman & Klein, 2009; Kahneman & Tversky, 2000; Kahneman, Slovic, & Tversky, 1982; Lovallo & Kahneman, 2003).

One key stream of research in behavioral strategy has studied methods and techniques to reduce the negative effect of cognitive biases in strategic decisions (Kahneman, Lovallo, & Sibony, 2011; Lovallo, Clarke, & Camerer, 2012; Soll & Larrick, 2009; Wright & Goodwin, 2002). These so called debiasing mechanisms that have been shown to be effective in reducing biases in judgment comprise cognitive strategies such as consider the opposite (Mussweiler, Strack, & Pfeiffer, 2000), motivational strategies that

call for setting appropriate incentives (Larrick, 2004) as well as technological strategies such as cognitive mapping (Hodgkinson, Bown, Maule, Glaister, & Pearman, 1999) and scenario planning (Meissner & Wulf, 2013; Schoemaker, 1993).

In addition to these active intervention techniques, prior research on debiasing has also conceptually highlighted the potential of group characteristics such as group composition for debiasing judgment (Arkes, Christensen, Lai, & Blumer, 1987; Larrick, 2004). This research suggests that diverse teams may reduce biased judgment as they foster the sharing of information and the introduction of new perspectives (Larrick, 2004). So far, however, little is known about the underlying mechanisms that link group composition to debiasing. Particularly, its theoretical and empirical foundations have been largely neglected in prior research on debiasing.

Top management team research has significantly contributed to our understanding of group composition (Olson, Parayitam, & Bao, 2007) and its effects on strategic decisions (Hambrick & Mason, 1984; Hambrick, 2007). Especially, it has analyzed the role of group composition (Carpenter, Geletkanycz, & Sanders, 2004) such as its size (Sanders & Carpenter, 1998), cultural heterogeneity (Elron, 1998) and diversity (Kilduff, Angelmar, & Mehra, 2000) in the strategic decision making process. This research suggests that group composition can positively affect strategic outcomes in organizations (for a review see: Carpenter et al., 2004). For example, studies suggest that diversity increases decision

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comprehensiveness and performance (Simons, Pelled, & Smith, 1999) as well as decision quality (Milliken & Martins, 1996) in organizations.

Cognitive diversity of top management teams has been shown to be particularly important in this context (Kilduff et al., 2000; Mohammed & Ringseis, 2001; Olson et al., 2007). Cognitive diversity describes differences in decision makers' preferences and beliefs about strategic goals (Miller, Burke, & Glick, 1998). It has been shown to improve strategic decisions based on the generation of more thoughtful alternatives and the consideration of multiple perspectives (Olson et al., 2007) as well as more creative solutions to strategic challenges (Hambrick, Cho, & Chen, 1996). Thus, cognitive diversity might be an important mechanism of group composition that can contribute towards debiasing decision making.

In this paper, we add a novel perspective to debiasing research by integrating cognitive diversity. We theorize that cognitive diversity, as a crucial aspect of group composition, will reduce biased judgment in strategic decisions. Based on information processing theory, we argue that cognitive diversity will negatively affect the illusion of control bias (Langer, 1975) as it increases the level of task conflict in the decision making team (Amason & Sapienza, 1997; Amason, 1996; Olson et al., 2007). Task conflict, again, has been found to foster a broader consideration of information (Boyle, Hanlon, & Russo, 2011; Nemeth, 1986) as well as a more balanced valuation of potentially confirming evidence (Schulz-Hardt, Jochims, & Frey, 2002), which has been linked to reducing the illusion of control bias (Langer, 1983).

Empirically, we explore this relationship based on an experimental investigation. This methodology, which is well established in the psychology and economics domain and that is increasingly applied in strategic management research (Agarwal, Croson, & Mahoney, 2010; Schoemaker, 1993; Song, Calantone & Di Benedetto, 2002), allows investigating cause-and effect relationships between the studied variables in a controlled laboratory setting. This adds to the methodological diversity in behavioral strategy research, which can help build a sound theoretical foundation in the domain (Hodgkinson et al., 1999; Powell et al., 2011).

We make two contributions to the discussion on debiasing in behavioral strategy research. First, we expand theory in the debiasing domain by integrating cognitive diversity research into the discussion, which suggests that this element of group composition in the top management team can crucially alter strategic decisions and reduce the level of bias in organizations. Secondly, we show that this effect of cognitive diversity on the illusion of control bias is asymmetric in a way that high levels of cognitive diversity reduce the bias while low levels of cognitive diversity do not increase illusionary control but rather do not alter the level of bias. This suggests that group composition aspects such as cognitive diversity may have a more fundamental effect in debiasing strategic decisions than conceptualized by prior research.

2. Theoretical framework

2.1. Behavioral strategy

Behavioral strategy focuses on the analysis of the psychological foundations that shape strategic decisions in the strategy process of organizations (Greve, 2013; Powell et al., 2011). Grounded in behavioral decision research (Cyert & March 1963; Kahneman & Lovallo, 1993), its main goal is to open the black box of executive judgment to better understand and ultimately improve individual cognition in strategic decision making (Hodgkinson et al., 1999).

Behavioral strategy has emerged into a comprehensive research stream embracing different philosophical views rooted in

computational (for a review see: Hodgkinson & Healey, 2008) and interpretative perspectives (e.g. Weick, 2012). It covers a variety of theoretical foundations (Levinthal, 2011; Powell et al., 2011; Westphal & Zajac, 2013) and comprises different levels of analysis including macro perspectives (Westphal & Zajac, 2013), top management teams (Hayward & Hambrick, 1997) and the individual (Kahneman, 2012). Conceptually and methodologically the field ranges from concepts that include neuroscience (e.g. Powell, 2011), identity (e.g. Gavetti, 2012) and emotions (e.g. Hodgkinson & Healey, 2011).

The reductionist school of thought in the behavioral strategy research stream focusses on the analysis of cognitive biases and their consequences for strategic decisions in organizations based on behavioral decision theory (Kahneman & Tversky, 1979b; Powell et al., 2011). Biases describe deviations from economic rationality in judgment that result from the application of specific heuristics (Kahneman et al., 1982). Much debate has centered around the question of whether biases and particularly heuristics, so called mental shortcuts in judgment (Kahneman & Tversky, 1979a) are harmful or beneficial for strategic decision making. On the one hand, scholars following the so called fast and frugal logic (Gigerenzer & Goldstein, 1996) argue that experience-based heuristics can be effective decision aids that allow for accurate and quick judgment (Gigerenzer & Selten, 2002; Luan, Schooler, & Gigerenzer, 2011). Bingham and Eisenhardt (2011) suggest, for example, that learned heuristics based on experience can be beneficial for strategizing and capability creation. On the other hand, supporters of the so called heuristics and biases logic (Tversky & Kahneman, 1974) have theorized and shown that biased judgment can in fact distort decision making processes and reduce rationality in strategic decisions (Kahneman & Tversky, 1979b; Kahneman et al., 1982; Thaler, Tversky, Kahneman, & Schwartz, 1997).

Building on the system 1 system 2 logic introduced by Stanovich and West (2000), other lines of research have suggested additional contingencies and elements that influence deviations from rationality in judgment. This research highlights that intuitive judgment can be beneficial to similarly arrive at high quality and quick decisions (Dane & Pratt, 2007; Hodgkinson, Sadler-Smith, Burke, Claxton, & Sparrow, 2009). In addition to these mechanisms also affective elements can be used to differentiate rational and unreasonable judgment (Hodgkinson & Healey, 2011; Slovic, Finucane, Peters, & MacGregor, 2004). Hodgkinson and Healey (2011) argue that this affective perspective based on a hot and cold cognition logic that combines deliberate and automatic judgment can help contribute to a more comprehensive representation of the subject.

In an attempt to integrate these divergent perspectives on intuitive judgment, Kahneman and Klein (2009) have made a significant contribution in resolving apparent discrepancies in the domain by introducing the decision environment as a context variable. They suggest that biases and heuristics may be particularly harmful in low-validity environments, in which uncertainty is high. In contrast, they posit that heuristics can be useful for decision making in so called high-validity situations that can benefit from experience-based information (Kahneman & Klein, 2009, 2010; Klein, Wolf, Militello, & Zsombok, 1995; Lipshitz, Klein, Orasanu, & Salas, 2001). Empirical studies support this position by showing the negative effect of biases particularly in strategic decisions that constitute a typical low validity environment due to the high level of uncertainty and complexity involved in these decisions (Das & Teng, 1999). These studies suggest that cognitive biases negatively affect decision quality and even performance in organizations (Blenko, Mankins, & Rogers, 2010; Hodgkinson et al., 1999; Meissner & Wulf, 2013; Milkman, Chugh, & Bazerman, 2009).

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