FAST AND HIGH-QUALITY DECISION-MAKING: THE ROLE OF BEHAVIORAL INTEGRATION

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Abstract

Decision speed and quality are both vital for organizational survival and prosperity. However, they are assumed to be in tension, and there has been limited theory development concerning whether, and if so how, both are attainable. To address this gap, we turn to behavioral integration which captures the intensity of intra-team interactions. While behavioral integration is considered an antecedent of decision quality, it is presumed to slow decision-making, and overall, there remains a "black box" surrounding the mechanisms, behaviors, and processes which transmit behavioral integration to decision outcomes. Our theoretical account challenges the notion of behavioral integration being an impediment to decision speed, and we present new theory and evidence—comprising a mixed-method field study—explaining how behavioral integration acts as a key driver of *both* decision speed and quality, while theorizing decision uncertainty as a new and important boundary condition.

Keywords: Behavioral integration, decision speed, decision quality, decision uncertainty, strategic decision-making

Introduction

Strategic decisions are novel, ill-structured, and complex; they cut across organizational functions, require significant financial investment, and have profound, long-term ramifications (Eisenhardt and Zbaracki, 1992; Mintzberg *et al*., 1976). Moreover, a commonly held assumption among top managers is that "we can have good decisions or fast ones, but not both" (De Smet *et al*., 2019, p. 2). Indeed, decision speed and quality are widely assumed to be in tension (Forstmann *et al*., 2008; Ratcliff and Rouder, 1998), and the so-called "speed-accuracy" trade-off is one of the oldest and most widely studied effects in decision-making research, and in general slower decisions are assumed to be more accurate than faster decisions (Donkin, Houpt, and Little, 2014). However, it is now more imperative than ever for organizations to make strategic decisions that are both fast and effective, owing to extreme events such as spiraling inflation, a global energy crisis, and conflict in Europe, aside from the lingering effects of the COVID-19 pandemic—all of which are compounded by fierce competition, rapid technological innovation, and globalization (Dykes *et al*., 2019).

However, the literature presents a puzzle. It suggests that firm performance requires firms to make high quality strategic decisions (Forbes, 2007), while at the same time, and especially in dynamic and munificent contexts, requiring them to make fast strategic decisions (Eisenhardt, 1989; Shepherd *et al*., 2021); yet theory development explaining how firms can achieve both outcomes is limited. While prior research has examined in isolation the antecedents of decision speed (e.g., Bakker and Shepherd, 2017; Clark and Maggitti, 2012) and decision quality (e.g., Amason, 1996; Olson *et al*., 2007), considerable uncertainty remains concerning whether, and if so how, both are attainable—despite frequent, long-standing calls in the literature for such research (cf. Eisenhardt and Zbaracki, 1992; Elbanna, Kapoutsis, and Mellahi, 2017; Elbanna, 2018).

To advance knowledge of how decision quality and speed both might be attained, we turn to behavioral integration, which is viewed as a significant refinement of upper echelons theory (Halevi, Carmeli, and Brueller, 2015; Hambrick, 2005), and is associated with a wide range of positive effects, including enhanced firm performance, preventing organizational decline, as well as promoting organizational ambidexterity (e.g., Carmeli, 2008; Carmeli and Schaubroeck, 2006; Lubatkin *et al*., 2006). Despite the strong evidence base attesting to the positive effects of behavioral integration, when teams collaborate and coordinate the activities of multiple team members to reach decisions jointly, there are likely to be downsides. Indeed, the originator of the construct, Donald Hambrick, commented that "this group property can impede speed, diffuse responsibility, and waste managerial resources" (Hambrick, 1994, p. 189-190).

However, the theory and empirical evidence we present in the current article suggest the opposite—and far from being a slow and cumbersome team trait, we theorize that behavioral integration is a key driver of *both* decision quality and decision speed. Drawing from the social psychology literature, we provide a theoretical explanation concerning the "black box" which converts behavioral integration into decision quality and decision speed ((see figure 1).

Insert Figure 1 about here

Our first contribution is therefore to unravel and explain this black box, and our theoretical account contends that the within group "multi-way interchange" which epitomizes behaviorally integrated teams (Hambrick, 1994) fosters the social heuristic of information symmetry—that is to say team members have equal access to salient information. In turn information symmetry affects two fundamental team decision-making processes—on the one hand, it contributes to procedural justice in the decision-making process which helps to

efficiently build consensus and in doing so dampens distortive political behavior. On the other hand, information symmetry helps teams to develop a common language and shared understanding (Sutter, 2006) through the rapid synthesis of tacit knowledge distributed among team members (Heavey and Simsek, 2017). Indeed, information symmetry generates a wide pool of information, ideas, and hypotheses in a short timeframe, thereby speeding up the decision process while at the same time increasing the probability of reaching an effective judgment (Bachrach and Mullins, 2019; Heavey and Simsek, 2015). In this way behavioral integration facilitates the rapid processing of more information, contrary to the popular view that fast decision-making necessitates "frugal" information processing.

The importance of behavioral integration is perhaps best illustrated with an analogy. Take for instance a team of medical professionals charged with caring for a patient with multiple organ failure and requiring urgent admission to the intensive care unit (ICU) (example adapted from Schippers, Edmondson, and West, 2014). The team faces considerable challenges pertaining to the rapid and accurate diagnosis and treatment of the patient to prevent imminent loss of life. The team's decisions though, may be excessively influenced by the ICU consultant, who sits at the apex of the hospital and is similar in some ways to CEOs. Conversely, the team might be inadequately influenced by a respiratory physician particularly if their input is not requested or valued despite them possessing unique information about the patient's symptoms. Consequently, the team would fail to integrate and develop implications of the full repertoire of information held by its members (Woolley, Gerbasi, Chabris, Kosslyn, and Hackman, 2008). Similarly, team conclusions may not be updated in the presence of new information, if, for example, the ICU consultant's preferences dominate, thereby restricting discussion of alternative diagnoses and treatments. Worse still, as other team members' perspectives are sidelined, the team naturally becomes divided and dysfunctional. As we theorize in this article, behavioral integration enables teams to avoid

such information failures and intrateam dysfunctionality, through continual multiway interchange enabling the real-time integration of the full extent of information, assessments, concerns, or hunches distributed within the team.

Strategic decisions have been characterized as inherently uncertain (Shepherd and Rudd, 2014), and while empirical evidence shows that decision uncertainty reduces information exchange while stimulating distortive political behavior (cf. Dean and Sharfman, 1993; Papadakis *et al*., 1998), there is little theory and evidence concerning how organizations can cope with the uncertainty facing organizations throughout the world. Indeed, teams often struggle to integrate different opinions and preferences because they give rise to social categorization processes and intergroup bias—so called "in-groups" and "out-groups" (Miller *et al*., 2022; van Knippenberg *et al*., 2004) resulting in an inability to exchange and integrate information (Miller, Burke, and Glick, 1998). Our second contribution, therefore, is to provide a novel theoretical explanation concerning how behavioral integration acts as the central generative mechanism equipping teams with vital mechanisms to withstand uncertainty. First, behaviorally integrated teams interact and collaborate incessantly and intensely which renders team members more open to the views of others and more willing to subrogate their personal preferences for the good of the team (Allport, 1954; Carmeli & Shteigman, 2010). As such, behavioral integration offers a new theoretical explanation for why some teams are able to cope in the face of uncertainty, while others experience detrimental effects. Further, behaviorally integrated teams are characterized by continual multiway interchange which synthesizes the tacit knowledge of team members to formulate a viable—if not optimal—way forwards but does so efficiently without wasting time and resources analyzing decisions that are simply not analyzable (see figure 2). At the same time, decision speed is safeguarded since precious time is not squandered on interpersonal conflict and hostilities. We thus extend knowledge of *when* the benefits of

behavioral integration for decision quality are most pronounced—namely, when faced with task uncertainty, and we argue that the continuous multiway interchange characterizing behaviorally integrated teams is of even greater importance in the face of uncertainty.

Insert Figure 2 about here

In the sections that follow we provide a general discussion of the "speed-accuracy" trade-off and introduce the concept of behavioral integration. This is followed by a presentation of our conceptual framework and research hypotheses, and we then describe our research methods comprising a quantitative study using a dataset of 117 strategic decisions. Throughout the manuscript we also integrate the results of six in-depth interviews with top managers to illustrate the important mechanisms engendered by behavioral integration. We conclude the paper by discussing the contributions and limitations of this study and outlining an agenda for future research.

Theoretical Background

Decision speed and decision quality

Decision quality—defined as the extent to which a decision achieves its intended objectives and positively contributes to organizational performance (Amason, 1996)—and decision speed each have profound implications for organizational performance (Forbes, 2007; Souitaris and Maestro, 2010). Schumpeterian perspectives of competitive advantage emphasize the importance of decision speed relative to rivals (Clark and Maggitti, 2012), and decisions must be made quickly enough to keep pace with the rate of change in the external environment (D'Aveni, 1994; Galbraith, 1973). Several studies have demonstrated that the ability to make strategic decisions quickly is a key determinant of firm performance,

particularly in dynamic contexts (e.g., Baum and Wally, 2003; Eisenhardt, 1989; Judge and Miller, 1991). However, recent evidence suggests that the relationship between decision speed and quality appears even more complex than previously considered, and Shepherd *et al* (2021) show that the positive relationship between decision speed and quality is entirely contingent upon levels of environmental dynamism and munificence and is in fact negative in dynamic and hostile environments. An important extension of Shepherd *et al*'s (2021) findings would be to identify the antecedents of decision speed, and while prior research has theorized determinants of fast decision-making (e.g., Clark and Maggitti, 2012; Wally and Baum, 1994) an important gap remains concerning how decision speed can be accelerated without a corresponding decline in decision quality. Further, while the focus of Shepherd *et al*. (2021) was on environmental contingencies, which are often the focus of strategy research, other important contingencies, such as task or decision characteristics have not been considered.

In today's highly uncertain world, a teams' ability to craft high-quality strategic decisions quickly is vital for firm survival and to prevent organizational decline (Carmeli and Schaubroeck, 2006; Forbes, 2007). However, it remains unclear how various decision processes and behaviors influence decision speed and, more specifically, how top managers can make high-quality strategic decisions rapidly. On the one hand, fast decision-making may diminish decision quality and performance if information elaboration is sacrificed (Elbanna, 2018; Kahneman, Slovic, and Tversky, 1982). Indeed, accelerated decision speed can reduce decision accuracy (Perlow, Okhuysen, and Repenning, 2002; Forbes, 2005). However, conducting extensive analyses (Schweiger, Sandberg, and Ragan, 1986), engaging in conflict resolution (Mintzberg *et al*., 1976), and consensus building (Dooley, Fryxell, and Judge, 2000)—while presumed to be elements of effective decision-making—have all been shown to slow the decision process. Therefore, a delicate balance must be struck between ensuring

the decision process is rigorous enough to minimize the risks of making a wrong move, yet fast enough to capitalize on opportunities and secure first-mover advantages. Interestingly, Eisenhardt (1989) highlights how fast and effective firms relied on real time information, such as operational quantitative indicators and competitors' R&D activity; and effective firms also shared power to avoid conflict. Thus, Eisenhardt's (1989) findings bring into question the notion of a speed-accuracy trade-off and indicate that decision processes that are both fast and accurate are in fact likely to process more, rather than less, information (Grandori, 2015), which runs contrary to the popular view that fast decisions must be "frugal" in terms of information processed.

Behavioral integration

Behavioral integration is "a significant refinement to Upper Echelon theory" (Halevi *et al*., 2015, p.225) capturing the extent to which a firm's high-level executives behave as a true team, as opposed to existing as a collection of "semiautonomous 'barons,'… having little to do with each other" (Hambrick, 2007, p. 336). Behaviorally integrated top managers collaborate closely, interact frequently, and openly share ideas and reach decisions jointly (Carmeli and Schaubroeck, 2009). Indeed, the hallmark of teams with higher levels of behavioral integration is "multiway interchange" (Hambrick, 1994, p.189) which yields two significant, though previously overlooked benefits; namely, enabling the social heuristic of information symmetry within the team, and also the development of a common language. Both are advantageous in terms of speeding up decision-making, as we argue in detail later on, yet both are also important for safeguarding decision quality, especially amidst uncertainty.

Behavioral integration is the "degree to which the group engages in mutual and collective interaction" (Hambrick, 1994, p. 188), and Hambrick (1994, p.189) argues that it differs from integration *per se*, since "integration, as a term by itself, has too passive a connotation, implying mere commingling or co-location". Further Hambrick (1994) distinguishes behavioral integration from social integration, as social integration reflects the degree to which an individual is psychologically linked to others in a group, and the commonly deployed O'Reilly, Caldwell, and Barnett (1989) measures capture elements such as satisfaction with coworkers and off-the-job socialization. As such, social integration refers more to affective rather than substantive group properties. In contrast, behavioral integration is a substantive and action-oriented team characteristic (Li & Hambrick, 2005) with a task focus, manifest in information exchange, collaborative behavior, and joint decision-making. Hence a behaviorally integrated team demonstrates dynamic task-focused behaviors such as flexibility (e.g., switching responsibilities between team members), multiway interchange, and robust issue resolution, all of which pave the way for efficient and effective decision-making while circumventing some of the pitfalls associated with especially socially cohesive teams. This dynamic task-focused behavior is encapsulated in the following quote from a CEO who told us: *"we get into a deep dialogue about the decision, so we've done a lot of the thinking and the challenging before you get down to making a decision"*, or as another CEO put it, in his team the mantra is: *"get everybody talking about the decision."*

Indeed, leadership and upper echelons researchers have capitalized on the explanatory capability of behavioral integration, with several studies linking it to firm-level outcomes (e.g., Carmeli, 2008; Carmeli and Schaubroeck, 2006; Lubatkin *et al*., 2006). Despite the seemingly universal positive effects of behavioral integration, some contend there are downsides. As Hambrick (1994, p.189-190) explains: "we make no claim that behavioral integration is a universal ideal for all top groups" and goes on to provide the vivid example of

executives "forced to sit through semi-weekly management committee meetings consisting largely of lengthy status reports from peers heading up unrelated activities" (Hambrick, 1994, p.200). In this example it is easy to see how time could be squandered and speed sacrificed. However, our theory contends that teams with higher levels of behavioral integration are much less formal in their communication than in the previous example, and also communicate far more regularly, to the point of the dialogue being almost constant—similar to the continuous communication between pilots described by Grandori (2015). Paradoxically, and as illustrated in figure 1, far from slowing decision-making this provides important benefits for speeding up decision-making. For instance, it enables the social heuristic of information symmetry within the team which lessens resistance and distortive politics (Roberto, 2004), while also helping the team to develop a common language and quickly reach a shared understanding (Sutter, 2006). This ultimately facilitates the rapid synthesis of tacit knowledge distributed among team members (Heavey and Simsek, 2017).

Hypotheses

Behavioral integration and decision quality

Behaviorally integrated teams are action oriented, and task focused, with team members regularly switching and sharing task-related responsibilities. Indeed, greater levels of behavioral integration play a key role in enabling the social heuristic of information symmetry —that is the equal distribution of salient information and knowledge within the team. This information equality helps to imbue the decision process with a sense of fairness and procedural justice (Kim and Mauborgne, 1993) which helps to reduce distortive political behavior. Indeed, information *asymmetry* has significant symbolic and political risks for teams since withholding, distorting, and manipulating information are common political

tactics aimed at influencing others and the decision at hand which ultimately undermine decision outcomes (Bourgeois and Eisenhardt, 1988; Dean and Sharfman, 1996; Elbanna and Child, 2007). Roberto (2004) details "pre-selling" and coalition building behavior of executives, who furnished some but not all team members with information prior to crunch meetings. Such behavior fuels perceptions of injustice, and casts doubts on the identities of excluded individuals as integral team members—making them question whether they are valued and what influence they have. The net effect of such information inequality is hostile, counterproductive conflict that impedes consensus and gives rise to disenfranchised team members who might seek to subvert, delay, or sabotage the decision (Shepherd *et al*., 2020). By contrast, information symmetry and the ability to switch and share task-related responsibilities engenders intra-team trust and reduces relationship conflict (Simons and Peterson, 2000) which enables disagreement to be channeled constructively—for example, by challenging and critiquing one another's views to help build a more realistic appraisal of the situation and develop a broader consideration of alternative solutions. The importance of information symmetry for team functioning was emphasized by the CEO of a UK chemicals manufacturer who explained: *"the spontaneity of picking up an issue and people feeding off it…we usually come up with better solutions…The earlier people are engaged, you get to understand their emotional points…you have the options; you can't always get everything right but you've got a greater chance I think if you have engaged people early and developed understanding."*

Higher levels of behavioral integration are manifest in multi-way interchange and the switching and sharing of tasks and responsibilities. This aids the development of a common language and helps to foster a deeper understanding of strategic issues since a common shared language and understanding are essential elements in communication between team members who have the overall goal of exchanging knowledge (Sutter, 2006). Indeed,

language issues arise not simply from speaking a different language, but from different meanings of the same words. Allio (2006, p.16) provides a relevant example concerning an automotive parts supplier: “the management team discovered that even ‘profit’ had different meanings for different constituencies within the organization. For the sales team, profit meant gross margin, while for the production group, it meant operating margin; the finance team, meanwhile, was managing for free cash flow.” Contrast this with a slick emergency medical team of doctors and nurses incessantly barking abstruse technical terms at one another, and it is easy to grasp the performative benefits accruing from a shared common language. Indeed, understanding is vital for high quality strategic decisions since it provides a common vision, and as Amason (1996, p. 125) explains, decision makers “must both understand and commit to the decision.” When team members can communicate with clarity, task tension, uncertainty, and ambiguity are eased, which strengthens camaraderie (Shalev, 2015).

However, in the absence of a commonly understood language there is considerable scope for misinterpretation and misunderstanding. Further, a clear theme emerging from our interviews was the differences in idiosyncratic terminology and language across different teams. For example, one CFO explained the term *“covenants”* had been adopted within the team to convey complex financial constraints and considerations during strategic decision-making. In another example, a CEO explained that in his team *“getting their boots dirty”* and *“where do we want to play?”* were phrases that had evolved as standard parlance when evaluating international expansion opportunities. The teams which had developed an idiosyncratic lexicon also appeared to have a strong sense of “esprit de corps”, or collective efficacy—entirely consistent with theories of social identity. Indeed, the common team language developed within behaviorally integrated teams provides a tangible cue to the strong sense of identity and belonging among team members.

Multiway interchange, and the information symmetry and common language that it engenders are also important since cognition is socially distributed among team members (Lewis and Herndon, 2011; Wegner, 1987; Weick and Roberts, 1993), with each team member possessing potentially salient functional and experiential knowledge. Hence, behavioral integration serves as the central generative mechanism enabling teams to access and combine distributed knowledge and expertise to derive high quality strategic decisions. Given that strategic decisions are inherently complex, behavioral integration helps ensure that teams can match those complexities, and the resolute task focus ensures differences of opinion do not escalate into interpersonal conflict. As Weick (1987, p.112) observed, based on his studies of high reliability organizations, when teams "have less variety than is requisite to cope with the system, they miss important information, their diagnoses are incomplete, and their remedies are short sighted."

Furthermore, because teams with greater levels of behavioral integration benefit from social mechanisms such as psychological safety and reciprocity (Lubatkin *et al*., 2006), team members' reluctance to share tacit knowledge will dissipate, such that the team can draw on the full range of members' insights and experiences and combine this knowledge in ways that can create novel or creative insights (Hambrick, 1998). In turn, because higher levels of behavioral integration mean teams can draw on the full extent of the team's knowledge base, they enhance their prospects of identifying an effective decision option (Friedman *et al*., 2016; Ling *et al*., 2008).

In especially socially cohesive teams, there might be a risk of group think (Janis, 1982), where team members reduce their independent critical thinking and instead the group displays excessive "like-mindedness and striving for unanimity" (Hambrick, 1995, p.195) which jeopardizes decision quality. However, behavioral integration differs conceptually and operationally from similar constructs such as social integration and cohesion (cf. Simsek *et*

al., 2005), since cohesion includes "a general orientation toward developing and maintaining social relationships within the group" (Carron, Widemeyer, and Brawley, 1985, p.248) and social integration captures group behavior such as off-the-job socialization. Indeed, it is this passive element of cohesion and social integration—emotional attraction—that risks group think, whereas task-orientated cohesion, with a clear orientation towards achieving the group's aims and objectives (Carron *et al*., 1985) circumvents group think (cf. Bernthal and Insko, 1993). This task orientated dimension of cohesion is most likely to co-vary with behavioral integration since both are substantive and task focused—with a clear and resolute focus on achieving the group's task related objectives—and hence any tendency to overly focus on maintaining affect-based social relationships is attenuated (Hambrick, 1994; Simsek *et al*., 2005). In sum, behavioral integration greatly reduces the threat posed by information failure, and as such, the preceding arguments all suggest the following hypothesis:

Hypothesis 1: Behavioral integration will be positively related to decision quality.

Behavioral integration and decision speed

The two afore mentioned key mechanisms engendered by behavioral integration, namely, information symmetry and the development of a common team language, are also likely to provide significant benefits in terms of speeding up team decision-making. While group processes which build consensus and ensure equitable input from all team members to arrive at a joint decision might, on the face of it, slow decision-making (Homberg, Krohmer, and Workman, 1999), owing to time consuming negotiation where views and preferences are discussed and debated (Baum and Wally, 2003); we outline a series of theoretical arguments that suggest that the opposite is true for teams with greater behavioral integration.

When teams can employ the information symmetry heuristic, there is less scope for distortive political behavior (Edmondson, 2004). This provides significant benefits for speeding up decision-making since distortive politics are a major drag on decision-making pace as executives become distracted and embroiled in time consuming tactics such as lobbying, forming coalitions and co-opting (Elbanna and Child, 2007; Mintzberg *et al*., 1976). Indeed, the information symmetry heuristic, though yielding significant information processing advantages, also offers considerable symbolic and political value. Ostracized team members not in receipt of information will experience perceptions of injustice, doubt their value, and question whether they can influence the decision process. This disenfranchisement will result in attempts to disrupt, delay, or even sabotage the decision (Eisenhardt and Bourgeois, 1988; Farrell and Petersen, 1982) with negative consequences for consensus formation, overall group efficiency (Edmondson, 2004) and diminished decision speed. However, the information symmetry engendered by behavioral integration enables the rapid generation and synthesis of an array of information, ideas, perspectives, and hypotheses which speed up the decision process. Indeed, when teams can coordinate and integrate their specialized knowledge, it enables the fast and efficient generation and consideration of alternative information and hypotheses (Akgun et al., 2006) as well as giving the team trust and confidence in the final judgment, all of which enables timely collective action and provides the team with a significant speed advantage (Heavey & Simsek, 2015).

The second pivotal mechanism engendered by high levels of behavioral integration is the development of a team common language, which in addition to enhancing understanding, further speeds up team processes (Margerison, 2001). Teams with a common language minimize time spent having to fully explain concepts, which owes to the concept of "chunking"—that is, through a process of compartmentalizing, team members communicate using phrases and terms to represent much more complex concepts and interrelations between

concepts (Shalev, 2015), which would otherwise take considerable time to explain and for team members to comprehend. Indeed, teams without a common shared language suffer from friction and slowness during the decision-making process owing to multiple different interpretations of the plans, processes, and procedures (Allio, 2005). A common language develops naturally through shared experiences (e.g., sharing and switching tasks and responsibilities) and informal interactions, such as, for example, insider jokes. Ultimately, a shared common language fosters a mutual understanding that outsiders do not have and helps to create trust and a team identity (Shalev, 2015). In sum, teams with a shared common language benefit from a sense of collective efficacy, potency, and confidence in tackling difficult decisions (Carmelli *et al*., 2011).

Teams with greater levels of behavioral integration also have higher levels of psychological safety (Edmondson *et al*., 2003), and so any conflict rarely becomes personal (Carmeli and Schaubroeck, 2006), and contentious issues are addressed promptly because members constantly discuss their problems and needs with one another and maintain a resolute task focus. Indeed, teams benefitting from higher behavioral integration also have a high level of task orientation (Simsek *et al*., 2005), such that team members proactively resolve conflicts and are prepared to switch responsibilities, helping to expedite decision-making (Eisenhardt, 1989). Moreover, decision makers step in to help one another and share tasks and responsibilities to meet deadlines (Simsek *et al*., 2005), which further expedites decision-making; and easy access to one another's knowledge also quickens the pace of decision-making. Finally, the continual exchange of ideas and solutions between team members means they address issues in real time (Eisenhardt, 1989), rather than waiting until a formal meeting is scheduled.

In contrast, teams with lower levels of behavioral integration instead resemble "semi-autonomous barons" (Hambrick, 2007, p. 336) with limited trust, which gives rise to more

personal, conflictual, and distortive political processes that increase the risk of viewpoints being sidelined, and members responding through attempts at delaying or even sabotaging the decision (Shepherd *et al*., 2020). When teams suffer from lower levels of behavioral integration, the decision process can be cumbersome; communication between team members is infrequent and distilled (Lubatkin *et al*., 2006), and the information needed to make the decision may be distorted or withheld. Consequently, the decision-making process suffers from slowness and friction (Hambrick, Cho, and Chen, 1996). Therefore, the preceding arguments suggest the following hypothesis:

Hypothesis 2: Behavioral integration will be positively related to decision speed.

The role of behavioral integration under varying levels of decision uncertainty

Perrow (1967) suggests that task uncertainty comprises two dimensions: the absence of well-established techniques for performing the task, and the degree of variety or novelty in the task. In the context of strategic decisions, uncertainty manifests in a lack of clarity concerning cause-effect relations, an inability to predict the probability of future states or events which would favor one decision alternative over another, and unpredictability in the outcomes of the decision (Milliken, 1987). Decision uncertainty poses profound challenges for teams, and evidence demonstrates that it causes dissent and disagreement which reduces procedural rationality (Dean & Sharfman, 1993)—defined as "the extent to which the decision process involves the collection of information relevant to the decision and the reliance upon analysis of this information in making the decision" (Dean and Sharfman, 1996, p.373)—while also stimulating potentially destructive political behavior (Papadakis *et al*., 1998).

Teams struggle to cope with the differences of opinion and dissent that naturally arise amidst uncertainty, since such intrateam disagreement paves the way for harmful social categorization processes and intrateam bias as "in-groups" and "out-groups" emerge (Samba, van Knippenberg, and Miller, 2018). Consequently, interpersonal relations suffer, the team finds it impossible to exchange and integrate information (Miller *et al*., 1998; 2022), and ultimately, decision quality and speed suffer. However, behaviorally integrated teams benefit from intense and incessant interaction, and the high frequency of intra-team contact prevents the emergence of in-groups and out-groups (Allport, 1954), and means individual team members are more open to the ideas of others and thus willing to subrogate their personal preferences for the greater good of the team (Gaertner and Dovidio, 2000; Gaertner *et al*., 1994; Stone and Crisp, 2007). Thus, the multiway interchange engendered by behavioral integration provides a unique mechanism—and a unique point of difference from the majority of teams—which facilitates the rapid and efficient integration of different information and prevents damaging social categorization processes from disrupting and impeding information integration; ultimately benefitting not only decision quality, but also the speed of decision-making.

When strategic decisions are highly uncertain, crafting high quality responses demands the sharing, making sense of, and recombination of distributed, idiosyncratic knowledge and expertise (Post *et al*., 2022)—which we argue, is more likely in teams who collaborate closely and place emphasis on joint decision-making. Indeed, higher levels of behavioral integration create the team processes necessary for information sharing and for recombination of knowledge (Harrison *et al*., 2003; Kirkman and Rosen, 1999; Srivastava *et al*., 2006). When faced with a decision that does not fit within a team's pre-existing repertoires (akin to Perrow's notion of task variety), teams face having no executable cognitive script to rely on and, thus, lack a known or immediately identifiable solution

(Sommer and Pearson, 2007). Accordingly, safeguarding decision quality requires not just that team members participate in the decision-making process and share their individual information (De Dreu *et al*., 2008; Waller, 1999; Wang *et al*., 2014), but also that they engage in collective information processing (Waller, 1999; Wang *et al*., 2014), reconfiguring new and unexpected information to generate a satisfactory decision (Post *et al*., 2022), which is made possible through the multiway interchange associated with behavioral integration.

Relatedly, inter-subjective sense-making, which is the joint composition of interpretations (Suthers, 2006), is more likely when team members are empowered (Patriotta and Spedale, 2009) rather than directed by a CEO. To make effective strategic decisions in the face of uncertainty, teams depend on collective, inter-subjective sense-making (Uitdewilligen and Waller, 2018; Weick, 1993). Indeed, real-time, almost constant multiway communication among team members helps the development of shared, interpretive schemas to deal with uncertainty (Weick, 1993). In contrast, less behaviorally integrated teams, operating under directive leaders, have a narrow perception and instead rely on habitual responses and routines (Weick, 1995), where reality is constructed through authoritative acts (Weick, 1995) and CEOs interpret the situation for their team members (Morgeson *et al*., 2010).

Thus, we contend that when faced with decision uncertainty, teams with greater behavioral integration are better placed to exploit the full extent of the team's knowledge base by rapidly synthesizing tacit knowledge distributed throughout the team to generate a broad repertoire of viable responses (Halevi *et al*., 2015). The preceding arguments suggest the following hypotheses:

> **Hypothesis 3a:** Behavioral integration is a necessary condition for high decision quality under high decision uncertainty.

Hypothesis 3b: Behavioral integration is a necessary condition for high decision speed under high decision uncertainty.

Methods

Sample and procedure

We collected primary data to test our hypotheses, given the well-documented issues with utilizing demographic proxies as surrogates for the underlying traits and behaviors of top managers (cf. Priem *et al*., 1999). We restricted the sample's firm size to between 50 and 500 employees, because firms with fewer than 50 employees represent a unique context where it is often individuals rather than teams making strategic decisions (Brouthers *et al*., 1998) and firms with over 500 employees have highly complex organizational systems that lessen the influence of the top management team (Lubatkin *et al*., 2006; Simsek *et al*., 2005).

Consequently, 250 companies were randomly selected from the FAME database, which provides legal and financial information pertaining to 11 million UK companies, and we were able to make initial contact with 236 of these firms. During a series of meetings and telephone conversations with the legally designated officer in each firm, we identified two key top management team informants in each firm, who had major involvement and responsibility for a recent strategic decision.

During meetings and telephone conversations with the identified informants, we discussed each focal strategic decision, ensuring the nominated decisions met academic definitions of a strategic decision i.e., "fundamental decisions which shape the course of the firm" (Eisenhardt and Zbaracki, 1992, p. 17) and examples include significant acquisitions or new market entry decisions.

We subsequently sent separate surveys to the two top managers in each of the 236 firms, of whom 117 firms (50%) returned usable responses (i.e., fully completed questionnaires from two top management team members). Strategic decisions in our sample fell into four types: new business investment decisions such as mergers and acquisitions (21%); investments in capital equipment such as new premises (10%); investment in the marketing domain such as support for new product launches (46%), and internal reorganization investments such as corporate restructuring (23%).

Measurement

We captured our dependent variables, decision speed and decision quality, as well as our focal independent variable behavioral integration from both informants to assess the reliability of the data. Decision quality is the extent to which a decision attained its intended objectives and positively contributed to organizational performance (Amason, 1996). We follow Amason's (1996) widely adopted approach, measures, and justification for implementing perceptual measures of decision quality, and while asking informants to rate decision quality might lead to a biased retrospective account, a perceptual measure was favored because objective measures for any one individual decision are hard to isolate. Indeed, a successful decision in one context might produce altogether poorer results if that context suddenly shifts. Further, using objective measures assumes that each decision has an equal chance of yielding favorable results, which ignores the possibility that decision makers might be forced to select between a series of equally undesirable alternatives. In such an instance, an objective measure of decision quality would suggest lower decision quality than compared to a team facing a series of desirable choices. However, it may well have been the case that the first team chose appropriately and emerged better than expected, whereas the

second team reached an ineffective decision and emerged worse than expected. Therefore, the most appropriate way to assess the quality of an individual strategic decision is to ask those who have directly witnessed its effects, and who comprehend its broader context to judge, across several dimensions how the decision turned out (Amason, 1996; Elbanna and Child, 2007; Olson *et al*., 2007). Finally, we emphasized to informants that responses need not concern only successful decisions, and that responses concerning unsuccessful decisions would be equally valid.

To mitigate against common method bias, where possible we used secondary data from FAME. The supplementary file summarizes the measures and data sources used. We operationalize decision uncertainty using Elbanna and Child's (2007) measures to capture uncertainty concerning (1) the actions that should be taken and (2) the information that should be collected to make the decision. We also include a comprehensive set of covariates alongside our core constructs. First, we account for procedural rationality, given its widely presumed influence on decision outcomes (Elbanna, 2006) and because it is likely to be a natural consequence of behavioral integration which thus clarifies the "black box" converting behavioral integration into decision outcomes.

We also controlled for firm size and past firm performance using secondary data drawn from the FAME database, because larger firms have greater resources at their disposal, which again influence decision outcomes (Rodrigues and Hickson, 1995) and because recent performance influences both behavior and prospects of success (Elbanna and Child, 2007). We include measures to capture the time pressure associated with each decision, because firms often face pressure to make an immediate decision in response to extreme threats and crises (Papadakis *et al*., 1998). We also account for power distribution because some CEOs centralize power, thereby expediting decision-making by not opening up the decision process to other team members (Cao, Simsek, and Zhang, 2010). We include measures for

environmental dynamism and munificence to capture levels of change and resource availability in the external environment. Finally, given the heterogeneity in the strategic decisions in our sample, we adopted the classification of Papadakis *et al*. (1998) and operationalized a series of dummy (0/1) variables for each of the four decision types (new business investment decisions, investments in capital equipment, investment in the marketing domain and internal reorganization investments).

Reliability and validity

Table 1 shows the scale characteristics and correlations between variables.

Insert Table 1 about here

We tested reliability and validity for the measures based on item loading, Cronbach's alpha, and average variance extract (AVE). The alpha coefficients range from 0.72 to 0.95 (see table 1) for all scales, demonstrating a satisfactory degree of construct reliability (Nunnally, 1978). Construct validity is also attained as the AVEs (0.62-0.91) exceeded commonly recommended thresholds (Bagozzi and Yi, 1988). Further, discriminant validity is also established based on the Fornell and Larcker (1981) criterion and cross loading. All items loaded highest on the corresponding latent constructs. The square root of the latent variable AVEs exceed the corresponding latent variable correlations in each instance (see Table 1).

Common method bias can be a concern owing to respondents' social desirability and consistency motives (Podsakoff, MacKenzie, and Podsakoff, 2012). We relied on both design and testing approaches to address this. Specifically, we followed their recommendation to solicit measures from different sources and we carefully reviewed the scales used to address potential ambiguity. We then used Harman's single factor test (Podsakoff and Organ, 1986) to assess common method bias *post hoc*. The results show seven factors and not one distinct factor, and also indicate that the first factor explains only 15.9 percent of the total variance. Therefore, we conclude that common method bias is unlikely to be influencing our results.

Aggregation

Consistent with prior approaches (e.g., Carmeli and Schaubroeck, 2006; Carmeli *et al*., 2011) we calculated the intragroup reliability using both within group agreement (rwg) (James, Demaree, and Wolf, 1984) and Intraclass Correlations (ICCs) to assess group member agreement. The ICC(1) and ICC(2) values are: behavioral integration .53 and .69 (rwg = .84), decision quality .70 and .82 (rwg = .89), decision speed .59 and .74 (rwg = .86), and procedural rationality .53 and .70 (rwg =.88). Since these values exceed conventional standards (Bliese, 2000), we therefore aggregated each pair of responses.

Analyses

We used multiple moderated hierarchical regression to test our hypotheses, and variance inflation factor scores varied from 1.03 to 1.46, suggesting that multicollinearity is not influencing the results (O'Brien, 2007). The models shown in table 2 include 3 steps. The first step is a control-effects only model while step 2 also includes the direct effects. Step 3,

the model we rely on, includes the controls, direct effects, and interactions—allowing us to test all four hypotheses.

Results displayed in table 2 (step 3 for decision quality) confirm hypothesis one, and behavioral integration is indeed positively and significantly related to decision quality ($\beta = .20$, $p < .05$). We also note the statistically significant amount of additional variance in decision quality explained by behavioral integration as evident in the ΔR^2 between model 1 and 2 ($\Delta R^2 = 0.04$, $p < 0.05$). Also supporting hypothesis 2 (see step 3 for decision speed), behavioral integration is positively and significantly related to decision speed ($\beta = .33$, $p < .01$). Again, step 2 of the model demonstrates the statistically significant amount of additional variance in decision speed explained by behavioral integration ($\Delta R^2 = 0.08$, $p < 0.01$).

Insert Table 2 about here

Table 2 (step 3 for decision quality) further shows that, confirming hypothesis 3a, the interaction between decision uncertainty and behavioral integration is statistically significant ($\beta = .19$, $p < .05$) and is in the predicted direction, and explains a statistically significant amount of additional variance in decision quality ($\Delta R^2 = 0.03$, $p < 0.05$). This effect is shown in figure 3. Further, using a simple slope test, it can be seen that when behavioral integration is low, the relationship between decision uncertainty and decision quality is strong and negative ($t = -2.58$, $p = 0.01$). However, when behavioral integration is high, there is little relationship between decision uncertainty and decision quality ($t = 0.5$, $p = 0.50$). Thus, the overall pattern of results supports our theory that behavioral integration is a key mechanism enabling teams to withstand decision uncertainty and safeguard decision quality.

Insert Figure 3 about here

As shown in table 2 (step 3 for decision speed), we do not find support for hypothesis 3b since the interaction between decision uncertainty and behavioral integration is not statistically significant in predicting decision speed ($\beta = -.12$, $p > .05$) and does not explain a statistically significant amount of additional variance in decision speed ($\Delta R^2 = 0.01$, $p > 0.05$).

Robustness Check

As our results indicate that one of the controls, i.e., procedural rationality, is also significantly associated with decision quality ($\beta = .45$, $p < .01$) and behavioral integration ($\beta = .36$, $p < .01$), this might suggest a mediation effect. As such, we conducted a robustness check, and we examined the indirect effect with the bias-corrected confidence intervals (BCCI), following the approach of Zhao, Lynch, and Chen (2010). The mediating effect is significant only if zero does not appear between the lower and upper bound of the indirect effect (MacKinnon, Lockwood, and Walliams, 2004). Table 3 shows these results and indicates no significant mediation (Zhao *et al*., 2010).

Insert Table 3 about here

Discussion

Our theory and evidence extend decades of research examining the speed-accuracy trade-off by unpacking some of the complex behaviors, mechanisms, and processes which facilitate fast yet accurate team-based decision-making. This represents an important contribution since decision speed and quality are widely assumed to be in tension (Forstmann *et al*., 2008; Garret, 1922; Hick, 1952; Ollman, 1966; Pachella, 1974; Ratcliff and Rouder, 1998; Schouten and Bekker, 1967; Wickelgren, 1977; Woodworth, 1899), with the general

assumption being that slower decisions are more accurate than faster decisions (Donkin, Houpt, and Little, 2014). However, ever greater global economic turbulence necessitates teams being able to make strategic decisions that are both fast *and* effective. Further complicating matters, the literature presents a puzzle by suggesting that firm performance requires managers to make high quality strategic decisions (Forbes, 2007), while also advocating they make fast decisions (Eisenhardt, 1989; Shepherd *et al*., 2021); yet there has been limited theory development to explain how, if at all, these contradictory outcomes might be attained. Our theoretical account thus helps to explain how behavioral integration acts as the pivotal mechanism facilitating fast yet effective team-based decision-making.

Our study also helps to advance the upper echelons' literature, which has elucidated several positive firm outcomes engendered by behavioral integration, including ambidextrous orientation (Lubatkin *et al*., 2006), service quality, and performance (Carmeli, 2008). There has however, remained somewhat of a "black box" surrounding the mechanisms, behaviors, and processes which transmit behavioral integration to positive firm outcomes, and despite the many reported positive effects, extant accounts also suggest downsides. Hambrick (1994) himself argued that behavioral integration might not be universally desirable and in some contexts, it could waste precious time. We contribute to knowledge by providing a theoretical account reflective of the current context in which teams are situated—far removed from the early to mid-1990s where fax machines were the de-facto mode of distance communication, not WhatsApp, Microsoft Teams, nor even email. We assert that behaviorally integrated teams—in a modern context—are far less formal in their communication than Hambrick's (1994) original conceptualization and instead, enabled by technology, are characterized by an almost continuous flow of information between team members. Hence, far from slowing decision-making, this paves the way for rapid conflict-free decision-making; for example, by ensuring information symmetry which lessens resistance and distortive politics (Roberto,

2004), while enabling the development of a common language and shared understanding (Sutter, 2006) which facilitates rapid synthesis of tacit knowledge distributed among team members (Heavey and Simsek, 2017). Therefore, behavioral integration facilitates the processing of more information, which contrasts the popular fast and frugal heuristics tradition (e.g., Gigerenzer and Gaissmaier, 2011; Todd, Gigerenzer, and the ABC Research Group, 2012).

We make a further contribution to the behavioral integration literature, which is to establish decision uncertainty as a key boundary condition. Establishing boundary conditions is important because it fosters the development of theory, increases the validity of organizational research, and helps to mitigate the research-practice gap (Busse, Kach, and Wagner, 2017). Our article thus extends knowledge of when the merits of behavioral integration for decision quality are most strongly felt.

Our research further connects with the upper echelons' literature, which is replete with studies isolating key demographic influences on firm performance, an approach which "sacrifices construct validity for measurement reliability, and forsakes explanation for prediction" (Shepherd and Rudd, 2014, p. 360). We begin to address this by explaining some of the team heuristics that translate behavioral integration into decision speed and quality. Indeed, our qualitative data supports the notion that behavioral integration enables and enhances certain social heuristics, with one CEO stressing his "*14 eyes rule*", which though runs contrary to the "keep the team small" heuristic (Spalding, 2015; Wheelan, 2009), this participant rationalized this rule of thumb by stressing that the complexity of strategic decision-making demands involvement from a large number of team members. Further, the social heuristic of information symmetry echoes the equality heuristic studied in the negotiation and conflict management literature. The core idea is that equality enhances perceptions of justice which builds enduring relations and leads to successful outcomes

(Druckman and Wagner, 2016). Furthermore, it also stands to reason that the "superadditivity" heuristic might also be in play in behaviorally integrated teams, since such teams not only benefit from the different knowledge and expertise contained in the team, but they also benefit from a larger collective "toolbox" of heuristics (Page, 2007). Even in a behaviorally integrated team of just two top managers, such synergies might be felt: team member one brings one heuristic, team member two brings another, and if the two heuristics can be combined, the team has three available heuristics (Gigerenzer, Reb, and Luan, 2022). Thus, our theory and evidence explain how behavioral integration acts as an important team characteristic facilitating the effective use of team-based heuristics.

Our study also connects to the strategic decision-making literature and in particular with Eisenhardt's seminal program of research (Bourgeois and Eisenhardt, 1988; Eisenhardt, 1989; Eisenhardt and Bourgeois, 1988), and the key insight that fast and effective firms made extensive use of real time operational and environmental information. We add some additional contextual richness, grounded in social psychology, to identify a key enabling team characteristic that facilitates and enhances the real-time elaboration of information observed by Eisenhardt (1989). We also build on the insights of Bourgeois and Eisenhardt (1988) who observed that power distribution was a factor influencing levels of political behavior, and our theory and evidence refine this with a granular account of the team characteristics and behaviors that suppress potentially damaging politics.

Also, with reference to the strategic decision-making literature, decision speed is a central construct and has been shown to influence both decision quality and firm performance (e.g., Eisenhardt, 1989; Judge and Miller, 1991), though there are few studies which provide insights into the team-level behavioral capabilities which enable rapid decision-making. We therefore explain how behavioral integration helps teams to accelerate their team decision processes, which is especially important in dynamic and munificent environments (Shepherd

et al., 2021). Further, we extend Shepherd *et al*'s (2021) work in several important ways. First, we provide a theoretical account which opens up the black box of behavioral integration, and in doing so, also explains how this important team characteristic is not just a key antecedent of decision speed, but how it enables speed to be accelerated without a corresponding decline in decision quality. Finally, while Shepherd *et al*., (2021) focus on environmental contingencies as is common practice in strategy research (Shepherd & Rudd, 2014), we introduce decision, or task, uncertainty as a salient contingent influence when considering the determinants of decision speed and quality.

Managerial implications

A clear implication is that teams should commit to investing resources into building levels of behavioral integration, particularly those facing high uncertainty—and leaders have a central role to play given their responsibility in selecting, evaluating, inspiring, and coaching other team members (Lubatkin *et al*., 2006). Hiring and reward decisions thus should be taken with the explicit objective of improving the team's level of behavioral integration. Simsek *et al*. (2005) provides empirical evidence of the antecedents of behavioral integration, and hence these factors (e.g., leader collectivist orientation) should be considered during the hiring and promotion of leaders and other individuals to organizational teams. Similarly, incentive schemes could be utilized to explicitly reward team members for demonstrating collaborative behavior and joint decision-making.

A further implication is the need to identify and nurture team members with servant leadership styles, since such leaders more readily share power and stimulate the type of team climate which might foster behavioral integration (Spears, 1996). Finally, strategy away days could be helpful in building levels of behavioral integration between team members. Such

away days could involve formal team interaction training, where team members are formally taught how to function with greater unity with a focus on altering the team's communication style, reassigning roles, and nurturing coordination (Marks *et al*., 2000).

Future research and limitations

Although we designed our study carefully to provide valid and reliable results, it does have some limitations. For example, claims of causality could be strengthened through longitudinal research designs, where for example, data could be collected at multiple time points to enable the capture of inputs, team processes and dynamics, and outcomes. In addition, the mean average size of the organizations in our sample is 178 employees, which limits our ability to generalize our findings to either very large or very small firms.

Future research could extend and build on our findings in several ways. While the present study demonstrates that behavioral integration is a highly desirable team characteristic, research is still needed to explain how to achieve it. One potentially fruitful avenue for future research is to examine in detail the role of leadership in nurturing behavioral integration within teams. There are strong theoretical grounds to suppose that transformational leaders emphasize collective rather than individual interests and enhance team cohesion (e.g., Callow *et al*., 2009). Hence, exploring the role of leadership theories in fostering behavioral integration may be worthwhile. Further, since organizational teams are embedded in a broader context, integrative research examining multiple contextual antecedents pertaining to the team, task, firm, and external environment is likely to provide further theoretical insights into the determinants of behavioral integration. Relatedly, while the present study contributes knowledge of boundary conditions; theory should now focus on further developing knowledge of other moderators of behavioral integration, applying contextual frameworks, and testing contingent influences—including possible three-way interactions—at the environmental, firm, decision, and team levels.

Our theory, plus our quantitative and qualitative evidence, offer some initial insights into the various team behaviors, processes and rules that convert behavioral integration into decision speed and quality—such as multiway interchange, the social heuristic information symmetry, the development of a common language and the suppression of distortive politics. To develop a robust and coherent body of theory that can inform and aid management practice, a priority for future research should be to replicate our results—including both the direct and interaction effects reported. A further refinement might be to consider the timeliness of decisions, rather than speed *per se*, since speed might only be desirable to the extent there is pressure to make a fast decision. Thus, an important team competency might be the ability to accurately judge the time pressure associated with any given decision, and then to match their decision-making speed accordingly.

Finally, behavioral integration can also be used to study teams other than top management teams. Webster and Wong (2008) note, in the context of Human Resource Management, that teams can be co-located (traditional mode), virtual (completely distributed mode), or contain local and remote members (hybrid mode). Given that behavioral integration rests on communication and that communication is meaningfully different across such modes (e.g., Singh, Marinova, and Singh 2020), future research may consider how behavioral integration can be achieved across different communication modes or even if the effects of behavioral integration on decision quality and speed are the same since e.g., the use of email (instead of personal communication) allows accessibility and generates "multiway interchange" but reduces emotional cues and, perhaps, the likelihood of triggering social heuristics and the development of a common language. An intriguing aspect is the very possibility that behavioral integration is not just an attribute of a set of individuals but that it can be an organizational attribute. This raises the possibility that behavioral integration can be applied to study how "teams" of organizations come together to conduct specific tasks,

i.e., function theoretically as a temporary organization. Recent work in the field of marketing (e.g., Ghazimatin, Mooi, and Heide, 2021), has shown how integration roles in temporary organizations address issues of size or diversity. Adopting a behavioral integration lens might help to further understanding of how such roles can be best played. Therefore, based on our novel theoretical insights, we see no reason behavioral integration cannot be used fruitfully across a range of different types of teams at different organizational levels and also across different fields of study. In sum, behavioral integration should not be limited to the study of top management teams nor restricted to the context of strategic decision-making.

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Figures and tables

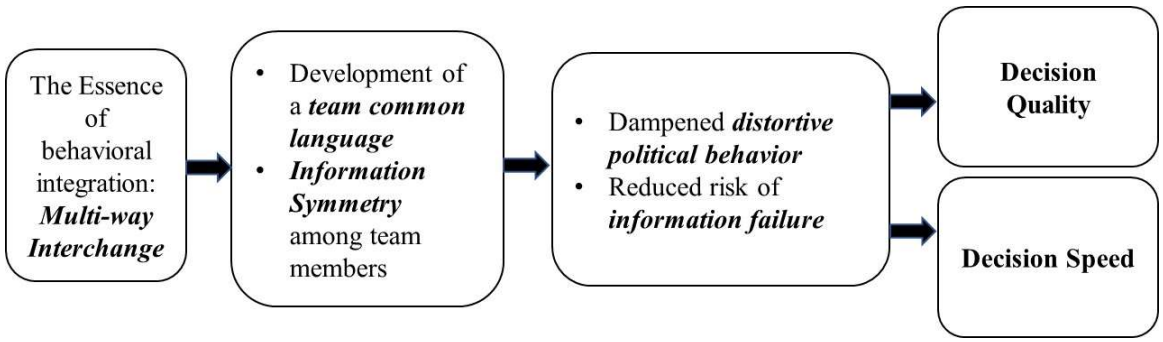

Figure 1: Opening up the black box of behavioral integration

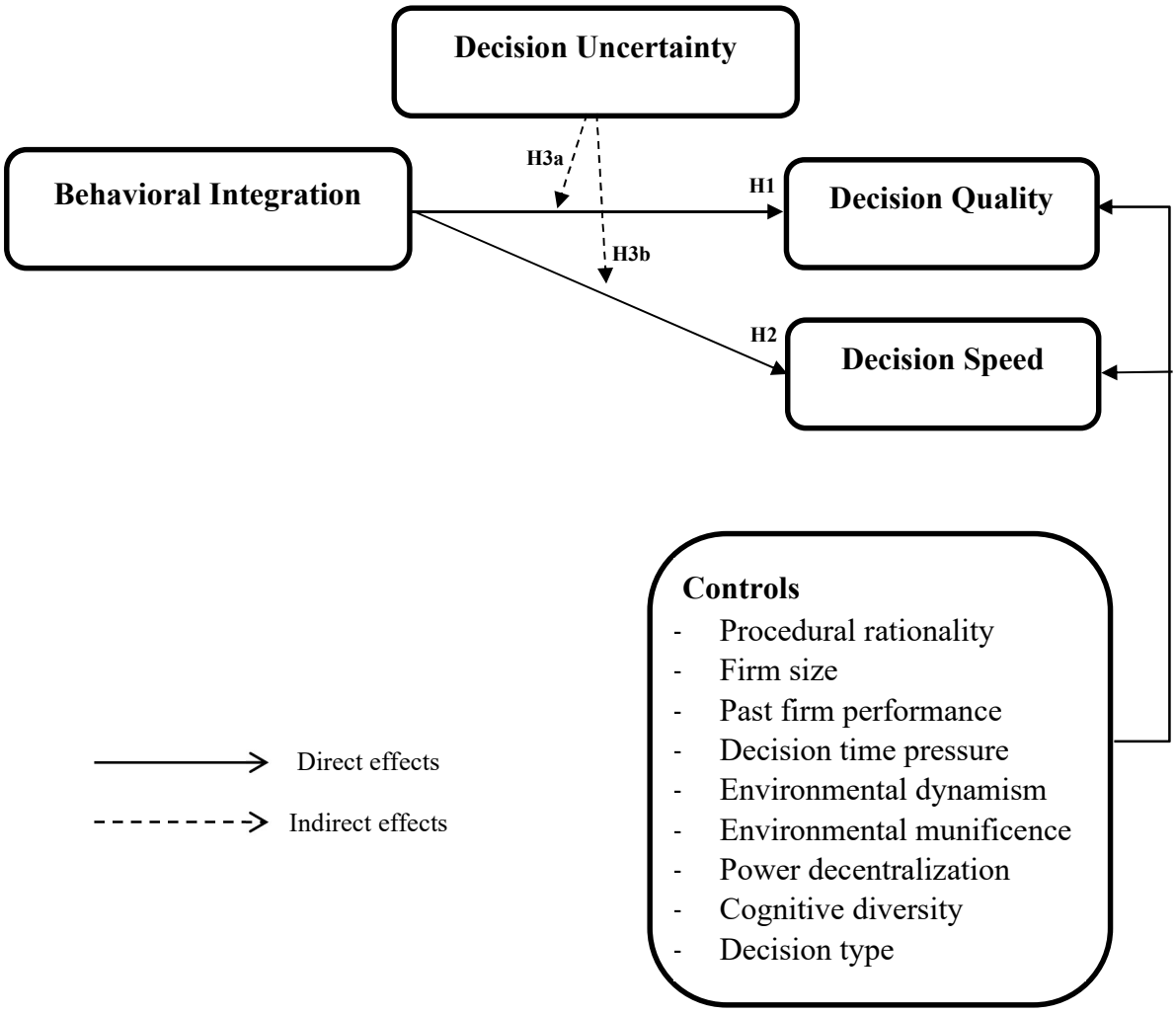

Figure 2: Theorized direct and indirect effects of behavioral integration

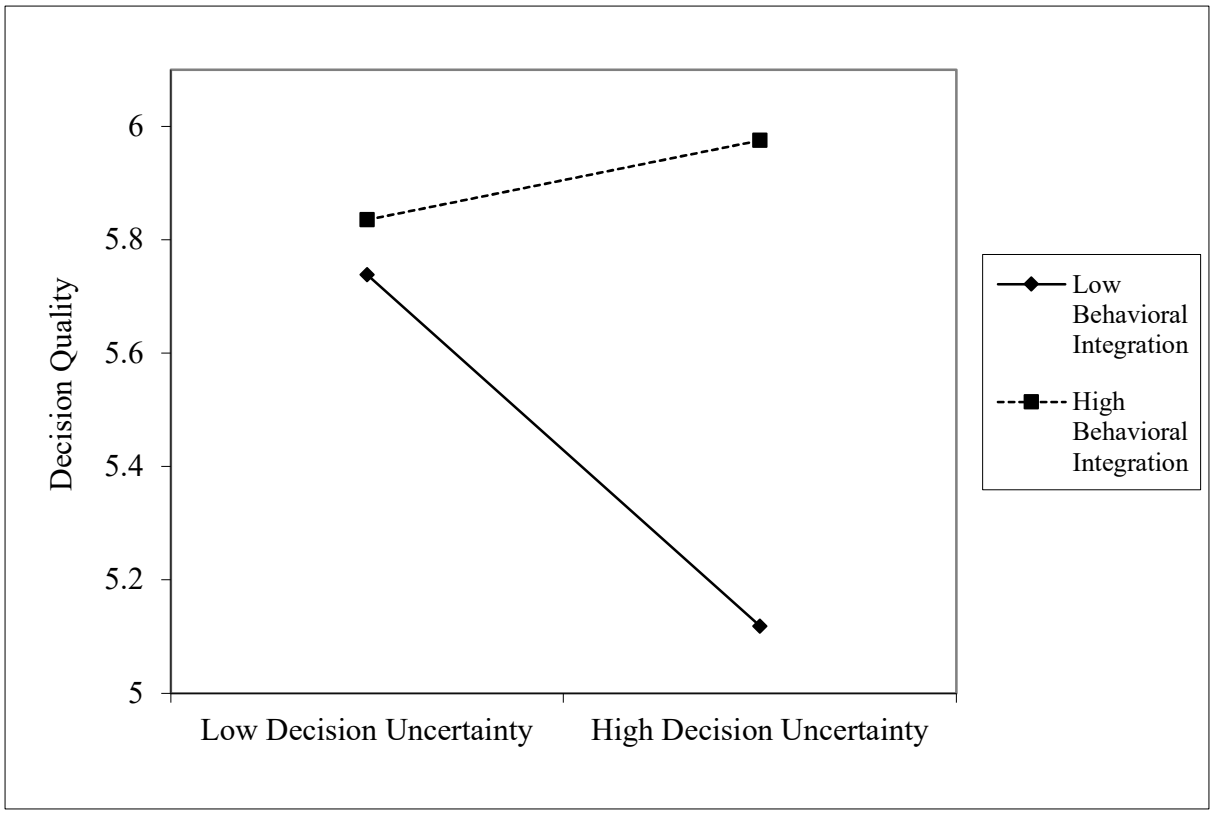

Figure 3: Interaction effect of behavioral integration and decision uncertainty on decision quality

Table 1: Means, standard deviations, construct reliability, AVEs, and intercorrelations

Variables	Mean	SD	Cronbach's Alpha	AVE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Decision quality	5.64	1.23	.95	.91	**.95**															
2. Decision speed	5.22	1.18	.85	.78	.12	**.88**														
3. Behavioral integration	4.88	1.02	.87	.88	.41**	.21*	**.94**													
4. Cognitive diversity	2.56	1.13	.91	.72	-.34**	.01	-.32**	**.85**												
5. Past firm performance	1.09	3.25	-	-	.04	.01	.03	.01	-											
6. Firm Size	4.99	0.63	-	-	.05	−.14	.09	-.09	.05	-										
7. Decision time pressure	4.27	1.42	.82	.86	.07	.32**	.03	.04	.14	-.15	**.92**									
8. Environmental dynamism	4.43	1.30	.82	.74	.08	−.13	.06	-.04	-.13	-.17	.03	**.86**								
9. Environmental munificence	3.66	1.25	.73	.62	-.05	-.01	-.06	.13	.23*	-.09	-.07	-.10	**.79**							
10. Power decentralization	2.81	0.75	-	-	.20*	−.21†	.14	-.02	-.23*	.07	-.07	-.04	.19*	-						
11. Procedural rationality	4.87	1.01	.86	.63	.45**	−.12	.36**	-.28**	.18	.10	.13	-.01	-.01	.18*	**.80**					
12. Decision Uncertainty	5.68	1.20	.72	.77	-.26**	-.01	-.17	.07	.01	-.04	.01	-.01	-.01	-.20	-.25**	**.88**				
13. New business investment decisions	0.21	0.41	-	-	-.14	-.01	-.09	.03	.02	-.07	.12	-.01	.19*	.07	.11	-.09	-			
14. Internal reorganization investments decisions	0.23	0.42	-	-	.11	-.09	.04	.01	.06	-.09	.23*	.04	-.11	.00	.16	.05	-.28**	-		
15. Investments in capital equipment decisions	0.10	0.31	-	-	.07	-.03	.10	-.06	.02	.20*	-.11	-.10	-.10	.16	.07	-.13	-.17	-.19*	-	
16. Investment in marketing decisions	0.46	0.50	-	-	-.03	.11	-.01	.01	-.08	.01	.22*	.11	-.00	-.16	-.27**	.11	-.47**	-.51**	-.31**	-

Note: n = 117; †$p < .10$; *$p < .05$; **$p < .01$; Square root of AVE estimates are presented in boldface on the diagonal for multi-item reflective measures only

Table 2: Results of regression analyses for explaining decision quality and decision speed

Variables	**Decision Quality**			**Decision Speed**		
Controls	*Step 1*	*Step 2*	*Step 3*	*Step 1*	*Step 2*	*Step 3*
Firm size	-.02	-.02	.00	-.12	-.12	-.13
Past firm performance	.02	.03	.02	.03	.05	.05
Environmental dynamism	.06	.03	.02	-.20*	-.23**	-.22*
Environmental munificence	-.01	-.04	.01	-.02	.02	-.05
Decision time pressure	.07	.06	.06	.37**	.36**	.35
Cognitive diversity	-.22**	-.17†	-.22*	-.05	.03	.05
Power decentralization	.14	.14	.11	-.18†	-.17†	-.15
New business investment decisions	-.21*	-.19*	-.19*	-.13	-.10	-.10
Internal reorganization investments decisions	-.02	-.01	-.01	-.19†	-.17†	-.18†
Investments in capital equipment decisions	-.03	-.06	-.05	-.02	-.06	-.07
Procedural rationality	.35**	.28**	.26**	-.13	-.22**	-.21*
Decision uncertainty	-.14†	-.13	-.10	-.11	-.09	-.11
Main effects						
Behavioral integration (H1 and H2)		.22*	.20*		.32**	.33**
Interactions						
Decision uncertainty × behavioral integration (H3a & H3b)			.19*			-.12
R^2	.33	.37	.40	.24	.32	.33
ΔR^2		.04*	.03*		.08**	.01

Note: n = 117; Standardized regression coefficients are shown; † $p < .10$; * $p < .05$; ** $p < .01$; Investments in marketing were used as the base category and thus naturally excluded from the table.

Table 3: Standardized path (regression) coefficient predicting mediating effect of behavioral integration

Mediation analysis	**β**	**T-statistics**	**Bias Corrected Confidence Interval**	
			2.5%	**97.5%**
Decision Quality				
Direct effect	0.38	3.89	0.17	0.56
Indirect effect	0.06	1.36	-0.01	0.19