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Leader Decision Making Ability: An Information Processing Perspective

Shing Kwan Tam

Dr. Dawn L. Eubanks

Dr. Tamara L. Friedrich

University of Warwick

Leader Decision Making Ability: An Information Processing Perspective

Abstract

Leaders' decision making capacity and abilities directly impact their decision quality and performance. Decision making processes involve information collection, problem framing, and option evaluation. Moreover, multilevel performance and social information have an impact on the subsequent steps and outcomes of decision making. Following this logic, the leader's ability to manage the decision making process is deemed to be critical to their role. In this chapter, we explore the relationship between decision making capacity and three relevant antecedent abilities: problem solving, social judgment and emotion management. However, because decision making is highly sensitive to the context, the impact of contextual factors such as time pressure and cultural differences are also discussed.

Introduction

Decision making is regarded as a crucial activity of leaders as their decisions have tremendous impact on organizations and their followers (Westaby, Probst & Lee, 2010). A decision is defined as a commitment to actions with the objectives of serving people's values and interests (Yates & Oliveira, 2016). In this sense, decision making abilities help leaders to address complex organizational issues by collecting information, framing the problem, assessing options, and ultimately formulating solutions (Mumford, Zaccaro, Harding, Jacobs & Fleishman, 2000). Decision making is not just an ability but also a highly situational and complex cognitive process (Weick, 1995). According to prospect theory, decision making is a process that concerns how decision makers utilize the information available to form their perception of a problem and evaluate the options and outcomes to make a decision (Tversky & Kahneman, 1985). In this chapter, the combined view of decision making as an ability and how the process needs to be managed will be discussed. The relationship between leader abilities and decision making

capacities, as depicted in Fig. 1, present the key underpinning logic. Two points are particularly noteworthy here. First, decision making is not just about information processing, problem framing, and option evaluation, it is also a capacity that is dependent on problem solving, social judgment, and emotion management. Second, because decision making is sensitive to the situation and environmental changes, contextual factors such as time pressure and cultural differences will cause variations in leader decision making capacity.

Decision Making Foundations

A key focus of decision making research is on the question of how people choose actions rationally, or how they make decisions under ambiguous situations or with conflicting goals (Newell, Lagnado & Shanks, 2015). The principle of rationality is the underlying logic of decision making where the criteria of consistency and coherence in how people make decisions are assumed to be fulfilled (Tversky & Kahneman, 1985).

The origin of decision making research can be traced to the late 1940s where von Neumann and Morgenstern (1947) developed Expected Utility Theory (EUT) to evaluate decision making in relation to the principle of maximizing expected utility. It was developed within the economics discipline but also gained attention from psychologists due to the irrational nature of human decision making behaviors and their impact on the maximization of utility (Savage, 1954).

There has been increasing evidence that individuals systematically violate the rational principle of decision making (Kahneman & Tversky, 2000). In order to understand the limitations of human cognition in processing information and environmental limitations on the information availability during decision making, a prevalent approach to understanding decision making is to look for domain-specific heuristics (Tversky & Kahneman, 1974). These heuristics

are suggested to reduce the complexity of assessing task probabilities and value prediction to simpler decision making rules (Tversky & Kahneman, 1974). These simple decision making rules include the choice of an option that comes to mind most easily, or an option that has highest priority on the most important dimension (Oppenheimer & Kelso, 2015). This approach concerns the problem of decision making from an information processing perspective and emphasizes the use of available information to achieve the desired outcome in a rational way (Oppenheimer & Kelso, 2015).

In addition to the approach of understanding decision making as a test of rationality of people's choice used in economic studies, there have been a number of attempts trying to investigate leader abilities and how they make decisions from the perspective of leader cognition development (e.g. Lord & Hall, 2005; Mumford, Connelly & Gaddis, 2003). Mumford, Friedrich, Caughron and Byrne (2007) developed a model of leader cognition that focused on how leaders formulate solutions to problems through the generation of sensemaking systems. Throughout the decision making process, a leader's use of experiential knowledge and management of multiple processes (e.g. scanning of the environment for information gathering, case analysis, and forecasting) are needed in order to make a better decision (Mumford et al., 2007).

Although there have been different approaches to studies on decision making, there is a common focus on a leader's need to gather and make sense of available information for their understanding of the problems and further formulation of solutions (Tversky & Kahneman, 1985; Mumford et al., 2007). In this sense, there are three key factors that are to be considered in decision making: information processing, problem framing, and option evaluation. These will be discussed through the lens of decision making capacity.
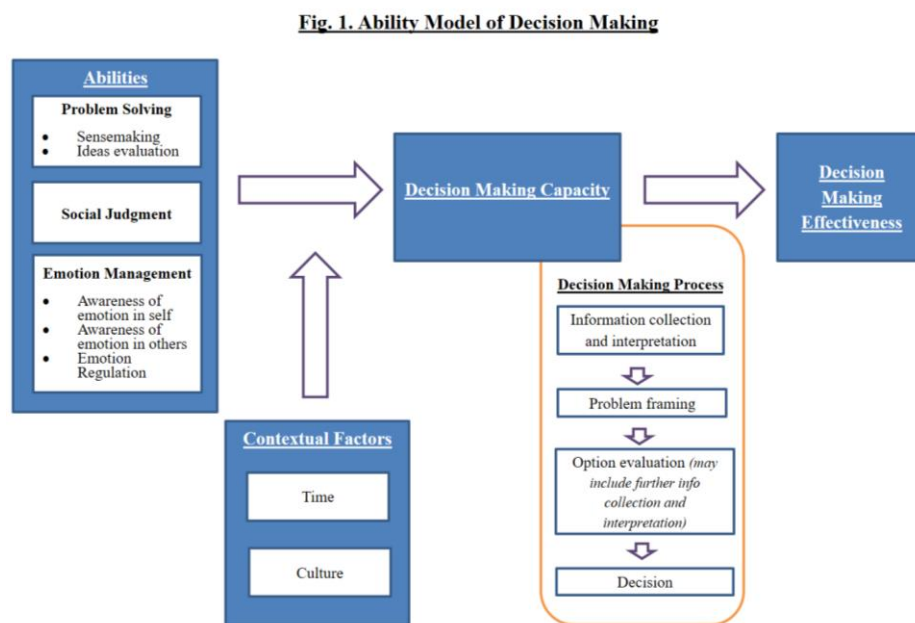
Decision Making Capacity

In view of the complexity of decision making, the improvement of leader abilities in this area is essential for enhancing leader performance (Santos, Caetano & Tavares, 2015). Development of skills and acquisition of knowledge are argued to be dependent on a complex set of abilities, motives, and personal characteristics (Mumford, Zaccaro, Connelly & Marks, 2000). While some research emphasizes the importance of abilities such as general cognition and intelligence to leadership performance, these abilities are unlikely to change drastically (e.g. House & Aditya, 1997; Lord, De Vader & Alliger, 1986; Lord, Foti & De Vader, 1984; Schmidt & Hunter, 2000), however there are some abilities such as decision making, emotional intelligence, problem solving, and social judgment that can be developed (Judge, Colbert, & Ilies, 2004, Mumford, Todd, Higgs & McIntosh, 2017). In terms of the relationship between abilities and skills acquisition, it is argued that general cognitive ability such as intelligence is related to biology rather than experience, yet some abilities such as problem solving and coordination that are related to skill acquisition, change with practice (Fleischman & Mumford, 1989; Mumford et al., 2000). In this sense, although general cognitive capabilities are less likely to be changed drastically, certain abilities such as problem solving and decision making can be enhanced through the acquisition of skills with practice and career experience (Connelly, Gilbert, Zaccaro, Threlfall, Marks & Mumford, 2000; Yukl, 2013).

Mumford et al. (2017) suggest a number of abilities that can enhance leader skills and in turn improve leadership performance including decision quality. For example, leaders need to identify problems and generate solutions objectively while managing the emotions of themselves and also their followers. Therefore, the ability of problem solving, social judgment, and emotion

management are deemed to be critical for enhancing decision making ability and facilitating a smoother decision making process (Yukl, 2013).

In this chapter, a conceptual model of decision making is developed as depicted in Fig. 1. Two points are particularly noteworthy regarding the conceptual model presented. First, decision making capacity can be reflected through the decision making process and outcome, thus the understanding of the process and the criteria contributing to a better decision outcome will explain why problem solving, social judgment, and emotion management abilities matter. Second, decision making capacity is not just influenced by ability, because it is also a process where the decision making outcome is dependent on the context, and the consideration of contextual factors (i.e. time and culture) will facilitate our understanding of the outcome variations.

Fig. 1. Ability Model of Decision Making

Abilities

Problem Solving
- Sensemaking
- Ideas evaluation

Social Judgment

Emotion Management
- Awareness of emotion in self
- Awareness of emotion in others
- Emotion Regulation

Decision Making Capacity

Decision Making Effectiveness

Contextual Factors

Time

Culture

Decision Making Process

Information collection and interpretation

Problem framing

Option evaluation *(may include further info collection and interpretation)*

Decision

Decision Making Processes

Decision making as a process is highly sensitive to available information (Kahneman & Tversky, 1979; Weick, 1995). Kahneman and Tversky (1979) further enhanced the Expected

Utility Theory with Prospect Theory, and it explains decision making with framing and evaluation. A decision frame is the decision maker's conception of outcomes and contingencies associated with a particular option, and this frame is influenced partly by the problem formulation and partly by the norms, habits, and personal characteristics of the decision maker (Tversky & Kahneman, 1985). It has been found that people frame problems according to the order and manner that the problems are presented, and with the consideration of a reference point, they evaluate the options and possible outcomes in relation to gains and losses (Tversky & Kahneman, 1985). That is, how the problem is framed may make people include or omit certain options that would alter the final decision. This theory claims that the value of an outcome is evaluated either as a gain or loss. In behavioral terms, it means people seek risk for losses and are risk averse for gains. The effect is that people tend to avoid risk to ensure a certain gain and to seek risk to avoid the incurrence of a certain loss (Kahneman & Frederick, 2006). Next, this theory asserts that people over weight unlikely events (small probabilities) and under weight highly likely events (moderate and high probabilities) (Tversky & Kahneman, 1985). It means when people are under the condition of risk, they may irrationally give too much attention to low probability events when they weigh the options, but higher probability events are not given enough weight during decision making. Because framing influences how people perceive a problem and in turn make judgments about choice preferences, leaders, particularly when they face a risky situation, need to maintain rationality and objectivity in order to make consistent and coherent choices for optimal outcomes.

Information is critical for decision making not just because decision making is a process that is sensitive to information (Zeni, Buckley, Mumford & Griffith, 2016), it is also because the perception of problems and evaluation of options may cause violations to rationality that make

the leader unable to make rational decisions in the end (Tversky & Kahneman, 1985). The importance of information is reflected in the information collection and framing process in particular. During the process of decision making, the information collected and how it is interpreted are deemed to be pivotal because leaders need these reference points to make sense of the event (Weick, Sutcliffe & Obstfeld, 2005).

The information collected will affect leader problem framing and subsequent option evaluation steps. Tversky and Kahneman (1985) claim that people adopt a decision frame to define problems in the initial decision making stage. Tversky and Kahneman (1986) further emphasize the importance of framing and that the framing of options (e.g., gains or losses) would cause variations that yield varied preferences in a systematic way. Because decision preferences are influenced by the framing of a problem, framing also has an impact on the outcome due to formulation effects. That is, changes in framing are suggested to cause shifts of preferences from risk aversion to risk seeking or vice versa, and this effect is found to influence the ultimate decision because the decision maker may favor the preferred outcome associated with the frame while ignoring the bigger picture (Kahneman & Tversky, 1986; Zeni et al., 2016). This leads to the topic of how rational or irrational we are as we make decisions.

Irrationality and Decision Making

Although it is assumed that people would make decisions rationally, the subjective nature of human behavior does impact problem framing and option preferences (Tversky & Kahneman, 1982). Along related lines, Oppenheimer and Kelso (2015) suggest that human decision makers do make irrational decisions at times, thus the integration of diversified evidence is necessary in decision making.

Information has an impact on how a decision is made, yet irrational factors such as emotions may also influence how the problems are framed (Kahneman, 2011). That is, choices are made according to initial emotional evaluations and people interpret risk with the 'risk as feeling' approach, meaning emotional reactions drive behaviors and decisions (Kahneman & Fredrick, 2007; Loewenstein, Weber, Hsee & Welch, 2001). De Martino, Kumaran, Seymour and Dolan (2006) demonstrated this emotional effect suggested by Loewenstein et al. (2001) by framing a prospect in one of two ways – "keep $20 of the $50" (a gain frame) or "lose $30 of the $50" (a loss frame). Although the equivalence of the alternative formulations is transparent, the option that was framed positively (with the use of the word "keep") was selected more frequently than the option that was framed negatively (with the use of the word "lose"). In this vein, the words 'keep' and 'lose' evoked emotional evaluations and showed the subjects' tendency of avoiding risk to ensure a certain gain and seeking risk to avoid a certain loss. In the context of problem framing, while the use of information cannot be ignored during this process, it is noteworthy that the emotion experienced by decision makers also plays a role at the moment of decision making (Loewenstein et al., 2001).

Emotion management becomes important because leaders require the ability to regulate their emotions for better decision making outcomes, and their selection of actions are dependent on strategies they use as they experience emotions (Jordan & Lindebaum, 2015). The awareness of emotions in themselves and others and the ability to regulate their emotions enables leaders to maintain emotional stability under stressful situations and influence the followers positively during the decision making process.

Taking all the previous discussions into consideration, leader ability to rationally gather multiple source of information for problem framing and solution generation with minimal

emotional distractions are undoubtedly what the leaders need to be equipped with (Mumford et al., 2017).

A recent example of the application of the problem framing, information collection, and option evaluation in decision making is the case of Apple CEO Tim Cook's refusal to unlock the terrorist Syed Rizwan Farook's iPhone for the FBI's investigation of a terrorist attack that took place in San Bernardino, California, in December, 2015 (Lichtblau & Benner, 2016). Cook refused to develop software to disrupt the encryption system of Farook's iPhone to unlock the data for the FBI's investigation. As we will show below, Cook's response demonstrated the elements of Prospect Theory.

The essence of Prospect Theory is that subsequent choices are made by the framing of problems and choices (Tversky & Kahneman, 1985). Cook framed the whole event as a 'dangerous precedent' and 'an unprecedented step which threatens the security of our customers'. In this sense, he adopted a 'loss frame' under this risky situation. By framing the compromise and request to 'build a backdoor to the iPhone' as a tremendous threat (Cook, 2016), the consequence of this action is interpreted as a bigger risk. During the decision making process, he evaluated the outcome according to a few reference points. First, the losses that were associated with the compromise, in particular the new software would 'make it easier to unlock an iPhone by "brute force" trying thousands or millions of combinations with the speed of a modern computer' (Cook, 2016) that could cause uncontrollable consequences. Second, the protection of Americans' civil liberties from the breach of privacy and less safe situations was framed as the favorable alternative. Third, by using his experience and knowledge, he pointed out the government downplayed the impact of building a 'backdoor' software because once it is created,

it could be used by other devices, through hacking or carelessness, to crack open other iPhones, and that would "put millions of people at risk" (Grossman, 2016).

In brief, the reactions to Cook's controversial decision of refusing to aid the U.S. government were mixed. However, as the leader of Apple, he defended the interests of his customers and his position, and used the protection of data security and civil liberties as frames to make the best possible decision in a situation characterized by risk.

Abilities and Decision Making

Abilities are argued to have an impact on leader skill and knowledge (Yukl, 2016). Certain abilities such as verbal comprehension are found to be related to performance in earlier stages of skill acquisition, whereas other types of abilities such as reaction time and simultaneous coordination are more strongly related to performance in later stages of skill acquisition (Fleischman & Mumford, 1989). In a similar vein, Mumford et al. (2000) suggest that some people will learn certain types of skills faster than others because of their abilities. They further discuss in their Skills Model that decision making and problem solving are crystallized cognitive abilities that can grow continuously because they are a type of intellectual ability that can be learned or acquired over time through experience (Mumford et al., 2000). Because decision making concerns the method of thinking in order to achieve the best possible results (Baron, 2008), the types of abilities that impact leader thought processes and subsequent decision making outcomes are of a key concern for leaders (Mumford et al., 2017).

In view of the importance of information processing, problem framing, and option evaluation in decision making, together with the influence of subjectivity in human decision making behaviors, leaders need to have abilities such as problem solving, social judgment, and emotion management to navigate the environment, understand the needs and root causes of

problems and judge the situation to make a good quality decision (Yukl, 2013). We now review these three sets of abilities and how they facilitate decision making.

Problem Solving

The first ability to be discussed is problem solving. Problem solving helps leaders to make sense of situations for problem framing and facilitates the process of option evaluation (Mumford et al., 2000). With sensemaking abilities, leaders are able to solve problems by making sense of the situation through the continuous process of evidence accumulation (Weick, 1995). The information collected is then used for framing the problems and leads to further analysis of the available options for a decision (Hogarth & Makridakis, 1981). Because the information collection process plays a critical role in decision making, and leaders need diversified information for more objective judgments, information embedded in the social network is not to be neglected (Mumford et al., 2000).

Leaders are required to make decisions about complex problems in organizations, and they need to have the ability to identify problems, gather information, formulate ideas and options, and develop plans to solve the problems (Mumford et al., 2000). Sensemaking can help leaders make sense of the information and situation, and idea evaluation facilitates the solution generation. These are regarded as key abilities that leaders need during problem solving (Mumford et al., 2017). We will now elaborate on these two subsets of abilities in detail.

Leader Sensemaking

Sensemaking enables individuals to organize and bring meaning to their experiences. It involves actors' cognitive work to label and connect meanings, and make sense of the world (Whiteman & Cooper, 2011). In order to generate solutions for problems, Hogarth and Makridakis (1981) assert that sensemaking is guided by mental models as a framework for

managing the basis of making decisions - information scanning, evaluation, and appraisal of appropriate actions. Schön (1983) further points out that sensemaking varies among people. He argues that those with more experience are able to reflect on their experiences and previous knowledge while formulating actions more effectively and are more sensitive to changes in the situation. Sensemaking allows leaders to interpret and make sense of uncertain and complex situations during problem solving (Hahn et al., 2014), and this articulation of sensemaking helps to reduce leader stress levels and clarify the root causes and goals for the formulation of further actions (Weick, 1995). In light of problem solving, sensemaking is based on the ability of an individual to accurately construct a problem frame, narrow information collection, evaluate the information collected, and ultimately make a decision (Thiel, Bagdasarov, Harkrider, Johnson & Mumford, 2012).

In the context of information processing and narrowing during problem solving, leader sensemaking abilities help them to make sense of the environment, and it creates rational accounts of the world that lead to further actions (Maitlis, 2005; Weick, 1995). Decision makers are assumed to follow rational and comprehensive steps with the application of rules to information in order to develop and implement plans (Vessey, Barrett & Mumford, 2011). In particular, Thomas, Clark and Gioia (1993), argue that sensemaking involves environmental scanning, interpretation, and related responses. Similarly, Mumford et al. (2007) assert that leader sensemaking starts with internal and external environmental scanning. After mental models are developed as a framework, the information gathering process is initiated to define the nature and consequences of the event (Weick, 1995). This will, in turn, activate the descriptive mental models that include the causes and goals.

During the information interpretation process, decision makers develop or apply ways of comprehending the meaning of information. This ability facilitates the fitting of information into frameworks for understanding and further actions (Gioia, 1986). Along similar lines, Mumford et al. (2007) assert in their leader cognition model that information interpretation facilitates the information gathering process because it affects leader understanding of an event. Together with the cues obtained via both external and internal environmental scanning, information gathering will be impacted by the descriptive mental models that are used to understand the event (Weick, 1995). Because sensemaking entails a continuous redrafting process of an emerging event, during the problem framing phase, sensemaking facilitates the incorporation of additional observed data, generating a more comprehensive story. Thomas et al. (1993) remark that leaders frame events as threats or opportunities by sensemaking. Weick (1995) also states that leaders make decisions by creating a cognitive structure for understanding and responding to the situation. That is, sensemaking is helpful to clarify root causes and goals operating in the situation in which it is helpful to provide a basis of actions for both leaders and followers (Weick, 1995).

Descriptive mental models are then activated by the information gathered for further case analysis (Mumford et al., 2007). As such, the use of information actually has a long term impact on decision quality because decision making errors may occur if the solution stems from bad information and bad sources, as the subsequent actions taken are dependent on the interpretation of information (Maitlis & Christianson, 2014; Zeni et al., 2016).

Idea evaluation

Being able to construct solutions is regarded as one of the effective problem solving behaviors for leaders (Zaccaro, Rittman & Marks, 2001). With the information gathered and

analyzed, it forms a basis for planning and forecasts that help the leaders to generate ideas and actions (Mumford et al., 2017). However, as argued by Mumford et al (2000), selecting and implementing the best possible actions for goal achievement is a form of problem solving, and it denotes the importance of generation, evaluation, and execution of solutions for leader effectiveness. It is not feasible for leaders to act on all generated solutions. They instead need to appraise and select the most appropriate solutions for further execution of the plan (Mumford et al., 2017). Thus, leaders need to be able to evaluate ideas in order to perform well in problem solving (Zaccaro et al., 2001).

Idea evaluation is defined as the ability to recognize original ideas (Runco & Basadur, 1993). What is relevant about idea evaluation to problem solving is the appraisal of a projected outcome of adopting an idea according to applied performance standards (Kuipers, Moskowitz & Kassirer, 1998). Runco, Okuda, and Thurston (1987) assert that ideas are evaluated initially in regards to appropriateness and relevance, and, subsequently, on originality. That is, the appropriateness of criteria involves two elements, first, the practical benefit, such as low implementation cost and the fit of the idea with the current system and environment, and, second, the originality of the idea that provides a new solution to the problem (Bink & Marsh, 2000). What complicates the idea evaluation outcome is that the application of evaluation standards is found to be influenced by the context (Blair & Mumford, 2007). For example, research conducted by De Dreu (2003) and Suri and Monroe (2003) has shown that contextual factors such as time pressure and stress negatively influence information processing capacity, causing superficial analysis and a preference for rapid closure. This will be discussed further later in the chapter.

In view of the complexity of idea evaluation, scholars have suggested ways to enhance leader abilities. Runco and Basadur (1993) suggest that training has a positive impact on improving leader evaluative accuracy. Leaders were found to be able to provide more original solutions to problems and to judge original ideas more accurately after training, both in their ability to identify original ideas and to recognize unoriginal ideas. In addition to training, Lonergan, Scott and Mumford (2004) remark that the acquisition of experience is beneficial to leaders for having more comprehensive standards for idea evaluation. With such standards, leaders are then able to improve the problem solving and decision making outcome through more appropriate idea evaluation (Liu, Eubanks & Chater, 2015).

Along similar lines, as leader idea evaluation can be improved by experience (Mumford et al., 2000), Mumford et al. (2017) advocate for the use of case-based knowledge because it is an experience-based knowledge where leaders are able to reflect and learn. This type of knowledge typically includes both performance information (i.e. causes, resources, restrictions and contingencies) and social information (i.e. actors involved, affect, goals and social system) (Vessey et al., 2011). With the acquisition of more experience and expertise, leaders are more capable of organizing and utilizing their case-based knowledge. Consequently the complexity of the problem decreases and leads to better idea evaluation (Mumford et al., 2017).

The use of problem solving abilities in decision making can be illustrated by how Hillary Clinton made decisions and worked with her team as a leader. Although there is controversy surrounding her decision making (such as the vote for the Iraq War), those who have worked with her closely consistently compliment her as someone who 'really listens to you' and has excelled in her governance period (Klein, 2016). As a good listener, Clinton clearly understands the importance of information collection and she heavily relies on this information during the

decision making process. As her fellow senator has commented, *'She always comes with the memo and the binders… When we had issues, she studied. She was always well-prepared, almost without exception'* (Davis, 2016)

As recalled by her followers, during her time as Senator, she had regular 'card-table' sessions every few months where she and her team came together and worked with two tables of newspaper clippings, position papers and random scraps of papers (Klein, 2016). It is a categorization exercise where they discussed and prioritized issues, and most importantly, Clinton requested her team to follow up on these issues. From the decision making theory perspective, Clinton collects multiple sources of information (including factual reports and opinions collected by her team) to make sense of the situations comprehensively. This is argued to be helpful for securing the solution quality (Tversky & Kahneman, 1985; Mumford et al., 2007). However, as Maitlis and Christianson (2014) argue, solution quality is impacted by how information is interpreted. Some argue that one of the biggest mistakes Clinton made was the vote for the Iraq War and it is reported by some that it was caused by listening to the wrong intelligence assessments (Klein, 2016). The implication of this example is that, leaders need diversified information to understand the problem without doubt, yet decision errors may occur if the information is of bad quality and is gathered from bad sources (Zeni et al., 2016). As such, leader awareness of problem framing and how to deal with information properly is deemed necessary (Tversky & Kahneman, 1985; Mumford et al., 2007).

In brief, problem solving has a fundamental influence on decision making because it requires the leader to make sense of the event, and take further actions to make a decision (Weick, 1995). Because the problem solving outcomes are also dependent on the quality of idea evaluation, leaders are advised to receive training about how to better manage performance and

social information during the information gathering and interpretation stage in order to improve their ultimate idea evaluation performance (Mumford et al., 2017; Vessey et al., 2011).

Social Judgment and Using Multilevel Information Sources

Decision making takes place at different levels in organizations, and people's perspectives and opinions are found to have an impact on the decision making outcome (Mumford et al., 2007). A stated earlier, decision making needs both performance information (such as causes, resources available, restrictions, and contingencies) and social information (such as actors involved, affect, goals, and the social system) (Vessey et al., 2011). In this sense, social judgment becomes essential for leaders to understand the needs of others in organizations. By building a closer relationship with others (particularly followers) and cultivating a team climate that promotes open-mindedness, leaders are able to more easily gather information from different sources in the social network.

It is noteworthy to point out that decision making is not necessarily a top down but also a bottom up process (Sonenshein, 2010), thus the involvement of multilevel sources of information are deemed to be pivotal for the ultimate decision quality (Murase, Carter, DeChurch & Marks, 2014). Along similar lines, leaders need to have a multilevel understanding of decision making, because decision making is regarded as a process involving all team members. Their behaviors and activities that happen across different organizational levels are argued to influence the overall group decision making outcomes (Hollenbeck, Ilgen, Sego, Hedlund, Major & Phillips. 1995). As such, in order to have a comprehensive view in the context of decision making, it is essential for leaders to consider both performance and social information from different levels of the organization (Mumford et al., 2007).

Information gathering and interpretation has a fundamental influence on decision making at different organizational levels, and actors (both followers and leaders) from any organizational level may participate in the decision making process (Mumford et al., 2007). As a result, leaders need to develop solutions interactively or with the assistance of their subordinates, peers, and superiors (House, 1996). Thus, social judgment is necessary because it is regarded as the capacity to understand people's needs and social systems (Mumford et al., 2000). Precisely speaking, this ability enables leaders to work with others during the decision making process and to marshal support from the social network for executing changes in an organization (Zaccaro, Mumford, Connelly, Marks & Gilbert, 2000).

The importance of social judgment can be revealed by how information collection and processing takes place in organizations. A top down approach happens when leaders, by using their actions and communication with their teams, actively influence and change members' existing mental models and develop team knowledge (Marks, Zaccaro & Mathieu, 2000; Murase et al., 2014). Conversely, followers can also develop their own team shared knowledge through bottom-up processes, meaning continuous communication and interaction with one another over time (Pearsall, Ellis & Bell, 2010; Murase et al., 2014). Taking all these processes into consideration, it is clear that information gathering and interpretation in the decision making process is dynamic among leaders and followers. In particular, leaders need to be aware that this dynamic process involves different actors and knowledge in the social network, and the follower interpretation of the situation will have an impact on the information they will collect for the leaders (Day, Gronn & Salas, 2004; Zaccaro & Klimoski, 2002). In other words, follower

understanding and interpretation of information also affect leader judgments because leader decisions are dependent on the information collected.

Leaders also need to have social judgment to consider the irrational elements of decisions for generating more pragmatic and feasible decisions that serve the interest of both followers and the organization (McKenna, Rooney & Boal, 2009). Social judgment includes abilities such as perspective taking, social perceptiveness, behavioral flexibility, and motivating others during the decision making process (Mumford et al., 2000). That is, leaders are expected to be sensitive to how their ideas fit in with others (Connelly et al, 2000). This ability is about how well leaders understand the perspectives and needs of others, the flexibility of them adapting their ideas to others, the collaboration with others in the face of resistance and conflicts, and the people skills necessary to foster changes in an organization. (Mumford et al., 2000). In other words, this ability is applicable when leaders need to collect the information from the followers during decision making.

In regards to the information collected from followers, it is suggested that one of the most direct ways to influence follower understanding about the problem and situation is to show them clear directions about how to perform the task (Marks et al., 2000; van Ginkel & van Knippenberg, 2008). Yet, by considering the bi-directional nature of leaders and followers in decision making, follower motivation and openness about information gathering is a factor that needs to be considered (Park & Nawakitphaitoon, 2017). From the emotional point of view, followers are found to have challenges and difficulties in terms of sharing information and suggestions with their leaders when they have a fear of expressing their opinions openly (Lebel, 2016).

It is argued that employee openness fosters their contributions in decision making through actively expressing their opinions and suggestions, and the sharing of their viewpoints can help leaders make decisions (Pyman, Cooper, Teicher & Holland, 2006). However, it has been found that the fear of speaking up, in general, lowers employee willingness to share their ideas when they have a negative perception of their leaders' openness about accepting their ideas (Lebel, 2016). Studies show that followers withhold their opinions and input with the fear of negative consequences such as punishment from supervisors, causing harm to their work relationship, being labeled negative (e.g. trouble maker or whiner), being unsupportive, or ruining one's image (Detert & Edmondson, 2011; Kish-Gephart, Detert, Treviño, & Edmondson, 2009; Milliken, Morrison, & Hewlin, 2003). The impact of followers' fear is particularly obvious at times of uncertainty that is marked by the emotion of feeling unsettled (Gino, Brooks, & Schweitzer, 2012; Kish-Gephart et al., 2009).

Leaders need to properly manage situations where followers feel fearful to share views, because they need to count on the information collected by others for decision making (Mumford et al., 2017). A perceived high level of leader openness can increase the likelihood that followers will express their opinions to make changes in the decision making process, and it can also reverse follower fear tendencies towards withdrawal and avoidance (Lebel, 2016). From the emotional viewpoint, higher perceived leader openness is also remarked to foster follower positive feelings that their suggestions and opinions can change the situation, and their pessimistic feeling of being helpless can be minimized (Tangirala & Ramanujam, 2012). As a result, what leaders should pay attention to at the team level information gathering is that they need the information and feedback from their followers in order to make favorable decisions, and the flow of information from the follower can actually improve their decision quality. Thus, it is

recommended to consider their role in terms of creating an open-minded and fear free

atmosphere, and encourage active participation from their followers (Lebel, 2016; Morrison &

Milliken, 2000).

The importance of social judgment can be illustrated by how the former P&G CEO A. G.

Lafley led the turnaround of P&G. Lafley was named as the CEO of the Year in 2006 by Chief

Executive Magazine (Hashemipour, 2016). Lafley took over the position of CEO in 2000 while

P&G was in the midst of a crisis with a loss of US$85 billion in the market capitalization (Lafley,

2009). He realized it was 'a crisis of confidence'; both the employees (including P&G leaders),

customers, and investors lost confidence in P&G. In order to turnaround the adverse situation, he

was clear that the long term vision was to create better customer value, but an immediate

decision he had to make was to set the standards about what to change and what not to change

(Hashemipour, 2016; Lafley, 2009). He realized the importance of collaboration with his team

for generating the future transformation decisions. The active participation of his employees was

crucial, and as a result he prioritized the promotion of the company's core values (i.e. trust,

integrity, ownership, leadership, and a passion for winning) as key initiatives during the first year

of the transformation (Lafley, 2009). To realize the long-term goal of creating better customer

values, perspective taking, and internal open culture were deemed to be pivotal to Lafley. He

selected his leadership team with one very specific criterion: instead of having yes-people in the

team, he wanted people who had good judgment and could challenge every decision (Starling,

2011).

This attitude of Lafley helped him to build an open culture where his followers felt

comfortable expressing themselves and sharing their opinions. This type of social information is

argued to help leaders understand the full picture of the situation and make a more favorable

decision with diversified information at hand (Mumford et al., 2000; Pyman et al., 2006). He was also sensitive about the value of social information and put much effort on collecting feedback from the external customers. He met regularly with the buyers of P&G products, visited their homes, and did shopping trips with them for perspective taking (Ryan, 2009). There were also consumers that worked with employees in every P&G office and innovation center (Lafley, 2009). All of these examples show Lafley's social judgment and his sensitivity to the importance of social information during decision making.

Emotion Management

Related to social judgment are emotions. Emotions are one of the factors that wise and effective leaders need to manage during decision making (McKenna et al., 2009; Savage, 1954). Emotion management is regarded as a key part of effective leadership because it is not just about how leaders manage their own emotions, but also how they manage the emotions of their followers (Connelly, Friedrich, Vessey, Klabzuba, Day & Ruark, 2013). Previous studies have demonstrated the link between emotional capacities management, such as emotional awareness of oneself and others and emotion regulation, (Connelly et al., 2013; Gooty, Connelly, Griffith & Gupta, 2010; Yukl, 2013) to decision making processes such as problem framing, information processing, divergent thinking, and risk assessment of options (Amabile, Barsade, Mueller, & Staw, 2005; Isen, 2001; Madjar, Oldham, & Pratt, 2002; Tversky & Kahneman, 1982; Vosburg, 1998).

Awareness of ones own emotions and the emotions of others are both fundamental to decision making. The first ability to be discussed here is emotional self-awareness. As Mumford et al (2007) remark, emotion is one of the information sources that leaders use during decision making. It is suggested that subjective interpretation of the available information has an impact

on problem framing and subsequently determines preference of option evaluation (Tversky & Kahneman, 1982). Leaders recognize and decode emotional information to appraise threats and opportunities in situations (Lopes, Cote & Salovey, 2006), which in turn affects how they frame the situation through sensemaking (Thomas et al., 1993). Following the same logic, the ability of emotional self awareness is about how much the leaders understand their own emotions, how these emotions change over time, and the impact on leader performance, including decision quality and interpersonal relationships (Yukl, 2013). This ability allows leaders to accurately identify the emotions they are experiencing. With higher awareness of ones own emotions, leaders would find it easier to understand their needs and likely reactions under different situations, thereby facilitating evaluation of alternative choices in decision making (Yukl, 2013). This ability becomes salient during situations with high stress and strict time limitations such as a crisis, because the formulation of plans for addressing the crisis is impacted by the problem frame developed (Vessey et al., 2011). Effective decision making requires leaders to remain calm, stay focused on the problem, and provide decisive direction to their followers rather than panicking, denying the existence of an issue, or shifting responsibilities to others in a crisis (Yukl, 2013).

The second ability is the awareness of emotions in others. Recognizing others' emotions is also crucial for developing emotion management ability because decision making is a dynamic process that takes place between leaders and others (Connelly et al., 2013; Van Ginkel & Van Knippenberg, 2012). This ability facilitates the recognition of others' emotions, differentiation of genuine and false expression of emotions, and understanding of others' possible reactions to the leaders' emotions and behaviors (Yukl, 2013). Being sensitive to others' perspectives helps

leaders understand groups' needs, goals, and demands (Zaccaro, Gilbert, Thor & Mumford, 1991).

People's views that are embedded in the social network affect framing of the problems and envisioning of the solutions. The social network is also asserted as a platform for accessing of resources and marshaling people's active support in policy decision-making (Hoppe & Reinelt, 2010). As such, if the opinions in the social networks are managed and utilized effectively, the leaders will find it more convenient to seek a discussion about the issues of concern, mobilize support, influence policy, and allocate resources during the decision making process (Hoppe & Reinelt, 2010). Without taking social information into consideration during decision making, leaders would encounter problems of only focusing on limited sources of information such as those more predictable and controllable aspects of the situation, and it, in turn, may decrease the decision quality because unpredictable factors would be neglected (Vessey et al., 2011). This impact is particularly prominent in crises due to the unpredictable nature of the reactions of actors (Hunt, Boal & Dodge, 1999; Weick, 1995).

The third ability involved in emotion management is emotion regulation. It involves a leader's attempts to influence what emotions they experience, when, and how they are experienced and expressed (Gooty et al., 2010). That is, leaders adopt different strategies to manage their experienced emotions in response to specific circumstances, workplace stressors, and during interactions with others (Jordan & Lindebaum, 2015). The range of emotion regulation strategies suggested (such as cognitive reappraisal and suppression) are all with the key aim of facilitating leader emotional stability in order to stay calm and provide direction in decision making (Lawrence, Troth, Jordan & Collins, 2011; Yukl, 2013).

The effectiveness of emotion regulation strategies depends on the situation (Connelly et al., 2013). For example, suppression of emotion is found to cause a less favorable result in interpersonal functioning that can limit close social relationships with others (Gross & John, 2003). That has an impact on the information collection process in decision making, because both leaders and followers are involved in the process, and leaders need to count on followers to provide information and resources for making decisions (Hunter, Tate, Dzieweczynski & Bedell-Avers, 2011). Follower perceptions of leader openness will affect their willingness to share information openly which in turn affects the information communicated to the leaders (Lebel, 2016). However, because unpredictable situations lead to overly optimistic or pessimistic risk assessments, suppression of optimism may be preferred in a high-risk situation where severe consequences of failing are expected because suppression of optimistic feelings would help leaders to assess the level of risk more accurately (Lerner & Keltner, 2000). In addition to the suppression strategy, the reappraisal strategy, a form of cognitive change that alters the emotional impact stemmed from a situation, is found to change the views and framing of an individual about an emotionally charged situation (Connelly et al., 2013; Gross & John, 2003). The impact of perspective taking is also examined in emotion regulation where it has been shown to help people see the bigger picture that in turn can reduce the negative affective reactions to distressing stimuli (Schartau, Dalgleish & Dunn, 2009). In sum, there will be less emotional influence during decision making if the leaders have collected more diversified information and perspectives from different sources to frame problems and make judgments (Mumford et al., 2007).

It is clear that emotions impact leader performance of cognitive tasks including information processing and decision making (Thiel, Connelly & Griffith, 2012). Thus, it is

necessary for leaders to enhance their abilities to manage emotions by being sensitive to emotions in themselves and others, and, most importantly, they need to adopt appropriate emotion regulation strategies to minimize the negative impact of emotions on decision making, and maximize their usefulness as an additional source of information (Yukl, 2013).

Contextual Factors

Decision making is sensitive to the changing environment and the context affects how leaders frame problems and evaluate options (Lord & Shondrick, 2011; Tversky & Simonson, 1993; VanLehn & Ball, 1991). Leaders need to manage the impact of time pressure with caution as it can benefit or disadvantage their decision quality. That is, it may lead to biases and irrational choices or generation of creative ideas (Blair & Mumford, 2007; Hunter et al., 2011). Furthermore, leaders are also subject to the preferences of decision making styles due to cultural differences because they are argued to influence information sharing (Westably et al., 2010). Therefore, the impact of the contextual factors of time and culture will be discussed in this section.

Time as a contextual factor

As Tversky and Kahneman (1985) suggest, leaders are unaware that their preferences are changed by framing, and their perspectives do change over time with more information and evidence collected along the way. Thus, time as a contextual factor needs to be considered when it comes to decision making. Following this logic, Busemeyer and Townsend (1993) also assert that preferences change during deliberation and the final choices are impacted by the amount of time spent on decision making. As information accumulates during the deliberation process, it has an influence on the outcome of a decision because a repeated sampling of relevant information is collected over time. Moreover, the amount of attention distributed to the varied

outcomes also changes over time during the deliberation process. In other words, during the process of decision making, many different consequences may be considered, preference for an action is formed according to gradual accumulation of evidence, and it will lead to a decision made by decision makers (Oppenheimer & Kelso, 2015).

The aforementioned decision making process takes place under situations where sufficient time is allowed for collection of information and decision making, yet in reality the leaders likely need to cope with situations where they have strict time restrictions in terms of information processing and choice evaluation. Research on decision making shows how the variations in choice preference can be explained by the contextual factor of time pressure (Oppenheimer & Kelso, 2015). For example, some studies (e.g. Busemeyer & Diederich, 2002; Diederich, 1997; Svenson & Edland, 1987) have found the variations in choice preference occur under situations with time restriction where the most important factor (e.g. cost) has a weak impact on one option, and the less important factor (e.g. quality) strongly favor the alternative choice. Moreover, Zhao and Olivera (2006) explain that people tend to adopt information processing strategies that require fewer cognitive resources when the time pressure increases. It is found that, under the condition where time constraints are introduced, instead of evaluating all attributes of each alternative option, people quickly make a decision to reject alternatives that do not meet a minimum acceptable level on any attribute (Ford, Schmitt, Scheitman, Hults & Doherty, 1989). Hence, it is expected that individuals tend to shorten and simplify decision making processes when they are under time pressure by taking into account fewer elements in the assessment (Zhao & Olivera, 2006), and this approach will in turn lead to mistakes or omitting original ideas that could disadvantage the decision quality (Zhao & Olivera, 2006; Blair & Mumford, 2007). As a result, time could influence decision quality because it can lead to an

overly simplistic decision making process. Time restriction is argued to lead to the occurrence of

errors under certain working conditions such as when there is irrelevant information and

situations where there is processing overload (Eubanks & Mumford, 2010). That is, when

individuals work in conditions where there is a time restriction and they are exposed to

information that is irrelevant, they may commit more errors because they do not have sufficient

time to properly frame the problem by considering the contingencies and restrictions present in a

situation. This may be a result of information overload with irrelevant information making it

difficult for leaders to make a favorable decision. As a result, decision quality is negatively

affected (Eubanks & Mumford, 2010). Another impact of time pressure is that more errors are

caused by error avoidance behavior (Edland & Svenson, 1993). It is found that people who tend

to make less risky choices are more selective when they search for information, and they focus

more heavily on negative attributes when they face time pressure. This approach can cause more

errors (i.e. decrease of decision accuracy) due to the lack of considerations of viable decisions

(Hunter et al., 2011).

Emotion regulation, a concept discussed earlier, is particularly impactful when leaders

are under stressful circumstances such as organizational change or crisis where leaders need to

make a decision with limited time and inadequate information (Lawrence et al., 2011). It is found

that stress or anxiety experienced as a result of restrictions such as time pressure leads to a

decrease in information processing capacity, and under such stressful situations, people show a

tendency of opting for superficial analysis and quick decisions, and rejecting ideas that are

difficult to understand (Blair & Mumford, 2007; De Dreu, 2003). To illustrate this point, Judge,

Colbert and Ilies (2004) have found that leader cognitive resources are decreased when they are

under stress and effective emotion regulation may free up cognitive resources that can improve leader performance in decision making, planning, and judgment of options.

Nevertheless, time as a contextual factor does not necessarily cause a negative impact on decision making (such as making errors). It is also argued to contribute to the generation of original ideas under certain conditions (Hunter et al., 2011). It has been found that when there is less time pressure, people tend to choose options that are aligned with the current social norms and reject original and risky ones, yet when the evaluation criteria are less strict, they prefer original and risky options even when the time pressure is greater (Runco & Acar, 2012). Although leaders who are under time pressure show a tendency of underestimating the originality of novel ideas and it may lead to premature rejection of new approaches, original and risky ideas would still be preferred if creative solutions are required and the evaluation criteria are less stringent (Blair & Mumford, 2007).

Culture as a contextual factor: power distance and collectivism/individualism

In addition to the time factor, the cultural background of leaders is also suggested to impact the framing of problems (Westaby et al., 2010). This is because culture is defined as a shared belief and sensemaking system, and people solve problems using culture as a reference point (Yukl, 2013). Differences in how people make decisions can be caused by the social and cognitive differences embedded in the culture (Yates & Oliveira, 2016).

Furthermore, leaders need the contribution of information from their followers for decision making, yet the cultural background of the followers can influence their preference of opinion sharing with the leaders. In the case of lack of willingness for sharing, it will actually cause a negative impact on leader decision making due to the availability of limited information (Hahn, Preuss, Pinkse & Figge, 2014; Hofstede, Hofstede, & Minkov, 2010; Kirkman, Chen,

Farh, Chen, & Lowe, 2009). In particular, power distance and individualism/collectivism have a

more direct impact on follower attitudes about information sharing and their relationships with

their leaders, because these factors affect their decision making and communication styles

(Hofstede et al., 2010).

　　Power distance is one aspect of culture frequently used to explain the variations in leader

decision making (Lee, Scandura & Sharif, 2014). Power distance means the degree that followers

show a willingness to disagree with the leaders (Hofstede et al., 2010). It also regulates the

appropriate relationship between leaders and followers according to their own cultural

background because they may have a fairly different view about the appropriateness of such

distance if they are not from the same culture (Fischer & Mansell, 2009; Hofstede et al., 2010).

Individuals from high power distance cultures show a tendency of having unquestioning respect

for authority (leaders) (Chen, Friedman, Yu, Fang, & Lu, 2009) and have an accepting attitude of

the extended social distance between leaders and followers (Kirkman et al., 2009). In light of

such dynamics between leaders and followers, Kirkman, Lowe, and Gibson (2006) remark that

people from high power distance cultures, regardless of their positions in organizations, may

value their participation in decision making less. Other studies have found that employees from

high power distance cultures have a lower desire for empowerment (e.g., Hui, Au, & Fock, 2004;

Kirkman et al., 2009; Robert, Probst, Martocchio, Drasgow & Lawlwe, 2000). Thus, even if

leaders desire active participation and opinions from their followers regarding decision making,

these followers in general do not have a high motivation to express their opinions (Kirkman et al.,

2009). In this sense, the low participation of followers during decision making would lead to

limited information that the leaders can collect from them. Due to the limited understanding of

the situation, leaders could eventually make a decision that ignores important information (Hahn et al., 2014).

Individualism/collectivism, another way of classifying cultures, is suggested to impact the degree of willingness individuals have to express opinions and beliefs, as it relates to conflict avoidance (Hofstede et al., 2010). Leaders need to pay attention to this because they need diversified information from others for decision making (Park & Nawakitphaitoon, 2017). Specifically, people from individualistic cultures (e.g. Americans) tend to adopt more assertive and confrontational styles for conflict resolution, whereas those from collectivistic cultures (e.g. South Koreans) do not like to engage in social disagreements and show a tendency of using more passive, collaborative and avoidance strategies to deal with conflict (Park & Nawakitphaitoon, 2017). In other words, conflict avoidance is regarded as a style of avoiding the expression of differences of opinions and beliefs among the group members. Following this logic, conflict avoidance is actually a style that avoids explicit and open discussion (Thomas & Dunnette, 1992). That is, leaders may encounter difficulties in collecting diversified information from their followers with a collectivist background as they tend to avoid conflict and expressing differing opinions.

Previous studies have found people from different cultures have different preferences about conflict avoidance with different reasons, and these differences have an impact on the decision making. For example, it is asserted that people in high conflict avoidance cultures, such as China, are more prone to conflict avoidant behaviors than Americans (Chiu & Kosinski, 1994). By the same token, Dyer and Song (1997) also assert in their study that American respondents are more likely to demonstrate more forceful behaviors than the Japanese. Another example is Miyahara, Kim, Shin, and Yoon's (1998) study, where they remarked that a high conflict

avoidance preference is found in both Korean and Japanese respondents, but their concerns are different. The Japanese are concerned about message clarity while the Koreans focused on relationships and avoiding hurting others' feelings. Avoiding discussion can be harmful to the decision making process because information gathering requires actors in the social network to share and acquire information (Hoppe & Reinelt, 2010). The important message for leader decision making is, employee openness about opinion sharing is an active response to problem handling, and how people participate in the decision making process can vary because it is dependent on their conflict style preferences (Park & Nawakitphaitoon, 2017).

The influence of time pressure and national culture can be seen through Jack Ma's leadership of Alibaba. As a founder and chairman of Alibaba, an e-commence giant in the Chinese online industry, his business success has been an inspiring story for many entrepreneurs. Yet how Ma as a leader handles the pirating and counterfeiting issues in his company (particularly the online shopping platform Taobao) has caused longstanding criticism and doubts from the public. One of the most controversial accusations faced by Alibaba was a scandal in 2011. Nearly 100 Alibaba salespeople were found to have assisted more than 2,000 sellers to defraud thousands of foreign merchants over the course of two years (Epstein, 2011; Schuman, 2015). It was reported that these salespeople likely knew it was illegal, but they still chose not to discuss it openly with the senior leadership team and assigned the contract to the sellers (Esptein, 2011). Ma took immediate actions and fired the involved employees (Epstein, 2011). Yet counterfeiting issues continue to be a big business challenge to the company. In 2016, a newly created category under Alibaba was suspended by the International Anti Counterfeiting Coalition after two U.S. fashion brands, Michael Kors and Gucci America Inc., protested with withdrawal (Dou, 2016). One could tell how Ma as the leader of Alibaba makes decisions about taking the

responsibility of intellectual property protection in the face of time pressure. There was a high degree of time pressure involved with aggressive business growth in China and the U.S., as commented by Savio Kwan, the lead investigator of the fraud scandal in 2011, 'The company was at risk of developing a culture of pursuing short-term financial gain at all cost.' (Schuman, 2015).

In the face of such time pressure, Ma and his senior leadership team are seen to dodge the responsibilities of stopping the presence of counterfeit goods on Taobao (Dou, 2016). With such direction from Ma and the senior leadership team, along with the preference of absolute obedience that is embedded in the Chinese culture's high level of power distance, there was no one from the junior level that raised any concerns about the unethical practices to the senior leadership team. Ma as a leader did weigh the options of protection of Alibaba's reputation and retaining high performing salespeople, and took immediate actions to settle the scandal in 2011 by firing the unethical staff.

In summary, leaders need to consider how time and culture impact information gathering, option evaluation and analysis, and their followers' willingness to participate during the decision making process.

Conclusion

In the past several decades, scholars have been continuously studying the behavioral pattern for which decision making theory cannot easily account (Oppenheimer & Kelso, 2015). In the context of decision making, Kahneman and Tversky (1986) point out that both rationality and people's beliefs and preferences that are influenced by framing are factors that need to be considered, and the tension between these two types of considerations have been the key subjects studied in decision making research.

Information processing, framing and option evaluation processes have a fundamental influence on decision making. Framing is argued to cause variance in decision makers' preferences and beliefs due to the impact of people's emotions and experiences (Kahneman & Tversky, 2000; Tversky & Kahneman, 1985). That is, the ability of decision makers to resist irrelevant information during decision making is affected by the problem and option framing. Emotionally loaded words can then impact the selection or avoidance of choices, which may eventually impact the outcome (De Martino et al., 2006; Kahneman & Frederick, 2007).

Following the same logic, as subjective interpretation of outcomes could cause biases and errors, and lead to variations in preferences and judgments (Tversky & Kahneman, 1974), leaders need to enhance their cognitive abilities to handle the performance and social information appropriately for the sake of decision quality (Mumford et al., 2017). This chapter emphasizes the importance of leader problem solving, social judgment, and emotion management. Leaders are to make sense of a situation, frame the problem with comprehensive performance and social information they have collected, and evaluate the ideas for generating the best possible solutions while managing their stress levels (Connelly et al., 2013; Mumford et al., 2007; Yukl, 2013). However, one has to note that decision making is highly contextual in which the decision making outcome is dependent on factors such as time and culture. Time pressure can cause variations in choice evaluation (Oppenheimer & Kelso, 2015), and a more simplified information processing strategy may also be adopted for quicker decisions (Zhao & Olivera, 2006). The decision quality may then deteriorate due to the occurrence of errors (Eubanks & Mumford, 2010; Hunter et al., 2011). Furthermore, the cultural background of people may influence their views and preferences about the situation and in turn influence problem framing (Westaby et al., 2010). Cultural differences in power distance and collectivism/individualism can also have an impact on

information collection such that follower behaviors in information gathering and interpretation vary according to their cultural background (Kirkman et al., 2006; Park & Nawakitphaitoon, 2017).

This chapter has discussed the importance of problem solving, social judgment and emotion management abilities on leader decision making outcomes. While the dominant view in management practices is that emotions and feelings are potential risk factors that are disadvantageous to decision quality, and they are to be suppressed or constrained (Ashforth & Humphrey, 1995; Putnam & Mumby, 1993). This notion is to be challenged because emotional experience can be a factor to facilitate or hinder the decision making outcome (Seo & Barratt, 2007). Because decision making is a contextual subject (Tversky & Kahneman, 1985), and by nature is impacted by subjective behavior, a further understanding about emotional and social knowledge structures, and how this information impacts decision making outcomes is needed (Connelly & Gooty, 2015; Zaccaro, Gilbert, Thor, & Mumford, 1991). Moreover, different types of abilities and strategies are needed for making various kinds of decisions since different problems do arise across performance domains (Mumford et al., 2017). As such, it is necessary to have a more systematic and comprehensive understanding of how specific leader ability requirements can help to manage certain problems that confront leader roles (Mumford et al., 2017).

In addition to the above suggestions regarding emotional abilities and measurement, because the situation is assumed to shape the degree to which a leader would involve followers during decision making (Oc, 2018) and recent research has been conceptualizing leadership as a mutual influencing process among leaders and followers (Day et al., 2004; Pearce & Conger, 2003; Morgeson, DeRue, & Karam, 2010), the follower situation is one of the factors impacting

leader decision quality. For example, appropriate empowerment is found to increase the decision acceptance and quality as a whole, and by facilitating collective understanding and learning about performance determinants, overall strategic decision quality could also be improved (Baumard & Starbuck, 2005; Edmondson, 1999; Edmondson, 2002; Yukl, 2013). In essence, a more comprehensive view that integrates follower impact in terms of leader decision making is recommended.

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