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ETHICAL DECISION MAKING BY BUSINESS LEADERS: THE IMPACT OF COGNITIVE BIASES AND STRATEGIES

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF PSYCHOLOGY

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To my parents, Joseph and Carol, for your support throughout my education and quest to figure out what I wanted to be when I grew up; without you, this milestone would not have been possible.

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Table of Contents

Acknowledgements iv

Table of Contents v

List of Tables vii

Abstract viii

Introduction 1

Improving Ethical Decision Making 4

Cognitive Biases 8

Compensatory Strategies 15

Ethical Decisions and Organizational Performance 19

Organizational Performance 21

Method 24

Historiometric Method 25

Biography Sampling 25

Sample 26

Historiometric Content Analysis 27

KLD Ratings 29

Organizational Performance Measure 31

Control Variables 32

Analyses 33

Results 34

Covariate Analysis 35

Cognitive Bias and Compensatory Strategy Analyses 36

Organizational Performance Analyses 38
Limitations 39
Discussion 42
Theoretical Contributions 43
Practical Implications 48
Future Research 55
Conclusion 56
References 57
Appendix A: Tables 75
Appendix B: Rater Training Guide 85
Appendix C: Biography Reference List 118

List of Tables

Table 1. Operational Definitions for Cognitive Biases 76

Table 2. Operational Definitions for Compensatory Strategies 77

Table 3. Leaders, Organizations, and Covariates 78

Table 4. Means, Standard Deviations, and Correlations for Key Outcome Variables and Cognitive Biases 81

Table 5. Means, Standard Deviations, and Correlations for Key Outcome Variables and Compensatory Strategies 82

Table 6. Regressions for Ethical Decisions on Cognitive Biases 83

Table 7. Regressions for Ethical Decisions on Compensatory Strategies 84

Abstract

Business ethics refers to the examining right or wrong human behavior in business settings. A common human behavior in the business world is decision making, and some of the most important decisions made by business leaders are those that involve responding to ethical dilemmas. Leader ethical decision making is a skillset that can be improved to yield better results for organizations. Theoretical models have been used by leaders to guide decision making efforts in the past, but more effective models have been identified for guiding ethical decision making. The present study uses a historiometric approach to explore ethical decisions by business leaders in real-world settings through the lens of sensemaking, a theoretical model shown to improve ethical decision making outcomes. Mechanisms that operate on sensemaking are tested revealing specific cognitive biases that decrease leader ethical decisions and specific strategies that increase leader ethical decision making. Implications for biases and strategies are discussed and the financial impact of leader ethical decisions on organizations is explored.

Key words: business ethics, ethical decision making, biases, strategies, sensemaking, leaders

Introduction

Recent years have brought many changes to the operating environment of U.S. businesses. The economic downturn of 2008 left many wondering who was to blame for corporate-level failures including the corporate scandals the rocked the business world (e.g. WorldCom, Enron, Bear Sterns, Lehman Brothers, AIG, Countrywide Financial, and JP Morgan Chase). Such scandals have led to an increased prevalence of discussions surrounding business ethics, and ultimately to a perception that businesses in today's world are operating less ethically than those of the past. While this perception isn't necessarily accurate (*Ethics Resource Center*, 2014), it has prompted scientific, political, and social inquiry into the nature of business ethics, the effect(s) of ethicality, and the individuals responsible for ensuring morality in the business-operating environment.

Ethics Resource Center (2014), reports a 14% decrease between 2007 and 2013 in the numbers of workers reporting observed misconduct while on the job, and a 2% drop in the number of workers that felt pressured to compromise their own moral standards. Continued inquiry into the area of business ethics may foster continued improvement of ethical business practices. In order to continue improving, a deeper understanding of ethicality in the business world must be developed concerning ethicality in relation to the business world. Business ethics is defined as "the study of what constitutes right and wrong, or good and bad, human conduct in a business context (Shaw & Barry, 2013, p. 3) Although often considered entities in a legal sense, corporations, as a whole, do not make decisions. Rather, decision making is a function of management with the organization. A logical starting point in attempting to better

understand ethics in business is to examine the decisions made by leaders (such as majority shareholders, founding partners, Chairman, and Chief Executive Officers) within those organizations. These individuals are viewed as the personification of the corporate entity. Although decisions are made by a small group of stakeholders, their actions and decisions represent the entire organization, and decision makers are viewed as contracting agents of the organization (Herman, 1981).

The nature of decision making by business leaders make it a critical process (Fleishman et al., 1991; Mumford, Campion, & Morgeson, 2007; Mumford, Zaccaro, Harding, Jacobs, & Fleishman, 2000) for both short and long term success. Complicating the decision making process is the uncertain, unpredictable, and ambiguous nature of the business world (Marion & Uhl-bien, 2001; Mathews, White, & Long, 1999; Mumford, Peterson, MacDougall, & Zeni, in press; Sonenshein, 2007). In such circumstances, traditional models of decision making (e.g., rational decision making) may not fully recognize the complexity of the situation. Sensemaking, an alternate model to understanding organizational decision making that incorporates multiple frames of reference and shows promise in terms of organizational outcomes in crisis-like or ambiguous situations (Maitlis & Sonenshein, 2010; Weick, 1998), may prove more useful for examining ethical decision making in organizations. As such, the current study examines the decisions made by organization leaders from a sensemaking perspective (Weick, 1995) in order to identify process improvements that yield more desirable results during ethical dilemmas.

In light of growing complexities when interacting between national and international social and legal systems, moral dilemmas, or ethical decisions, are

increasingly prevalent in today's business environment (Luftig & Ouellette, 2009). The nature of ethical dilemmas in leader decisions stems from the impact on groups and/or other individuals that may not be directly tied to the organization (Brown, Treviño, & Harrison, 2005; Clarkson, 1995; Goodpaster, 1991; Hasnas, 1998; Messick & Bazerman, 2006). Stakeholder theory (Freeman, 1984), posits organizational performance is contingent on generating profit as well as considering a much larger group with vested interest including customers, business partners, politicians, and societal entities (e.g., communities in which businesses operate, special interest groups, etc.). The change in scope from traditional shareholder perspectives to stakeholder perspectives complicates the decision-making process of organizational leaders by creating countless contingencies. When business leaders fail to consider the impact of organizational decisions on societal groups, or make decisions that reflect the best interest of only one group (shareholders), negative consequences can result regardless of intent (Gatewood & Carroll, 1991).

The current study employs stakeholder theory (Freeman, 1984) as a framework for understanding the impact of ethical decisions by organizational leaders on organizational performance. Research on ethical leadership (Brown & Treviño, 2006; Brown, Treviño, & Harrison, 2005) ties ethical decisions to micro-level outcomes such as follower trust, job satisfaction, and perceived effectiveness of the leader. However, little research to date has examined micro-level leader decisions on macro-level outcomes, specifically organizational performance. For example, Ashford & Gibbs (1990) examine the influence of ethicality on stakeholder perceptions of legitimacy but do not examine "hard" measures of performance. This study examines the influence of

ethicality on performance as determined by the organization's market value and seeks to establish the business case for ethical decision making.

Improving Ethical Decision Making

News from the *Ethics Resource Center* (2014) shows promising evidence that ethics, and ethical decision making, is a skillset that can be improved through training interventions. Organizations increasingly focus on ethical awareness and interventions through creating executive-level, Ethics Officer, roles within their structures (Donaldson, 2003). Training and heightened awareness of business ethics is a sentiment echoed in professional preparation programs as well. This is evident in increasing focus on teaching business ethics as part of business school curricula, specifically as part of professional development within MBA programs (Donaldson, 2003; Gloeckler, 2012). Researchers have demonstrated promising results for graduate students in controlled studies evaluating ethical decision making subsequent to training interventions (Mumford et al., 2008). Similar interventions may be beneficial for business leaders tasked with decision making on behalf of their organizations.

The decisions made by business leaders are critical to organizational success and therefore one of the more important aspects of leaderships in the modern world (Fleishman et al., 1991, Mumford et al., 2000). Normative approaches to business ethics and ethical decision making dictate that leaders must identify an ethical dilemma, and then apply a moral code or standard to evaluating potential courses of action (Jones, 1991; Rest, 1986). Centuries of philosophical debate have led to three prevalent moral codes for decision making; the rights perspective, the justice perspective, and the

utilitarian perspective (De George, 1990; Gatewood & Carroll, 1991; Velasquez, 1982). Rights theories maintain that ethically acceptable decisions are those that protect the individual rights or entitlements (i.e., property, personal, legal, and moral). Justice perspectives suggest the best ethical decisions result from treating all persons with fairness, equity, and impartiality. Utilitarian theories maintain the best ethical decisions are the ones that produce the best outcome for the greatest number of people (Gatewood & Carroll, 1991). While useful guidelines or what leaders "should" do, in real-world business application these theories are wanting (Sonenshein, 2007). Business leaders often find themselves in situations where normative viewpoints compete with one another (De George, 1990). Further, the complex and ambiguous nature of today's operating environments (De George, 2000; Marion & Uhl-bien, 2001; Mathews, White, & Long, 1999) prevents leaders from successfully evaluating alternatives and outcomes against a normative prescription (Sonenshein, 2007). Finally, multiple stakeholders (Clarkson, 1995; Donaldson & Preston, 1995; Goodpaster, 1991; Hasnas, 1998) may have competing interests, and cross-stakeholder interactions resulting from leader decisions to optimize results for one interest can create an ethical concern for another (Barry, 1986; Gatewood & Carroll, 1991).

Rather than rely on normative theories with equivocal results, current research on sensemaking provides leaders with a pragmatic framework for decision making (Mumford et al., 2008; Sonenshein, 2007; Thiel, Bagdasarov, Harkrider, Johnson, & Mumford, 2012). In simplest terms, sensemaking (Weick, 1995) is a series of cognitive processes in which an individual engages when deciding a course of action. More specifically, sensemaking is a flexible framework that allows for the incorporation of

contextual, behavioral, and normative elements into the decision making process, making it ideal for novel, complex, and ambiguous situations such as those faced by organizational leaders (Mumford, Friedrich, Caughron, & Antes, 2009; Mumford, Friedrich, Caughron, & Byrne, 2007; Strange & Mumford, 2005). When engaging in sensemaking, leaders first recognize a problem and compare current situational elements to prior ones (Reiter-Palmon, Mumford, Boes, & Runco, 1997), and then form a mental model of the problem at hand (Drazin, Glynn, & Kazanjian, 1999; Johnson-Laird, 1983). The mental model is then used to guide subsequent sensemaking processes such as information gathering, alternative evaluation, and contingency planning (Thiel et al., 2012; Weick, Sutcliffe, & Obstfeld, 2005). The extent to which leaders successfully navigate the various processes suggested by sensemaking theory (Weick, 1995) effects the overall quality of their ethical choices (Caughron et al., 2011; Hmelo-Silver & Pfeffer, 2004; Hogarth & Makridas, 1981).

Weick (1995) introduced the theory of sensemaking as a model for how individuals interpret, understand, and then act based on their social environments. Within organizational settings, sensemaking presents an alternative, descriptive, model for decision making (Weick, 1995; Weick, Sutcliffe, & Obstfeld, 2005) that better explains leader behavior than classic, normative decision making models (cf. Simon, 1960, 1979). Weick (1995) posits individuals will first utilize clues to alert them to a change in status quo, then actively seek information, interpret that information based on established cognitive framework(s), and then act based on their interpretation. Importantly, Weick (1995) suggests that the process is ongoing and dynamic wherein reality is formed based on the outcomes of sensemaking, a process called enactment.

This social constructionist viewpoint of decision making allows for the incorporation of multiple and often competing cognitive frameworks or schemas, individual perceptions and biases, and an explanatory mechanism for the often complicated and dynamic interaction between individuals and their respective environments (Gioia, 2006).

Individuals engage in sensemaking when faced with situations of ambiguity or equivocality, characterized by multiple and potentially competing interpretations of events or information, or situations of uncertainty where the probability of outcomes based on alternatives choices is unknown (Sonenshein, 2007; Weick, 1979, 1995). Given that the business environment is largely characterized by ambiguity and uncertainty as well (Marion & Uhl-bien, 2001; Mathews et al, 1999), sensemaking becomes a promising lens through which understanding and making business decisions can be examined. First, myriad research employs sensemaking as a theory for examining crises as well as change in organizations (see Maitlis & Sonenshein, 2010; Weick, 1988), both situations that are characterized by ambiguity and uncertainty. Ethical dilemmas are also characterized by ambiguity and uncertainty (Sonenshein, 2007), making them highly relevant for examination through the lens of sensemaking. Further, Weick's (1995) social construction perspective anchored to sensemaking theory suggests the actions taken by leaders create the circumstances in which the organization must then operate through enactment. Given that ethical dilemmas are manifested by prior leader decisions that negatively impact one or more stakeholder groups (Gatewood & Carroll, 1991), sensemaking theory provides a framework for understanding how organizations find themselves faced with ethical dilemmas and how subsequent decision making may either ameliorate or exacerbate the situation (Weick,

1998). Finally, a central tenet of Weick's sensemaking is the interpretation of information based on the individual's prior experience (1995). Prior social experiences provide a framework, or mental model, for attempting to understand information retrospectively (Weick et al., 2005). Frameworks may be generated from prior personal and/or professional experience, and information may take on different meanings depending on which framework it is analyzed through. In terms of ethical decision making, incorporating the existence of multiple frameworks eliminates the need to adopt any one philosophical approach to business ethics and promotes making the most effective decision given all perspectives considered. However, with the existence of multiple frameworks comes the potential for those frameworks to generate competing interpretations of information further adding to ambiguity and uncertainty (Weber & Glynn, 2006). While speaking to the complexity of ethical dilemmas, multiple frameworks and retrospective analysis also implies the presence of cognitive bias in the sensemaking process.

Cognitive Bias

At the heart of the sensemaking process is mental model development of the decision at hand (Hogarth & Makridakis, 1981). The interpretation of the situation, decision, collected information, etc. rests with the mental model developed by the leader (Hmelo-Silver & Pfeffer, 2004). Information about the decision-making task directly influences the mental model that is developed (Mumford, Baughman, Supinski, & Maher, 1996; Mumford & Gustafson, 1988; Mumford, Reiter-Palmon, & Redmond, 1994), and sensemaking theory (Weick, 1995) dictates that information is absorbed by the leader through their own individual frameworks. As such, the process of gathering

and interpreting information and subsequent mental model formation, is subject to cognitive bias. Indeed, cognitive bias has been shown to reduce the efficacy of ethical leader decision making (Banaji, Bazerman, & Chugh, 2003; Hammond, Keeney, & Raiffa, 2006; Messick & Bazerman, 1996; Moore, Tetlock, Tanlu, & Bazerman, 2006; Treviño, Weaver, & Reynolds, 2006). From the perspective of the sensemaking process and decision making process, cognitive bias exerts influence on mental model construction, as well as on the evaluation of solution alternatives and outcomes based on those mental models.

Caughron et al. (2011) simplify explanations of sensemaking by describing it in terms of three component processes; problem recognition, information gathering and interpretation, and information integration. During problem recognition, leaders must recognize events or situations as deviating from what is normal or expected and then decide whether or not action should be taken. During information gathering and interpretation, leaders actively pursue information regarding the problem and attempt to make sense of, or interpret its meaning. During information integration, leaders connect the information they've obtained in meaningful ways in an attempt to produce a complete image, or mental model, of the problem and utilize this model as the basis for decision making. A review of current literature on business practices, organizational behavior, and management reveals the prevalence of several cognitive biases that may influence sensemaking during each stage of the process.

Cognitive bias can interfere with problem recognition resulting in a leader that fails to see an ethical dilemma, or purposefully decides to ignore one and not take further action. For example, inability to recognize social cues may result in a leader that

fails to see the ethical implications of a pending decision. In doing so, the leader overlooks the complexity of the situation and ultimately either relies on programmed decision making and heuristics, or builds an inappropriately limited mental model. Researchers have previously ascribed failure to recognize ethical dilemmas as a primary reason for making unethical decisions (Jones, 1991; Kohlberg, 1981, 1984; Rest, 1986). Subsequent research has provided support for moral insensitivity as a predictor of unethical decisions (Detert, Treviño, & Sweitzer, 2008; Harman, 1999; Rachlinski, 2004), and unethical decisions by business leaders in particular (Bradford & Garrett, 1995; Smith, Skalnik, & Skalnik, 1999; Wittmer, 2000).

Decision-makers may engage in self-handicapping by allowing obstacles and/or setbacks to become excuses for avoiding problems, generating a self-fulfilling prophecy for failure (McCrea, 2008; McElroy & Crant, 208; Rhodewalt, Tragakis, & Finnerty, 2006; Tenbrunsel & Messick, 2004; Watson, Freeman, & Parmer, 2008). Leaders may obtain false consensus and incorrectly assume everyone involved in a situation shares their point of view; incorrectly assessing stakeholders concerns (Alick & Largo, 1995; Der Pligt, 1984; Krueger & Zeiger, 1993; Krueger & Clement, 1994; Marks & Miller, 1987; Monin & Norton, 2003; Russell & Arms, 1995). Leaders may fail to appropriately question situations or actions and defer to the judgment of perceived experts or authority figures (Skitka, Bauman, & Lytle, 2009). Recognizing a problem also provides a catalyst for change. Failing to do so favors maintaining the status quo (Geletkanycz, 1997; Hannan & Freeman, 1984; Kelley & Amburgery, 1991; Peterson, Owens, Tetlock, Fan, & Martorana, 1998; Ritoy & Baron, 1993; Samuelson & Zeckhauser, 1988; Sims, 1992). Leaders may also chose not to act in response to a

problem in order to avoid responsibility (Hawley, 1991; Novicevic, Buckley, & Harvey, 2008; Wilson, 1993), or willfully ignore signs that a problem exists (Ehrich & Irwin, 2005).

During information gathering and interpreting, naively assessing individual levels of knowledge and expertise may may result in failure to seek additional information and differing perspectives (Akin, 2007; Froeb & Kobayashi, 1996). Leaders may assume too much responsibility for outcomes believing they alone are capable of optimally generating solutions and engaging in undue autonomy (Christensen & Kohls, 2003; Gandz & Bird, 1996; Ludwig & Longenecker, 1993; Orpen, 197; VanSandt & Neck, 2003). Alternatively, as a means of avoiding personal blame for potential outcomes, leaders may purposefully involve others in the decision making process in order to diffuse their level of responsibility (Bandura, 1999; Dozier & Miceli, 1985; Forsyth, Zyzniewiski, & Giammanco, 2002; Whyte, 1991).

The opportunity for the sensemaking process to incorporate multiple frames of reference can be both beneficial, as previously noted, and harmful. In terms of information gathering and interpretation, multiple frameworks for interpreting information can be problematic when leaders assign different weighting schemes to various frameworks. Such differential weighting is likely to skew mental model development in favor of one framework over the other. For example, leaders have both personal and professional frames of reference based on prior experiences (Weick, 1979, 1995). When overly weighting one frame of reference (e.g. personal experiences), it is possible to neglect information pertaining to other frames of reference (e.g. professional) or to underestimate the significance of information to that frame, causing

the leader to inadequately balance their personal and professional roles (Floyd & Lane, 2000; Marks & MacDermid, 1996; Rizzo, House, & Lirtzman, 1970; Tubre & Collins, 2000). On a similar note, leaders may overlook the importance of standards and values associated with their personal frames in favor of the interests of the larger, social entity (the organizational or professional frame), which may or may not subscribe to the same level of standards and values. In doing so, leaders make unwarranted compromises of their own values to avoid conflict a social value system. Such framing issues during information interpretation result in the leader developing mental models that are either too narrow or too broad with respect to the scope of information included in the model (Hodgkinson, Maule, Brown, Pearman, & Glaister, 2002; Kühberger, Schulte-Mecklenbeck, & Perner, 2002; Milch, Weber, Appelt, Handgraaf, & Krantz, 2009; Schoorman, Mayer, Douglas, & Hetrick, 1994; Tversky & Kahneman, 1981; Wright & Goodwin, 2002).

Cognitive bias may impact ethical decision making by directing leaders to take unwarranted short-cuts through information integration process. Sensemaking is an active, effortful, and complex process (Weick, 1995). Leaders may feel it necessary to force a decision by prematurely taking action to reduce ambiguity and uncertainty, or satisfice instead of working toward an optimal decision (Bouckenooghe, Vanderheyden, Mestdagh, & Van Laethem, 2007; DeGrada, Kruglanski, Mannetti, & Pierro, 1999; Dougherty & Harbison, 2007; Kruglanski & Webster, 1996; Roets & Van Hiel, 2008; Shiloh, Koren, & Zakay, 2001; Van Hiel & Mervielde, 2002). Leaders may also reduce the effort put into sensemaking when they fail to consider the dynamic relationship between decisions and the resulting enacted environment and instead believe the

environment will simply respond in exactly the way they predicted by their illusion of control (Goodman & Irwin, 2006; Kottemann, Davis, & Remus, 1994; Moore, Kurtzberg, Fox, & Bazerman, 1999; Neil, Martz, & Biscaccanti, 2004). Over time, leaders may become rigid in their professional frameworks, ignoring environmental cues to update social information (e.g., organizational polices or professional guidelines) and misapply their existing outdated principles integrating outmoded criteria with new current problems (Deming et al., 2007; Hass, Malouf, & Mayerson, 1988). Finally, leaders may integrate only information that supports their prior assumptions or viewpoints as a means of justification (Levy & Hershey, 2008; Sharma, Albers-Miller, Pelton, & Straughan, 2006; Sivanathan, Molden, Galinsky, & Ku, 2008; Wolff & Moser, 2008).

The current study examines business leader ethical decisions for the prevalence of these sorts of cognitive biases. Building on prior research (Anderson, 2003; Butterfield, Teviño, & Weaver, 2000; Messick & Bazzerman, 1996; Mumford et al., 2009a; Schweitzer, DeChurch, & Gibson, 2005; Yaniv & Kleinberger, 2000), the following cognitive biases are examined: 1) abdication of responsibility, 2) changing norms and standards, 3) diffusion of responsibility, 4) false consensus, 5) forcing a decision, 6) framing, 7) illusion of control, 8) inadequate role balancing, 9) maintaining the status quo, 10) moral insensitivity, 11) naiveté, 12) self-handicapping, 13) self-justification, 14) undue autonomy, 15) unquestioning deference to authority, 16) unwarranted compromise, and 17) willful ignorance. Expanded definitions of each cognitive bias may be found in Table 1. Based on the aforementioned prior research, the following hypothesis is suggested:

$H1_a$: The prevalence of cognitive bias by business leaders when engaged in ethical decision making will increase the number of unethical decisions made by the leader.

Effective mental model construction during sensemaking improves ethical decision making outcomes (Brock et al, 2008; Caughron et al., 2011; Mumford et al., 2008; Thiel et al., 2012). To the extent cognitive bias interferes with mental model creaiton (Banaji et al., 2003; Tenbrunsel & Messick, 2004) it is likely to impair leader's ability to make ethical decisions as well as increasing their likelihood of making unethical decisions. The following hypothesis is suggested:

$H1_b$: The prevalence of cognitive bias by business leaders when engaged in ethical decision making will decrease the number of ethical decisions made by the leader.

Because sensemaking (Weick, 1995) is a constructionist process where leaders shape reality based on past decisions, decision outcomes of sensemaking are likely to impact one another over time. As such, the influence of cognitive biases in the sensemaking process is likely to affect decision outcomes across multiple decisions. The following research question is proposed:

R1: Leaders exhibiting greater degrees of cognitive biases in decision making will reduce the overall ethicality of the organization.

Compensatory Strategies

Weick's sensemaking theory and model for understanding decision making (1995) has yielded explanatory insights into the way leaders make decisions, particularly during times of crisis (Maitlis & Sonenshein, 2010). Better understanding of how leaders make decisions not only provides a mechanism for explaining outcomes, but also a tool for making recommendations regarding decision process changes that yield improved outcomes (Christianson, Farkas, Sutcliffe, & Weick, 2009; Maitlis & Sonenshein, 2010; Weber & Glynn, 2006; Weick, 1998; Weick et al., 2005). Improvement is obtained by developing leader skills and capabilities associated with individual parts of the sensemaking process (Weick et al., 2005). Applying the sensemaking framework to situations involving ethical dilemmas identifies opportunities for process improvement that yield better ethical decision outcomes (Sonenshein, 2007).

Research on ethical decision making from a sensemaking perspective suggests development of cognitive, or compensatory, strategies that improve various stages of the sensemaking process and reduce cognitive bias (see Anderson, 2003; Butterfield et al., 2000; Darke & Chaiken, 2005; Kahneman, 2003; Tenbrunsel & Messick, 2004). By combining sensemaking theory with a series of experimental and evaluation studies, Mumford and colleagues specify multiple compensatory strategies that improve ethical decision making outcomes (Brock et al., 2008; Caughron et al., 2011; Kligyte, Marcy, Sevier, Godfrey, & Mumford, 2008; Mumford et al., 2008; Mumford et al., 2009a). These compensatory strategies include recognizing circumstances, seeking outside help, questioning judgment, dealing with emotions, anticipating consequences of actions,

analyzing personal motives, and considering the effects of actions on others (Mumford et al., 2008).

A review of organizational behavior and management literature suggests several compensatory strategies that operate on the component processes (Caughron et al., 2011) of sensemaking yielding improved decision making. During problem recognition, leaders identify something is wrong and then decide to engage in subsequent processes. Understanding and applying professional guidelines identifies issues and signals the need for sensemaking over heuristic decision making processes (Deming et al., 2007; Haas et al., 1988). Once identified, a leader may selectively engage the problem or not based on likelihood of success (Dhar, 1996; Higgins, Camacho, Idson, Spiegel, & Scholer, 2008). Understanding decision making roles within larger social contexts and recognizing the boundaries of ones abilities is a way of gauging likelihood of success (Ellemers, Pagliaro, Barreto, & Leach, 2008; Haas et al., 1986; Overholser & Fine, 1990). Once committed, further action in sensemaking is directed toward deliberately and decisively achieving the optimal outcome (Ajzen, 1991; De Viries, Holland, & Witteman, 2008; Hofman, Friese, & Strack, 2009; Puca, 2004; Richetin, Perugini, Adjali, & Hurling, 2007).

Multiple strategies exist for improving the information gathering stage of sensemaking as well. Information gathered during sensemaking is subject to interpretation (i.e., retrospective understanding) through prior personal and professional experiences or frameworks (Weick, 1995, 1998). Information is understood through the influence of multiple value systems (Freud & Krug, 2002; Fritzsche & Oz, 2007; Joyner & Payne, 2002; Mattison, 2000). Likewise, information is understood through varied

social norms (Agerström & Björklund, 2009; Frame & Williams, 2005; Knapp & VandeCreek, 2007; Schweitzer & Gibson, 2008; Spicer, Dunfee, & Bailey, 2004; Westerman, Beekun, Stedham, & Yamamura, 2007). Information interpretation is retrospective and based on prior experiences. Assumptions regarding past experience should be monitored to assess their influence on information interpretation (Armor & Taylor, 203; Mumford, Schultz, & Van Doorn, 2001; Schwenk, 1989). Minimizing these influences on interpretation requires constant evaluation of individual biases in order to maintain an objective focus in the process (Caruso, 2008; Cokely & Feltz, 2009; Wood, Atkins, & Tabernero, 2000). Due diligence to the sensemaking process will call for recognizing when information gathering has not been sufficient before moving on to later stages (Harvey & Fischer, 1997; Lipshitz & Strauss, 1997).

During the information integration stage of sensemaking, a mental model of related to the decision-making task is created and used to generate and evaluate solution alternatives (Caughron et al., 2011). To be effective, mental models need sufficient breadth and depth to account for the complexity of the ethical dilemma (Kimmel, 1991; Mumford, 2002; Mumford, Schultz, & Osburn, 2002). Based on complexity evaluation of the mental model, a course of action must be selected. Strategy selecting of alternatives requires considering elements such desired outcomes, selection criteria, and decision rules (Bettman, Johnson, & Payne, 1990; Chu & Spires, 2003; Mitchell, 1996; Payne, Bettman, & Johnson, 1988; Strub, 1969). The outcomes of a decision may not always be favorable to all stakeholder groups. In such cases, striving for transparency in the process itself can build stakeholder acceptance (Malenko, 2014; Weston & Weston, 2013). Sensemaking specifies a dynamic interaction between decisions and

environments. Contingency planning highlights alternative courses of action should sensemaking decisions not yield desired outcomes (Bloom & Menefee, 1994; Haas, 2008; Posavac, Sanbonmatsu, & Frazio, 1997). The sensemaking process is complex and resource-intensive. Its success hinges on the decision maker's desire to select optimal alternatives. Maintaining self-accountability and individual standards throughout the process promotes that desire (Collins & Stukas, 2008; Lerner & Tetlock, 1999; Novicevic et al., 2008; Wolff & Moser, 2008).

Sonenshein (2007) suggests research on ethical decision making using sensemaking should migrate away from the scenarios and vignettes typically used because they fail to sufficiently mimic the complexity of the real world and truly engage the sensemaking process. The current study builds on research in ethical decision making by extending the strategies outlined by Mumford and colleagues (Mumford et al., 2008; Caughron et al., 2011) into a business context, and evaluates the effectiveness of sensemaking compensatory strategies by organizational leaders in a real-world context. Based on prior research, the following compensatory are evaluated: 1) complexity evaluation, 2) contingency planning, 3) deliberative action, 4) maintaining objective focus, 5) monitoring assumptions, 6) recognition of insufficient information, 7) recognizing boundaries, 8) selective engagement, 9) self-accountability, 10) strategy selection, 11) striving for transparency, 12) understanding guidelines, and 13) value/norm assessment. For expanded definitions of these strategies see Table 2. Given the utility of the sensemaking framework for business leaders (Sonenshein, 2007; Thiel et al., 2012) and the success of compensatory strategies in improving ethical decision

making in academic contexts (Caughron et al., 2011; Brock et al., 2008; Kligyte et al., 2008), the following hypothesis is suggested:

> $H2_a$: The use of sensemaking compensatory strategies by business leaders will yield more ethical decisions.

Unethical decisions are likely to result when decision makers are impaired by cognitive bias, fail to see ethical implications of problems, and do not engage in sensemaking (Jones, 1991; Mumford et al., 1994; Smith et al., 1999; Wittmer, 2000). Compensatory strategies can reduce cognitive biases that lead to unethical decisions by signaling sensemaking processes that encourage critical, in-depth thinking versus heuristic processing (Weick, 1995, 1998). As such, the following hypothesis is suggested:

> $H2_b$: The use of sensemaking compensatory strategies by business leaders will lead to fewer unethical decisions.

The constructionist nature of sensemaking (Weick, 1995) suggests compensatory strategies may operate differently when leaders make multiple decisions over time that are influenced by prior decisions. The following research question is suggested:

> R2: Leaders that employ compensatory strategies while engaging in sensemaking when faced with ethical dilemmas will improve the overall ethicality of the organization.

Ethical Decisions and Organizational Performance

Since the Enron affair in the 1990's, organizations have increased emphasis on ethical business practices, and society has increased scrutiny on the affairs of

organizations. Concurrently, there has been an increased interest in business ethics within academic communities (Tenbrunsel & Smith-Crowe, 2008). Academics have taken business ethics research and discussion in two distinct directions - one empirical with focus on cause and effect relationships between business practices and outcomes and the other philosophical with focus on theoretical notions of the meaning and application of ethics within a business context (Donaldson & Dunfee, 1994; O'Fallon & Butterfield, 2005). After reviewing early academic work on business ethics, Kahn (1990) describes this dichotomy of focus as normative versus contextual. Normative approaches focus on what organizations should do, and rely on philosophical and theoretical perspectives (Weaver & Treviño, 1994). On the other hand, contextual work focuses on situational aspects of business ethics, individual behavior, and, by extension, organizational outcomes or results (Kahn, 1990; O'Fallon & Butterfield, 2005).

Building on the contextual side of research, academics can make pragmatic and beneficial recommendations to the business operating community (O'Fallon & Butterfield, 2005). As opposed to suggesting what business "should" do, the contextual, behavioral, or normative approach leverages empirical data from research to examine what people and businesses actually do (Tenbrunsel & Smith-Crowe, 2008). This data-driven, normative approach adds utility to the business world and its leaders by examining causal relationships that predict real-world outcomes. Examining individual ethical behaviors and outcomes, otherwise known as behavioral ethics (see Jones, 1991; Trevino, Weaver, & Reynolds, 2006), suggests further research on individual decision making within an ethical context is beneficial to the business community (Ford & Richardson, 1994, Low, Ferrell, & Mansfield, 2000; O'Fallon & Butterfield, 2005;

Trevino, 1986). The sensemaking approach allows for the exploration of individual behaviors within the behavioral ethics domain.

Organizational Performance

Downstream effects of ethical decision making by organization leaders are of paramount importance. In today's ethics-focused world, better ethical decision making by leaders is likely to improve organizational performance. Research by Brown et al. (2005) shows leader ethical behaviors, including decision making, are related to micro-level organizational performance outcomes such as perceived leader effectiveness, subordinate job satisfaction, and employee dedication. However, absent from most discussions is the effect of ethical decision making on macro-level outcomes such as financial performance. Over time, individual decisions by leaders result in an organization that tends to behave either more or less ethically than others. Organizations that behave more ethically than others are those whose decisions consistently acknowledge the well-being of their various stakeholders.

In describing stakeholder management and subsequent stakeholder theory, Freeman (1984, p. 46) defines stakeholders as, "any group or individual who can affect or is affected by the achievement of the organization's objectives." At its most basic, business ethics can be described as the moral code dictating organizational behavior and shaping the perceptions of organizational decisions as either right or wrong. By Freeman's (1984) definition of stakeholders, leader ethical decision making is tied to stakeholder management in that any group potentially affected by leader ethical decision making would be consider a stakeholder for that organization. Freeman (1994)

elaborates on the tenants of stakeholder theory and explicitly ties business ethics to stakeholder management stating, "We cannot divorce the idea of a moral community or of a moral discourse from the ideas of the value-creation activity of business" (Freeman, 1994, p. 419). Stakeholder theory provides a theoretical rationale for the business case (i.e., dollars and cents) behind ethical decision making.

Donaldson and Preston (1995), add to the conceptualization of stakeholder theory by suggesting Freeman's original theory is comprised of three distinct yet interrelated points of view. Specifically, stakeholder theory is descriptive, normative, and instrumental wherein descriptive stakeholder theory describes how managers actually behave, normative stakeholder theory informs how managers should behave, and instrumental stakeholder theory predicts the outcomes of managers' behaviors. Although concluding that a normative basis is the best way to view stakeholder theory and that both descriptive and instrumental views can be subsumed under a normative perspective (Donaldson & Preston, 1995), subsequent research continues to maintain that stakeholder theory is instrumental and that stakeholder management positively predicts performance (Cragg, 2002; Doh & Quigley, 2014; Jones, 1995; Rowley & Berman, 2000). Specifically, research has found that stakeholder management increases motivation and organizational creativity (Zhang & Bartol, 2010), leverages diversity (Edmondson, 1999; Stasser & Titus, 1985; Thomas, 2004), and improves cross-cultural efficacy (Miska, Stahl, & Mendenhall, 2013; Stahl, Pless, & Maak, 2013).

Stakeholder theory (Freeman, 1984) provides a framework sufficiently broad in breadth and depth to address the complexity of relationships in today's business environment and to draw practical implications from those relationships (Mitchell,

Agle, & Wood, 1997). In terms of cause and effect, leader ethical decision making is directly tied to the effect of those decisions on stakeholders. An instrumental approach to stakeholder theory suggests consideration of stakeholder interests in decision making will increase organizational performance. Research ties stakeholder management to various organizational performance variables (Edmondson, 1999; Miska et al., 2013; Stahl et al., 2013; Stasser & Titus, 1985; Thomas, 2004; Zhang & Bartol, 2010), but the effect of stakeholder management on financial performance indicators, such as market value, remains relatively unexplored. The lack of empirical research in this area is noted in Donaldson and Preston's (1995) critique of the three viewpoints associated with stakeholder theory and factors into their conclusion that stakeholder theory is normative in nature. However, their conclusion is rooted in a lack of research supporting the instrumental viewpoint. Research connecting organizational performance and stakeholder management suggests this conclusion to be premature as there is an instrumental value (rooted in tangible organizational outcomes such as financial performance) associated with stakeholder management as rooted in tangible organizational outcomes such as financial performance.

Leaders that make ethically sound decisions by considering the interests of various stakeholders groups see increases in micro-level organizational performance outcomes. Signaling theory (Karasek & Bryant, 2012; Spence, 1973, 1974) suggests that markets, such as the stock market, are influenced by the explicit and implicit information made available by sellers (e.g., organizations). When leaders make ethically sound decisions, they implicitly signal stakeholders and non-stakeholders of their organization's concern for stakeholder groups. Marcus & Goodman (1991) observed

that organizational decisions made during times of crisis, including ethical dilemmas, signaled either accommodative or defensive stances. They concluded accommodative stances (e.g., those acknowledging the concerns of stakeholders) are likely the best strategic response to preserve shareholder value across multiple types of crisis situations. When leaders consistently make ethically sound decisions, they signal the organizations accommodative policy standpoint and create value in the eyes of stakeholders. Additionally, micro-level performance gains resulting from leader ethical decision making signal organizational health and general performance to investors that influence macro-level performance outcomes, specifically, market value. Based on stakeholder theory and signaling theory, the aggregate effect of leader ethical decisions over time such as organizational ethicality, promotes macro-level outcomes by influencing financial performance as measured by shareholder value - the classic business case. The following hypothesis is suggested:

H3: Organizational ethicality will positively predict shareholder value above and beyond the general influence of market trends.

Method

Business leaders and their corresponding organizations were selected for this study based on availability of data for both the leader and the organization. Cognitive bias and compensatory strategies were operationalized based on the definitions provided in Table 1 and Table 2. Organizational ethicality was operationalized as the aggregate number of ethical and unethical decisions reported for the organization by KLD

Research & Analytics Inc. Organizational performance was operationalized as average residual market return.

Historiometric Method

This study utilized historiometric methods for evaluating the cognitive biases and compensatory strategies used by organizational leaders when engaging in ethical decision making. Historiometric analyses are a method of quantifying human behavior based on accounts presented in historical documents such as biographies of well-known individuals, or in this case, organizational leaders (Simonton, 1999). Historiometric analysis is useful for measuring behavior information when direct access to the individuals of interest is not available and also allows for assessment of multiple individual behaviors in a real-word context when direct observation was not conducted and interview methods are either not possible or lack the requisite objectivity (Simonton, 1990).

Biography Sampling

Biographical samples were obtained following procedures recommended by Simonton (1999) with one exception. While autobiographical sources are not typically included in historiometric analyses (Simonton, 1990), they were included in this study in order to increase availability of sample data. A search was conducted for available biographies using keywords “business” and “biography” using both the University of Oklahoma Library System as well as the Oklahoma Public Library System. Finally, to exclude any potential geographical bias in availability of biographies at those locations,

the same keywords were searched using Amazon.com to identify any additional materials in print.

From these sources, only individuals that served in a leadership position (such as Chief Executive Officer or Chairman of the Board of Directors) within an organization were included. A second inclusion criterion was included to limit the search to individuals that served in leadership positions between the years of 1990 and 2005. The conceptualization of what constitutes an ethical versus and unethical decision is subject to change over time as the values and norms of society at large change (Inglehart, 1997). As such, the inclusion of historical data was limited to a period in which principles of ethics would closely resemble those of present day. In total, 100 biographies and autobiographies of organizational leaders discussing organizational decision making events between 1990 and 2005 were identified using these criteria.

Sample

Of the 100 organizational leaders for which historical data was available, the study required that organizational level performance data also be available. Specifically, stock market trading information was required of each organization. The 100 organizational leaders were then limited to a final set of 65 containing only leaders that represented organizations that were publically traded on the U.S. Stock Exchange. For a complete list of leader biographies and autobiographies included in the study, see Appendix.

Within this sample, 61 leaders were male and four female. Leader age, which was considered based on the time of their leadership role within the associated

organization, ranged from 19 to 64 years (M = 44.25, SD = 9.96), and their mean tenure within respective organizations as of 2005 was 13.5 years (SD = 10.19). The leaders represented a variety of different organizations. Fifty-four leaders represented large organizations (i.e., greater than 5,000 employees), three represented medium organizations (i.e., 500 to 5,000 employees, and two represented small organizations (i.e., less than 500 employees). Of these, the lifespan of organizations ranged from 7 to 175 years (M = 68.22, SD = 48.68), with 49 of the 65 organizations still in existence as of 2012. The sample also represented a diverse set of industry sectors including Services (n = 18), Technology (n = 16), Consumer Goods (n = 12), Financial (n = 9), and other (n = 10). For a complete list of leaders, organizations, and descriptive variables see Table 3.

Historiometric Content Analysis

Included biographies and autobiographies were segmented by chapter to include only passages that referred to the time during which the leader made decisions for the associated organization. A group of six trained, expert raters read each set of associated chapters and evaluated the historical content for use of compensatory strategies and the prevalence of cognitive decision making biases by each leader using a benchmark rating scale. The rating scales were developed following the guidelines set forth by Redmond, Mumford, and Teach (1993). Operational definitions, anchors, and a 5-point, Likert-type scale were constructed for each strategy and bias, wherein 1 indicated that the bias or strategy was never used or present and 5 indicated that use of a specific strategy or bias was evident in every decision discussed. Raters were then trained to evaluate the constructs based on operational definitions and the development of a shared mental

model of the meaning of the constructs. Several historical passages were rated independently after the initial training session. After assessing interrater agreement, a second training session was conducted to discuss discrepancies and deviations in mental models. A second series of historical training content was then evaluated and assessed before coding the remaining historical content. See appendix for the rater training materials including a complete list of operational definitions and anchors.

Interrater agreement for rating scales was assessed using the r_{wg} method. R_{wg} is a common method for measuring agreement when multiple raters are assessing the same target (James, Demaree, & Wolf, 1984; James, Demaree, & Wolf, 1993). R_{wg} measures closer to 1.00 suggest that raters generally agree on the quantification assigned to variables and share a unified understanding or mental model of the construct being measured. Interrater agreement for compensatory strategy variables across the six trained raters was as follows: Complexity Evaluation (r_{wg} = .71), Contingency Planning (r_{wg} = .76), Deliberative Action (r_{wg} = .71), Maintaining Objective Focus (r_{wg} = .76), Monitoring Assumptions (r_{wg} = .70), Recognition of Insufficient Information (r_{wg} = .74), Recognizing Boundaries (r_{wg} = .73), Selective Engagement (r_{wg} = .71), Self-Accountability (r_{wg} = .70), Strategy Selection (r_{wg} = .70), Striving for Transparency (r_{wg} = .74), Understanding Guidelines (r_{wg} = .71), and Value/Norm Assessment (r_{wg} = .73).

Interrater agreement for cognitive bias variables was also assessed. Agreement across the six trained raters was as follows: Abdication of Responsibility (r_{wg} = .76), Changing Norms and Standards (r_{wg} = .76), Diffusion of Responsibility (r_{wg} = .75), False Consensus (r_{wg} = .71), Forcing a Decision (r_{wg} = .73), Framing (r_{wg} = .71), Illusion of Control (r_{wg} = .72), Inadequate Role Balancing (r_{wg} = .72), Maintaining the Status

Quo (r_{wg} = .75), Moral Insensitivity (r_{wg} = .74), Naiveté (r_{wg} = .75), Self-Handicapping (r_{wg} = .77), Self-justification (r_{wg} = .74), Undue Autonomy (r_{wg} = .74), Unquestioning Deference to Authority (r_{wg} = .89), Unwarranted Compromise (r_{wg} = .83), and Willful Ignorance (r_{wg} = .71).

KLD Ratings

Data for ethical decisions was gathered from established ratings by KLD Research & Analytics Inc. Kinder, Lydenberg, and Domini (or KLD) measures are an assessment of corporate social responsibility activities and have been used in prior research as a surrogate measure of ethicality (Erwin, 2011; Hillman & Keim, 2001; Stanwick & Stanwick, 2003). KLD began rating firms annually in 1991 although it should be noted that not all publically traded organizations receive a KLD rating every year or at all. Most organizations within this study sample received a KLD rating at least one year during the tenure of the observed leader. KLD rates organizations on seven areas of stakeholder consideration based on the organization's behavior including community relations, corporate governance, diversity, employee relations, environmental performance, human rights, and product characteristics. Because ethical decisions in the business world can involve a multiple and varied stakeholders and because the criteria for ethical concerns is often multifaceted (i.e. teleological, deontological, or justice-based; see, Carroll, 1999; Kaptein, 2009; Godfrey, Hatch, & Hansen, 2010; Reidenbach & Robin, 1990), KLD's evaluation of multiple areas of interest allow for consideration of most of the ethical domain.

For each area, the organization is rated as either having strengths or concerns. The ratings are determined by KLD using information from employee questionnaires, annual reports, 10k reports, quarterly reports, proxy statements, and special reports released by organizations with specific reference to the evaluated dimensions. For purposes of this study, KLD data was used to count the number of organizational events related to each observed area during the tenure of the observed leader. Thus, KLD count data was representative of organizational decisions that impact stakeholders. The number of events leading to either a strength (i.e., ethical decision) or a concern (i.e., unethical decision) was then adjusted for the number of years KLD data was assessed for that organization during the leader's tenure. After adjustment, the number of ethical decisions reported per organization ranged from 0 to 12.5 (M = 3.52, SD = 2.88), and the number of unethical decisions ranged from 0 to 14.33 (M = 2.99, SD = 3.02). A single KLD score for the organization was created by subtracting the number of concerns from the number of strengths across all categories, a practice common in prior research (see, for example, Graves & Waddock, 1994; Griffin & Mahon, 1997; Johnson & Greening, 1999; Ruf, Muralidhar, Brown, Janney, & Paul, 2001; Sharfman, 1996; Waddock & Graves, 1997). KLD scores ranged from -7.17 to 8.50 (M = .53, SD = 3.15), where the valence indicates propensity towards ethical decisions or unethical decisions and the numerical value indicates the relative strength of ethicality.

Finally, the single KLD scores for the sample were standardized to establish z-scores based on the variance of the sample. Organizations with a KLD rating of .5 standard deviations and above were labeled as ethical (n = 16) while organizations with a KLD score of .5 standard deviations and below were considered unethical (n = 15).

Organizations in between were considered grey (i.e., a mix of ethical and unethical; n = 24). Separating the organizations into categories allowed for average comparisons of organizations as opposed to one-to-one comparisons of individual organizations. The complex nature of ethical environments and dynamic interplays between organizations and environments suggests that individual comparisons of organizations is less informative based on the research questions at hand.

Organizational Performance Measure

Organizational performance can be assessed in many ways. For this study, market share value was thought to be the most relevant measure of performance as it inherently captures the impact of ethical decisions on various stakeholder groups vis-à-vis stakeholder willingness to invest capital. Organizational performance was measured using daily stock market returns. Returns are the percent change in trading price from one time period to another and are an effective way of assessing actual performance as they are unaffected by stock splits that may otherwise skew share price data. Historical market data is publically available and obtained for this study through from *Yahoo Finance*. Data was collected for each organization in the sample for the time period during which the sample leader was responsible for decision making in the organization. In addition, the *S&P 500 Index* value was collected for the same time. The *S&P 500 Index* is considered representative of the market as whole. In other words, the *S&P 500 Index* is representative of the population of organizations publically traded.

Returns on the *S&P 500 Index* were calculated along with returns for each organization every day during the leader's tenure. The two sets of returns were then

plotted against one another in order to generate a regression line. The equation of this regression, $y = \beta x + a$, represents the Market Model where y is the predicted return of an organization, β is the degree of elasticity of a given organization with respect to fluctuation in the market, x is the observed return of the index (in this case the market as a whole), and a is a constant. The Market Model theoretically predicts the expected return for any given organization based on market factors and influences (i.e., the Market Model accounts for systematic risk associated with the market, an organization's individual response to systematic risk factors, and the return expected on investment in a zero-risk settings). A Market Model equation was calculated for each organization in the study using the leader's tenure as the time period for data. Next, a predicted return was calculated each day for each organization based on the respective Market Model equation. Predicted returns were then subtracted from observed or actual returns in order to determine a residual return value and averaged over the leader's tenure. This average residual value represents the average return for the organization beyond the influence of the market and its associated factors. The average residual return during the leader's tenure was used to measure organizational performance.

Control Variables

Several control variables thought to potentially influence relationships between the study's main variables based on previous work examining ethical decision making (Ford & Richardson, 1994; Low et al., 2000; O'Fallon, & Butterfield, 2005) were included in this study. These variables were identified a priori. Control variables were primarily demographic in nature, and included elements of both leader demographics and organizational demographics. Leader-specific control variables included the gender

of the leader, the age of the leader when assuming their leadership position within the organization, and the tenure of the organizational leader. Tenure was measured as of 2005, and age was determined based on the start of the tenured period. Organizational-level control variables included the size of the organization based on the number of employees, length of time the organization existed as of 2012, industry sector, and whether or not they were still in existence as of 2012.

Analyses

First, a series of analyses were performed in order to determine the influence of control variables on key outcome variables, specifically number of unethical decisions, number of ethical decisions, overall ethicality, and organizational performance. Control variables that were statistically significant at the .05 level were retained for future analyses. Control variables that were not significantly related to outcome variables were excluded from further analyses.

In order to assess the impact of leader decision strategies and biases, a series of multiple regression analyses were performed. First, individual biases and compensatory strategies were grouped based on the component process of sensemaking (i.e., problem identification, information gathering, and information integration) following rational keying procedures. Next, a component score was generated for each process. Unethical Decisions were regressed on cognitive bias and compensatory strategy component scores. Ethical Decisions were regressed on cognitive bias and compensatory strategy component scores. Ethicality was regressed on cognitive bias and compensatory strategy component scores.

To evaluate the impact of leader decisions on organizational performance, multiple regressions were performed on biases and strategies upon average residual return and an ANOVA was performed to assess differences in average organizational performance between ethicality groups.

Results

Cognitive biases were keyed as follows with corresponding interclass correlation coefficients: Abdication of Responsibility, Moral Insensitivity, Self-handicapping, False Consensus, Maintaining the Status Quo, Unquestioning Deference to Authority, and Willful Ignorance made up Problem Recognition Biases ($\alpha = .71$); Diffusion of Responsibility, Inadequate Role Balancing, Framing, Naiveté, Undue Autonomy, and Unwarranted Compromise made up Information Gathering Biases ($\alpha = .67$); and Changing Norms & Standards, Forcing a Decision, Illusion of Control, and Self-justification made up Information Integration Biases ($\alpha = .65$). Component scores were generated for Problem Recognition Biases ($M = 1.55$, $SD = 0.30$), Problem Gathering Biases ($M = 1.58$, $SD = 0.27$), and Problem Integration Biases ($M = 1.72$, $SD = 0.37$). Compensatory strategies were keyed as follows with corresponding interclass correlation coefficients: Deliberative Action, Recognizing Boundaries, Selective Engagement, and Understanding Guidelines made up Problem Recognition Strategies ($\alpha = .72$); Maintaining Objective Focus, Monitoring Assumptions, Recognition of Insufficient Information, and Value/Norm Assessment made up Information Gathering Strategies ($\alpha = .86$); and Complexity Evaluation, Contingency Planning, Self-accountability, Strategy Selection, and Striving for Transparency made up Information Integration Strategies ($\alpha = .84$). Component scores were generated for Problem

Recognition Strategies (M = 2.24, SD = 0.47), Information Gathering Strategies (M = 2.00, SD = 0.55), and Information Integration Strategies (M = 2.27, SD = 0.51)

Descriptive statistics and bivariate correlations for cognitive biases and outcome variables (Ethical Decisions, Unethical Decisions, Ethicality, and Organizational Performance) can be found in Table 4. Ethical Decisions was significantly related to Information Gathering Biases (r = -.36). Ethicality was significantly related to Problem Recognition Biases (r = -.40) and Information Integration Biases (r = -.27).

Descriptive statistics and bivariate correlations for compensatory strategies and key outcome variables can be found in Table 5. Ethical Decisions was significantly related to Information Gathering Strategies (r = 29). Ethicality was significantly related to Information Gathering Strategies (r = .41) and Information Integration Strategies (r = .35).

Covariate Analyses

Regression analysis of leader-specific control variables indicated Gender significantly predicted Ethical Decisions, β = .28, $t(53) = 2.09$, p = .04, and Ethicality, β = .35, $t(53) = 2.68$, p = .01. Gender did not significantly predict Organizational Performance. Leader Age significantly predicted Unethical Decisions, β = .34, $t(52) = 2.77$, p = .01. Tenure of the leader was not a significant predictor of key outcome variables. Regression analyses of organization-level control variables revealed Length of Time in Existence significantly predicted Ethical Decisions, β = .03, $t(52) = 3.43$, $p < .01$, and Unethical Decisions, β = .03, $t(52) = 3.48$, $p < .01$. Whether or not the organization was still in existence as of 2012 was not a significant predictor of any

outcome variables. Organization Size and Industry Sector were examined using ANOVAs due to the categorical nature of the variables. Organization Size was not found to significantly predict key outcome variables. Industry Sector was significantly related to Unethical Decisions, $F(4, 45) = 4.36$, $p = .01$, but not Ethical Decisions or Ethicality. Although statistically significant, the Gender variable was not meaningful due to large differences in the sample's demographic composition (61 male leaders and 4 female leaders). Gender was therefore excluded from further consideration. Length of Time in Existence was retained as a covariate in analyzing Ethical Decisions. Leader Age, Length of Time in Existence, and Industry Sector were retained as a covariate measures for analyses involving Unethical Decisions. All other covariate measures were not considered further.

Cognitive Bias and Compensatory Strategy Analyses

Hierarchical, step-wise regression models were constructed for the number of Unethical Decisions regressed on cognitive biases while controlling for Length of Time in Existence, Industry Sector, and Leader Age. Industry Sector was recoded into dummy variables in order to include the categorical data in the regression models. Length of Time in Existence, Industry Sector, and Leader Age were entered in Step 1 of the regression model. At Step 2, cognitive bias variables were entered in step-wise fashion. Significant results were not observed for cognitive biases predicting Unethical Decisions.

Ethical Decisions was regressed on cognitive biases while controlling for Length of Time in Existence. Length of Time was enter at Step 1. At Step 2, Problem

Recognition Biases, Information Gathering Biases, and Information Integration Biases were entered in step-wise fashion. Problem Recognition Biases and Problem Integration Biases were not found to be significant predictors at Step 2. Information Gathering Biases was retained in the model. A summary of the regression model for Ethical Decisions on cognitive biases can be found in Table 6. Information Gathering Biases significantly predicted Ethical Decisions, β = -.32, $t(51) = 2.66$, $p = .01$, and accounted for a significant amount of the observed variance in Ethical Decisions, $R^2 = .28$, adjusted $R^2 = .26$, $F(1, 51) = 7.07$, $p = .01$.

Unethical Decisions was regressed on compensatory strategies while controlling for Length of Time in Existence, Industry Sector, and Leader Age. No significant results were observed in relation to Unethical Decisions and compensatory strategies.

The number of Ethical Decisions made by the organizational leader was regressed on compensatory strategies while controlling for Length of Time in Existence in a hierarchical, step-wise model. At Step 1, Length of Time in Existence was entered. At Step 2, Problem Recognition Strategies, Information Gathering Strategies, and Information Integration Strategies were entered in a step-wise fashion. Problem Recognition Strategies and Information Gathering Strategies were not significant at Step 2 and therefore removed from the model. A complete summary of the regression model for Ethical Decisions on compensatory strategies can be found in Table 7. Information Integration Strategies significantly predicted Ethical Decisions, $\beta = .37$, $t(51) = 5.78$, $p \leq .001$, and accounted for a significant amount of the observed variance in Ethical Decisions, $R^2 = .32$, adjusted $R^2 = .30$, $F(1, 51) = 10.27$, $p \leq .01$.

Step-wise regression analyses were performed on Ethicality with cognitive bias variables. Information Gathering Biases and Information Integration Biases were not found to be significant predictors and were removed from the multiple regression model. Problem Recognition Biases significantly predicted Ethicality, β = -.40, $t(53)$ = 3.22, $p \leq .01$, and accounted for a significant portion of variance, R^2 = .16, $F(1, 53)$ = 10.36, $p \leq .01$. Step-wise regressions were also performed on Ethicality with compensatory strategy variables. Problem Recognition Strategies and Information Interpretation Strategies were not found to be significant and were removed from the model. Information Gathering Strategies significantly predicted Ethicality, β = .40, $t(53)$ = 8.45, $p \leq .01$, and accounted for a significant portion of variance, R^2 = .17, $F(1, 53)$ = 10.50, $p \leq .01$.

Organizational Performance Analysis

Pair-wise multiple regressions were performed on Organizational Performance with cognitive biases and compensatory strategies. No significant results were found.

Ethicality scores for the sample ranged from -7.17 to 8.50. The mean Ethicality was .53 (SD = 3.15). After converting raw Ethicality scores to z-scores for the sample, organizations were grouped into three categories; unethical (n = 15), grey (n = 24), and ethical (n = 16). Organizations with z-scores less than -.5 made up the unethical group (i.e., organizations that made unethical decisions more often than ethical), greater than .5 represented the ethical group (i.e., made ethical decisions more often than unethical), and organizations in between the two were the grey group, meaning they made both ethical and unethical decisions. Average residual market return was used as the measure

of Organizational Performance (M = .01; SD = .07). A one-way ANOVA was used to explore the relationship between Ethicality group membership and Organizational Performance. Organizations that were missing performance data were excluded from the analysis. No significant relationship was found between Ethicality group and Organizational Performance, F (2, 45) = 1.35, p = .27.

Limitations

Prior to discussing results of this study, its limitations should be noted as any discussion or interpretation of results should occur within the context of those limitations. First, there are limitations resulting from the historiometric analysis. Although Simonton (1990) recommended using biographical sources, this study examined both biographical and autobiographical sources in order to capture the majority of available material on modern organizations and their leaders. The central tenet of this study, Weick's sensemaking (1995), details a process of receiving information and then defining the situation based on that information in relation to prior information. Weick (1995) refers to this as retrospective sensemaking and refers to the experiences used to organize new information as narratives. Assessing leaders' decision making in this study involved evaluating information pertaining to the narratives constructed by the leader. In that regard, autobiographical information may have been more appropriate for informing the research questions, in spite of Simonton's (1990) reservations about autobiographical accounts. Additionally, neither leaders nor their biographers had any a priori information regarding the specific biases or strategies that would be assessed. There is no reason to suspect either group would have skewed their accounts with regard to factors of interest in this study or report anything beyond their

perceived reality. It is that perceived reality that is of interest during sensemaking (Weick, 1995). The expert raters assessing narratives where trained to make inferences regarding sensemaking processes based on the narrative accounts described. It is more likely that cognitive bias by raters would impact the data when evaluating narratives, however the use of multiple expert raters in this study limits that from occurring. The decision to examine both biographical and autobiographical narratives in spite of Simonton's (1990) recommendations was made based on trading off internal validity concerns for external validity.

Another limitation of this study concerns sampling. Not every organizational leader during the inclusion period either published an autobiography or had a biography published about them, so in this way, the sample obtained is a convenience sample. One should be cautious when attempting to generalize results to the entire population of organizations and leaders from a limited sample. In order to address this limitation, efforts were made to obtain source material from a variety of different venues in an attempt to analyze all material available during the time period. However there may be unexamined factors that differentially predict which leaders had biographical source material printed and which did not. On a similar note, this study is limited to a fairly stringent time period (1990-2005) in an effort to examine ethical decisions through the lens of appropriately conventional ethical norms. Although attempts were made to maximize sample size, availability of data (based on the number of published biographies/autobiographies) still limited the sample (n = 65). This limitation should be kept in mind when deciding to generalize results from this sample to a broader group.

The nature of KLD scores should also be considered. Although used in multiple studies as a surrogate measure for ethicality (Erwin, 2011; Hillman & Keim, 2001; Stanwick & Stanwick, 2003), KLD ratings are most often considered to be a measure of corporate social responsibility (Rowley & Berman, 2000). Additionally, KLD scores are based on the number of ethical and unethical decisions made by organizations. These decisions must be reported in some fashion in order for KLD to account for them. While the organization does collect information from a variety of sources, some organizational decisions may not have been publicized or otherwise accounted for. In term of this study, unpublicized decisions would not be of concern to market value as the market is driven by the shareholders. However, unpublicized decisions would be of interest when analyzing compensatory strategies and cognitive biases of leaders.

This study assumes the decisions reported in the KLD database were the result of decisions made by organizational leaders. It is possible the some of the strengths or concerns reported by KLD resulted from decisions made by other members of the organization. However, the sensemaking process can be viewed as either individual or collective, however (Weber & Glynn, 2006; Weick, 1995, 1998; Weick et al., 2005). Within organizations, collective sensemaking is most likely employed as managers and leaders actively solicit the input of other members when making decisions on behalf of the entire organization. Collective sensemaking within organizations is influenced by all individuals that contribute to the social narrative. Leaders, in particular, are likely to have a strong impact on the collective narrative based on their visionary influence, formal authority, and input into policy generation. As a result, the sensemaking

frameworks of leaders are likely to become embedded in the organization narrative and internalized by other members through institutionalization (Weber & Glynn, 2006).

Finally, certain assumptions are associated with the Market Model that should be considered in this study. First, the Market Model is a theory prescribed to by some, but not all, economists. The underlying assumption of the Market Model is that the market itself should explain all variability in market value. A second assumption is that a market index, in this case, the *S&P 500 Index*, is representative of the entire population of market values. While this may be a readily accepted assumption, it is an assumption nonetheless as clearly not every publically traded organizations is listed on the *S&P 500 Index.* Accepting these two assumptions allows the use of the Market Model equation to predict any organization's market performance based on the relative performance of the market. Any variability beyond in actual value beyond what the market predicts is then attributed to organization-level factors that are above and beyond the influence of the market itself. These assumptions must be accepted in interpreting the results of this study and therefore, to the extent one accepts or does not accept them, they must be considered a limitation of the study.

Discussion

With the above limitations in mind, several conclusions may be drawn from the results of this study regarding leader ethical decision making in the business world. The nature of this study allows for conclusions that inform and extend existing theory, have direct practical implications for business leaders, and suggest future avenues of research.

Theoretical Contributions

At the macro-level, it was hypothesized (H3) that leader ethical decisions would influence financial performance, solidifying the business case for ethics. While the data did not support this hypothesis, several considerations should be noted. First, according to economists, the Market Model captures all variation in performance associated with market factors when valuing an organization. Any impact of ethical decisions by leaders can be theoretically subsumed by the market and thus explained by the prediction equation for any given organization. It is plausible that in this study, any financial changes resulting from leader decisions were already accounted for in the model and therefore little residual variability existed.

Market share price has a reciprocal relationship with financial performance and the extent to which investors are willing to invest. Share price increases when performance signals investors to invest (Spence, 1973, 1974). At the same time, increases in the number of investors drives financial performance. In terms of cause and effect, it is difficult to assert whether performance is the cause or effect of share price, suggesting share value might not be the best measurement of organizational performance. Additionally, investors assume some of the organization's financial risk when they chose to invest, and expect to be rewarded for that risk. Once invested in a company, shareholders will prefer efficiency gains to effectiveness gains for value creation as they generate profit. Other stakeholder groups outside of the shareholders are likely to be more interested in effectiveness gains in term of value creation. Thus, financial performance indicators are more closely associated with shareholder perspectives and less closely related to stakeholder perspectives. While ethical decision

making may not generate profit, it likely creates value for stakeholders in other ways and should not be overlooked. Organizations may benefit from exploring the indirect impact of ethical decision making on profit by examining influences on consumers and their reputation.

In terms of theoretical contribution, while the data did not support advancing the instrumental discussion of stakeholder theory as hypothesized a priori, meaningful contributions and insights can still be drawn. From a theoretical perspective, H5 explored the nature of the interplay between stakeholder theory (Freeman, 1984) and signaling theory (Spence, 1973, 1974), suggesting investors would be informed vis-à-vis signaling of organization performance, health, and well-being and therefore willing to invest. It was believed that during times of ethical crises within organizations, leader decisions that ameliorated the crisis would encourage current investors to maintain investments and encourage potential investors to contribute. However, it is possible that because stakeholder management (Freeman, 1984) breaks away from gauging performance in terms of efficiencies and profit alone, the financial community (current and potential investors) pays little intention to signals that do not immediately influence financial profit.

The question of why one might not observe changes in market value beyond market fluctuation should also be considered. If an organization outperforms market predictions (i.e., share value increases beyond market prediction) it does so because there is greater demand for its shares than there is demand in the market. Greater demand increases the price an investor is willing to pay for a share (i.e., the value of a share). Investors are willing to give an organization money when they anticipate getting

something in return, such as profit from the organization. Share value decreases when investors take their money back, or sell their share, because they no longer anticipate a return. This increases the supply of shares on the market, decreases demand, and lowers the share price. With that simplistic explanation in mind, share price would remain unchanged due to two distinct circumstances. First, investments remain the same; investors neither purchase nor sell shares. In this case, supply and demand remain constant, as does share price. Alternatively, investors purchase shares and sell shares in equal quantities. In this case, supply and demand again remain unchanged because fluctuations on either side offset each other, and share price will remain constant. When ethical events occur, no observed changes in share price beyond those associated with market fluctuations suggests either no response by investors, or equal levels of positive and negative response. When there is no response investors have either missed or were apathetic to signals. Alternatively, some investors may have viewed leader ethical decisions regarding stakeholder (Freeman, 1984) groups as signals (Spence, 1974, 1975) of positive performance while other investors viewed the same signals as signs of negative performance. Such individual differences in perception would produce offsetting behaviors on average, and yield in aggregate a null effect on supply, demand, and share price. Within a sizable population such as the population of investors, having roughly equal numbers of offsetting behaviors is likely given concepts such as central limit theorem and Sir Ronald Fisher's ideals of randomization.

Inherent to signaling theory (Spence, 1974, 1975) is the concept of information asymmetry, wherein investors are not immediately privy to all information regarding organizations prior to deciding on investment. Another plausible alternative is due to

the rapid proliferation of information in today's world, there is less asymmetry of information and investors have become less reliant on signals. In that scenario, investors will turn to actual performance measures, such as bottom-line financial performance, when making investment decisions. In this case, the proposed link between stakeholder theory (Freeman, 1984) and signaling theory (Spence, 1974, 1975) dissolves and micro-level outcomes associated with ethical behavior (Ashford & Gibbs, 1990; Brown & Treviño, 2006; Brown, Treviño, & Harrison, 2005) will not drive macro-level outcomes like share price in the manner hypothesized.

Turning to the micro-level, results of this study do suggest differences in decision making processes yield different outcomes in the face of ethical dilemmas. Stakeholder management perspectives (Freeman, 1984) appear to be closely related to sensemaking (Weick, 1995) in that considering ethical dilemmas from the sensemaking perspective will promote effective mental model construction that sufficiently incorporates complexity and considers multiple stakeholders. Based on decision outcomes evaluated in this study, sensemaking processes are improved by adopting a stakeholder perspective. While H3 was not confirmed to extend stakeholder theory (Freeman, 1984) from an instrumental perspective, the study does support stakeholder theory from a normative perspective consistent with earlier suggestions by Donaldson and Preston (1995).

At the core of this study is Weick's (1995) sensemaking theory. Sensemaking was initially proposed as a way of describing how individuals within organizations interpret external stimuli and subsequently behave based on those interpretations. As a logical extension, Weick (1995; 1998; 2001) elaborates on the role of the sensemaking

process in applied decision making, specifically during times of crisis and in managerial settings. Sonenshein (2007) observed sensemaking to be useful theory for explaining decision making when faced with ethical dilemmas, likening them to crisis situations. Work by Mumford and colleagues (Brock et al., 2008; Caughron et al., 2011; Kligyte et al., 2008; Mumford et al., 2008; Mumford et al., 2009a) empirically supported the use of sensemaking as an applicable theory for analyzing ethical decision making among academic researchers. Findings from this study add generalizability to this stream of research by supporting sensemaking as a method of analyzing ethical decisions for business leaders. Further, sensemaking theory has been suggested (Weick, 2001; Weick et al., 2005) as a framework for improving decision making when "sensemakers" carefully attend to skillfully navigating the nuances of the process. In ethical decision making, this was demonstrated by identifying a series of strategies associated with sensemaking processes that may be used to improve decision outcomes, and a series of cognitive biases that interfered with sensemaking processes thereby reducing the effectiveness of decision making outcomes (Brock et al., 2008; Caughron et al., 2011; Kligyte et al., 2008; Mumford et al., 2008; Mumford et al., 2009a). Results from this study build on prior work by specifically examining decision-making processes by business leaders in order to identify useful strategies for improving ethical decision making and biases that detract from ethical decision outcomes within the business domain. In doing so, it extends sensemaking theory and identifies factors involved in improving decision making that may enhance, in the language of Weick (2001), "wisdom" in today's organizations.

Practical Implications

The remainder of this study's findings adds to the growing body of contextual research on business ethics clarifying what leaders should do to improve ethical decision making (Kahn, 1990; O'Fallon & Butterfield, 2005). Specifically, conclusions drawn from this work can be used to inform business leaders on what they "should" do (Weaver & Treviño, 1994) when engaging in ethical decision making by examining what they "actually" do (Tenbrunsel & Smith-Crowe, 2008) and those effects.

$H1_a$ and $H1_b$ made predictions regarding the effect of cognitive biases on the number of ethical decisions and the number of unethical decisions made by organizational leaders. Specifically, $H1_a$ predicted cognitive biases increase the number of unethical decisions by leaders, and $H1_b$ predicted cognitive bias would decrease the number of ethical decisions. While only partially supported in that not all biases had significant effects, evidence was found to support $H1_b$. A significant, negative effect was found for Information Gathering Biases on the number of ethical decisions made by leaders. When confronted with ethical dilemmas, leaders likely know they have to act. Thus Problem Recognition biases are not likely to play a role and sensemaking is engaged. On a similar note, the levity of the problem at hand is likely to ensure that leaders are not subject to biases that influence Information Integration and they will actively seek to reach an ethical decision as opposed to exacerbating the dilemma. It appears that leader sensemaking gets derailed when gathering and interpreting information.

Diffusion of Responsibility, Framing, Inadequate Role Balancing, Naiveté, Undue Autonomy, and Unwarranted Compromise are included in Information Gathering Biases. In order to prevent bias from interfering with sensemaking and reducing ethical decisions, leaders should first be weary of framing issues and not underestimate the scope of the ethical dilemma. When gathering information, they should be careful about who they are involving in the process and why. For example, seeking input from others simply to avoid blame likely results in bad information from bad sources. Leaders who fail to consider the limitations of their own knowledge and experience are also likely to fail to ask for help from others when needed and to inadequately consider the scope of ethical dilemmas as they are limited to their own perspective. On a similar note, leaders that feel they are responsible for taking on all problems single-handedly are likely to fall victim to the same shortcomings during information gathering. In terms of information interpretation, leaders should be particularly concerned with achieving balance between various roles. Being overly attentive to personal roles and responsibilities, for example, is likely to cause the leader to interpret information through personal experiences and value systems limiting their perspective. Leader who compromise themselves to make others happy are also limiting their perspective and likely addressing peripheral issues rather than root causes.

$H2_a$ and $H2_b$ were concerned with compensatory strategy use during sensemaking. Specifically, $H3_a$ predicted compensatory strategy use would increase the number of good decisions made by leaders, and $H3_b$ predicted compensatory strategies would decrease the number of bad decisions. Results from the study partially supported $H3_a$ in that some compensatory strategies had the predicted outcome effects.

Information Integration Strategies increased the number of ethical decisions by leaders. Combining information into an appropriate mental model is yields improved decision-making outcomes. Leader sensemaking for ethical decisions is enhanced by Complexity Evaluation, Contingency Planning, Self-accountability, Striving for Transparency, and Strategy Selection.

Leader should begin by ensuring the mental models they construct when faced with ethical dilemmas are sufficiently complex. Given the dynamic nature of ethical dilemmas, and the level of ambiguity and uncertainty associated with them, more complex mental models are necessary to successfully address the problem. Leader should also maintain a high degree of personal accountability for the problems that they are addressing. Personal accountability is likely to motivate the leader to desire the best alternative, reinforcing the building of complex models and continued sensemaking in order to arrive at the best alternative. Careful selection of strategies will also help ensure the best alternative is reached. However, leaders also must be continually aware that even when attempting to choose the best alternative, the likelihood of success is uncertain. During ethical crisis, decisions that did not yield anticipated outcomes must be corrected swiftly before the damage worsens. Having multiple contingency plans allows leaders to react quickly when selected alternatives do not yield desired results. Along similar lines, resolution of ethical dilemmas will likely have different effects on different stakeholder groups. Some stakeholders may be negatively impacted even when the best alternatives are selected. Leaders should therefore by transparent in their selection of alternatives. Negative outcomes can be accepted if stakeholders can understand that attempts were made to minimize them and no other options were viable.

Ethical decisions are reduced when leaders have poor or insufficient information and do not allow for broad interpretations of the information provided. Ethical decisions are increased when are able to successfully integrate the information they have gathered into a complex mental model that allows them to generate and evaluate solution alternatives. In terms of sensemaking, Problem Recognition activates sensemaking. Once engage, leaders should be trained to minimize biases as they interfere with Information Gathering, and interventions should be designed that give leaders tools to enhance Information Integration in order to make ethical decisions.

Because sensemaking is a retrospective process that Weick (1995) suggests both informs and creates reality, it was beneficial to examine leader sensemaking of ethical dilemmas from an aggregate perspective over time as well by evaluating multiple decision outcomes. The aggregate evaluation captures the dynamic interplay between various decisions made by the leader. R1 and R2 were therefore concerned with the effect of compensatory strategies and cognitive biases on overall ethicality, a measure generated by aggregating individual strengths and weaknesses for each organization. Specifically, R1 predicted cognitive bias would reduce Ethicality and R2 predicted compensatory strategies would increase Ethicality. Results from the study partially supported R1 and R2 in that some, but not all, cognitive biases and compensatory strategies predicted Ethicality.

Problem Recognition Biases had a negative effect on Ethicality. Across multiple decisions, leaders that fail to recognize problems or don't address them for various reasons will not engage in sensemaking. This finding is consistent with Weick's (1995) constructionist perspective. Failing to address an ethical dilemma creates a new

situation, with potentially another ethical dilemma. As a result, over time, cognitive biases that interfere with problem recognition are particularly insidious. Problem Recognition Biases include Abdication of Responsibility, False Consensus, Maintaining the Status Quo, Moral Insensitivity, Self-handicapping, Unquestioning Deference to Authority, and Willful Ignorance.

Willful Ignorance and Moral Insensitivity likely operate by causing the leader not to recognize when prior decisions have generated ethical dilemmas. Failing to see moral implications of a situation will result in a failure to engage in sensemaking, and ignoring negative feedback from prior decisions likely creates new, worse dilemmas. Assuming everyone agrees with your decisions is another way in which leaders may fail to see moral implications of situations that were created by them. Alternatively, biases may sabotage ethicality by suggesting leaders chose not to remedy ethical dilemmas. Over time, leaders that have made decisions that results in ethical dilemmas may become pensive, self-handicap, and shy away from engaging in future decision making efforts. Reinforced fear of the unknown may also result in a preference for risk aversion and maintaining the status quo. Leader may also avoid dealing with ethical dilemmas by "passing the buck" or hiding behind authority. In any case, Problem Recognition Biases reduce Ethicality and attempts should be made to reduce them.

Information Gathering Strategies were positively related to Ethicality. Because information feeds the mental models constructed during integration, quality and quantity of information is critical. In a given situation, Information Integration Strategies may be sufficient to yield ethical outcomes, but as each situation builds upon the other, Information Gathering Strategies become increasingly important in their

influence over subsequent mental models. Information Gathering Strategies include Maintaining Objective Focus, Monitoring Assumptions, Recognition of Insufficient Information, and Value/Norm Assessment.

When gathering and interpreting information over time, leaders will benefit by selectively choosing to include past information that is relevant to current problems. In addition, leaders should attend to acknowledging when more information is required. Relying too heavily on past information, for example, may not sufficiently capture complexity going forward. Further, because information is carried forward, leaders should pay particular attention to the factors that influence its interpretation. For example, personal biases and goals that skew information may not be overly influential in one situation, but can have exponential impacts on future decision making. Likewise, leaders should pay attention to carefully selecting value systems that are relevant to problems at hand. Value systems that were used previously may no longer apply, and current information may be interpreted differently when interpreted through a different system. Over time, leader may become confused as to which value system to apply and when, so paying more attention to Value/Norm Assessment is beneficial.

Together, the pattern of results suggests that the influence of component sensemaking processes may be slightly different when addressing a single ethical dilemma versus navigating the waters of dynamic organization/environment interactions over time. However, in either case, leaders should attempt to minimize cognitive bias and utilize strategies that enhance sensemaking. Biases negatively affect problem recognition and information gathering, in ethical decision making. Compensatory strategies improve information gathering and information integration in ethical decision

making. Regarding sensemaking, succumbing to biases appears to cause leaders to not engage in the process. Once sensemaking is engaged, quantity and quality of information is critical and is affected by both bias and strategy use, similar to other decision making models (e.g., rational decision making). Specific to sensemaking, strategies improve the way leaders integrate information, or develop mental models.

Analyzing real-world decisions directly addresses Sonenshein's (2007) call for sensemaking research involving ethical decisions to capture the complexity of real life. From a practitioner perspective, this study reveals a series of biases that business leaders should avoid when engaging in ethical decision making, and a series of strategies that can help counteract biases and yield better decisions within organizations. Weick et al. (2005) noted that sensemaking can be improved by building specific skillsets, and that improved sensemaking will yield better decisions. The compensatory strategies revealed in this study define the skillsets that should be improved by leaders engaging in sensemaking. Training interventions and executive coaching efforts should be designed to decrease cognitive bias and promote the use of the compensatory strategies outlined in this study in order to improve ethical decision making. It should be noted that compensatory strategies appear to play a larger role in promoting successful ethical decision making in that appear to have the effect of overcoming specific biases as well as improving sensemaking processes. It should also be noted that while useful for improving decision making outcomes, both cognitive bias reduction and compensatory strategy usage do not appear to prevent bad decisions from being made. This may be viewed as a failure to engage in sensemaking. Weick (1995) notes that outcomes of decisions are only realized after the decision is made; we create the

reality based on our behaviors. Organizational behaviors that have not been attended to by leaders engaged in sensemaking likely created ethical dilemmas to begin with, at which point leaders are signaled to engage in sensemaking, including bias reduction and compensatory strategy usage, in order to solve the problem.

Future Research

These findings also identify avenues of future research that may make additional contributions to the conversation. First, future research is needed to examine macro-level organization outcomes resulting from ethical decision making, specifically financial performance. Although support was not found linking sensemaking theory (Weick, 1995), stakeholder theory (Freeman, 1984), and signaling theory (Spence, 1974) to share price, plausible explanations existed for lack of these findings. This suggests future research should not assume a lack of connection between ethics and financial performance and instead highlights a need to further explore it. Specifically, this study suggests exploring specific investor behaviors (e.g., not taking action, buying shares, and/or selling shares) during ethical crises and the reasons for that behavior (e.g., missed signals, indifference toward signal, feelings regarding support for stakeholders, etc.). Additionally, further research connecting micro and macro level performance should be explored. Prior research revealed micro-level performance outcomes associated with ethical decisions (Brown & Treviño, 2006; Brown et al., 2005). The current study reveals multiple ways to improve ethical decisions and by extension improve associated micro-level outcomes. Continued research should tie these micro-level outcomes to macro-level performance in order to fully understand the impact of ethical decision making. In addition to financial indicators such as

shareholder value, subsequent studies should explore macro-level performance indicators or outcomes such as reputation, market share, and culture. Finally, several of the biases and compensatory strategies that were assumed a priori to impact sensemaking did not appear to have effects in this study, which focused on high-level business leaders. Future research should continue to explore all biases and strategies across in different contexts and with different samples of leaders.

Conclusion

At a broad level, this study aimed to bridge the gap between science and practice by joining what had previously been two separate, but related conversations; business ethics and applied behavior ethics. Outcomes from the study achieved that goal. Stemming from a lack of pragmatic utility, conversations surrounding business ethics within the extant literature (see De George, 1990; Gatewood & Carroll, 1991; Velasquez, 1982) were largely left on the academic doorstep. Sensemaking (Weick, 1995) provided a theoretical framework for analyzing ethical decisions (Mumford et al, 2008, Sonenshein, 2007; Thiel et al., 2012) that informed pragmatically focused conversations on behavioral ethics (Jones, 1991; Treviño et al., 2006). Results from this study connect the two by revealing sensemaking to be a useful process for business leaders when making ethical decisions, as it affords the opportunity to improve decision outcomes by reducing the biases and implementing the strategies identified.

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Appendix A: Tables

Table 1

Operational Definitions for Cognitive Biases

Variable Name	Operational Definition
Abdication of Responsibility	Inability to take responsibility for a problem
Changing Norms & Standards	Discounting major changes in professional practice
Diffusion of Responsibility	Discussing problems with others in order to allow blame for a poor decision to be shared so that individuals feel less responsible than if they had made the decision alone
False Consensus	The tendency of individuals to assume that others share their way of thinking and acting in a situation
Forcing a Decision	Making an arbitrary decision in order to have an answer and escape the feeling of doubt and uncertainty
Framing	Inappropriately defining a situation as too narrow or too broad
Illusion of Control	Failing to recognize the dynamic nature of a situation because of an unrealistic assessment of one's ability to control the situation
Inadequate Role Balancing	Unequal recognition of one's roles and corresponding responsibilities
Maintaining the Status Quo	Failing to act, or acting in a specific way, in order to maintain the modus operandi and avoid negative consequences
Moral Insensitivity	Unawareness of how one's actions affect others; specifically, failure to recognize ethical aspects of a situation and/or an inaccurate assessment of the importance of ethical implications of a situation
Naiveté	Failure to recognize the boundaries of one's knowledge and expertise pertaining to a given situation
Self-handicapping	Creating and drawing attention to obstacles in order to protect oneself from potential failure
Self-justification	Reducing dissonance by justifying behaviors and deny negative feedback when facing a situation where behavior is inconsistent with beliefs
Undue Autonomy	Taking on excessive responsibilities beyond one's capabilities
Unquestioning Deference to Authority	Always accepting (without question) the opinions, guidance, and strategies utilized by professional authorities
Unwarranted Compromise	Compromising personal standards in order to avoid conflict
Willful Ignorance	Ignorance to outcome information that would cause one to move backwards, abandon current plans, or face negative consequences

Table 2

Operational Definitions for Compensatory Strategies

Variable Name	Operational Definition
Complexity Evaluation	Examining the different elements (contingencies, causes, restrictions, goals) in a situation and the dynamic relationship between the elements
Contingency Planning	Thinking about multiple alternatives in light of multiple consequences; developing back-up plans
Deliberative Action	Taking planned action when confronted with a problem
Maintaining Objective Focus	Being aware of personal biases, and the impact of personal goals and stereotypes
Monitoring Assumptions	Reducing faulty or irrational assumptions one makes of others or of a situation by drawing upon relevant past experiences or examples rather than relying upon one's beliefs about others or the situation
Recognition of Insufficient Information	Understanding that more information is required to form an opinion or to make a decision
Recognizing Boundaries	Having an accurate assessment about one's expertise in relation to a situation, an awareness of formal role boundaries, and an understanding of the power structure within the organization
Selective Engagement	Considering personal cost or limitations as a means of deciding whether to become involved in a situation
Self-accountability	Abiding by personal ethics, being honest with oneself, and being responsible for what one says and does
Strategy Selection	Reflecting on the dynamics of a situation, one's preference for a strategy, and one's belief that a strategy will be successful and efficient, as a means of choosing a decision making strategy
Striving for Transparency	Emphasizing maintaining transparency in decision making
Understanding Guidelines	Knowledge of the content and when to apply the field and professional guidelines
Value/Norm Assessment	Awareness of the relevant values systems and using them when appropriate

Table 3
Leaders, Organizations, and Covariates

	Leader-specific Variables				Organization-specific Variables			
Leader	Gender	Age[a]	Tenure[b]	Organization	Sector[c]	Size[d]	Time[e]	Exist[f]
Bill Gates	Male	23	22	Microsoft	Tech	L	37	Y
A. G. Lafley	Male	53	5	Proctor & Gamble	Con	L	175	Y
Al Dunlap	Male	59	2	Sunbeam-Oster	Con	L	91	N
Andrea Jung	Female	40	6	Avon Products, Inc.	Con	L	126	Y
Andy Grove	Male	51	11	Intel	Tech	L	44	Y
August Busch III	Male	37	28	Anheuser-Busch	Con	L	646	Y
Bernard Ebbers	Male	54	7	WorldCom	Tech	L	7	N
Bill Howell	Male	45	11	JC Penney	Serv	L	110	Y
C. Paul Johnson	Male			First Colonial Bankshares Corp	Fin			
Carly Fiorina	Female	49	6	Hewlett Packard	Tech	L	73	Y
Dana G. Mead	Male	63	5	Tenneco	Con	L	25	Y
David Neeleman	Male	43	3	Jetblue	Serv	L	14	Y
David Novak	Male	47	5	Yum! Brands, Inc	Serv	L	15	Y
Dennis Kozlowski	Male	46	10	Tyco, Int	Serv	L	52	Y
Dick Fuld	Male	48	14	Lehman Brothers	Fin	L	158	N
Donald Trump	Male	49	10	Trump Hotel and Casino Resorts	Serv			N
Ed Whitacre	Male	47	17	Southwestern Bell (SBC)	Tech	L	130	N
Edward McCracken	Male	40	14	Silicon Graphics	Tech	L	30	Y
Eli Broad	Male	38	28	Sun America (AIG)	Fin		28	N
Eric Schmidt	Male	46	4	Google	Tech	L	14	Y

Note: [a] age of leader at start of tenure; [b] length of time in leadership position with organization as of 2005; [c] Tech = Technology, Con = Consumer Goods, Serv = Services, Fin = Financial; [d] L = > 5,000 employees, M = 500 – 5,000 employees, S = < 500 employees; [e] length of time organization existed as of 2012; [f] Y = organization still exists as of 2012, N = organization no longer exists as of 2012

Table 3: Continued
Leaders, Organizations, and Covariates

	Leader-specific Variables				Organization-specific Variables			
Leader	Gender	Age[a]	Tenure[b]	Organization	Sector[c]	Size[d]	Time[e]	Exist[f]
Gordon Eubanks	Male	40	13	Symantec	Tech	L	30	Y
Hank Greenberg	Male	43	37	AIG	Fin	L	93	Y
Herb Kelleher	Male	50	20	Southwest Airlines	Serv	L	45	Y
Howard Lutnick	Male	43	1	BGC Partners	Fin	M	8	Y
Howard Schultz	Male	34	13	Starbucks	Serv	L	25	Y
J.W. Bill Marriot, Jr.	Male	39	34	Marriot International, Inc	Serv	L	41	Y
Jack Welch	Male	45	23	GE	other	L	120	Y
James Cayne	Male	59	15	Bear Sterns	Fin	L	85	N
Jeff Bezos	Male	30	11	Amazon.com	Serv	L	28	Y
Jeff Immelt	Male	45	5	GE	other	L	120	Y
Jerry Levin	Male		9	AOL Time Warner	Serv	L	27	Y
Jim Osterreicher	Male	53	5	JC Penney	Serv	L	110	Y
John Warnock	Male	45	16	Adobe Systems	Tech	L	30	Y
Ken Olsen	Male	30	36	Digital Equipment Co.	Tech	L	42	N
Kenneth Chenault	Male	50	4	American Express	Fin	L	162	Y
Kenneth Lay	Male	43	17	Enron	other	L	17	N
Larry Ellison	Male	33	28	Oracle	Tech	L	35	Y
Lee Iacocca	Male	54	14	Chrysler Corporation	Con	L	73	N
Lee Raymond	Male	55	12	Exxon Mobil	other	L	142	Y
Marc Andreesen	Male	24	4	Netscape	Tech			
Martha Stewart	Female	55	19	Martha Stewart Living Omnimedia	Serv	S	16	Y
Meg Whitman	Female	42	7	Ebay	Serv	L	17	Y

Note: [a] age of leader at start of tenure; [b] length of time in leadership position with organization as of 2005; [c] Tech = Technology, Con = Consumer Goods, Serv = Services, Fin = Financial; [d] L = > 5,000 employees, M = 500 – 5,000 employees, S = < 500 employees; [e] length of time organization existed as of 2012; [f] Y = organization still exists as of 2012, N = organization no longer exists as of 2012

Table 3: Continued
Leaders, Organizations, and Covariates

	Leader-specific Variables				Organization-specific Variables			
Leader	Gender	Age[a]	Tenure[b]	Organization	Sector[c]	Size[d]	Time[e]	Exist[f]
Michael Dell	Male	19	21	Dell Computer	Tech	L	28	Y
Michael Eisner	Male	42	21	Walt Disney Company	Serv	L	89	Y
Neville Isdell	Male	61	1	The Coca-Cola Company	Con	L	126	Y
Paul Oreffice	Male	51	14	Dow Chemicals	other	L	115	Y
Peter Guber	Male	47	6	Sony Entertainment	Con	L	66	Y
Philip J. Purcell	Male	54	8	Morgan Stanley Dean Witter	Fin	L	77	Y
Randal Tobias	Male	51	6	Eli Lilly and Co.	other	L	136	Y
Richard J. Wagoner	Male	47	5	General Motors	Con	L	104	Y
Richard Murdock	Male	45	6	CellPro	other	S		N
Robert Rodin	Male	39	3	Marshall Industries	Tech		15	N
Roberto Goizueta	Male	49	17	The Coca-Cola Company	Con	L	126	Y
Roger Ailes	Male	56	9	Fox News (21st Century FOX)	Serv	L		Y
Roy Vagelos	Male	56	21	Merck & Co, Inc.	other	L	121	Y
Ryan Blair	Male	28	1	Visalus Sciences (Blyth, Inc)	Con	M	36	Y
Steve Case	Male	33	12	America Online	Tech	L	27	Y
Steve Jobs	Male	42	8	Apple Inc.	Con	L	35	Y
Summer Redstone	Male	64	18	Viacom, Inc.	Serv	L	25	Y
T. Boone Pickens	Male	28	40	Mesa Petroleum	other		43	N
Ted Turner	Male	32	26	Turner Broadcasting	Serv	L	26	N
Thomas Bloch	Male	38	3	H&R Block	Serv	L	66	Y
Tim Power	Male	48	3	Hubbell Incorporated	other	L	124	Y
TJ Rogers	Male	34	23	Cypress Semiconductor	Tech	M	30	Y
Warren Buffet	Male	34	41	Berkshire Hathaway	Fin	L	123	Y

Note: [a] age of leader at start of tenure; [b] length of time in leadership position with organization as of 2005; [c] Tech = Technology, Con = Consumer Goods, Serv = Services, Fin = Financial; [d] L = > 5,000 employees, M = 500 – 5,000 employees, S = < 500 employees; [e] length of time organization existed as of 2012; [f] Y = organization still exists as of 2012, N = organization no longer exists as of 2012

Table 4

Means, Standard Deviations, and Correlations for Key Outcome Variables and Cognitive Biases

Variable	*M*	*SD*	1	2	3	4	5	6	7
1. Ethical Decisions	3.52	2.88	--						
2. Unethical Decisions	2.99	3.02	.43**	--					
3. Ethicality	0.53	3.15	.50**	-.57**	--				
4. Performance[a]	0.01	0.06	.12	.02	.08	--			
5. Problem Recognition Biases	1.55	0.30	-.26	.18	-.40**	-.07	--		
6. Information Gathering Biases	1.58	0.27	-.36**	-.19	-.15	-.11	.64**	--	
7. Information Integration Biases	1.72	0.37	-.14	.15	-.27*	-.12	.76**	.75**	--

Note: [a] Performance is presented as average residual return percentage; * = significant correlation at the .05 level; ** = significant correlation at the .01 level

Table 5

Means, Standard Deviations, and Correlations for Key Outcome Variables and Compensatory Strategies

	Variable	*M*	*SD*	1	2	3	4	5	6	7
1.	Ethical Decisions	3.52	2.88	--						
2.	Unethical Decisions	2.99	3.02	.43**	--					
3.	Ethicality	0.53	3.15	.50**	-.57**	--				
4.	Performance[a]	0.01	0.06	.12	.02	.08	--			
5.	Problem Recognition Strategies	2.24	0.47	.23	-.03	.23	-.03	--		
6.	Information Gathering Strategies	2.00	0.55	.29*	-.15	.41**	-.05	.82**	--	
7.	Information Integration Strategies	2.27	0.51	.32	.06	.35**	.08	.82**	.87**	--

Note: [a] Performance is presented as average residual return percentage; * = significant correlation at the .05 level; ** = significant correlation at the .01 level

Table 6
Regressions for Ethical Decisions on Cognitive Biases

	B	*SE B*	*β*
Step 1			
Constant	1.86	0.62	
Length of Time in Existence	0.03	0.01	.43*
Step 2			
Constant	8.99	2.74	
Length of Time in Existence	0.02	0.01	.37*
Information Gathering Biases	- 4.44	1.67	- .32*

Note: R^2 = .19 for Step 1; ΔR^2 = .10 for Step 2 ($p \leq .01$); * = $p \leq .01$

Table 7
Regressions for Ethical Decisions on Compensatory Strategies

	B	*SE B*	*β*
Step 1			
Constant	1.86	0.62	
Length of Time in Existence	0.03	0.01	.43*
Step 2			
Constant	- 2.97	1.61	
Length of Time in Existence	0.03	0.01	.48*
Information Integration Strategies	2.06	0.65	.37*

Note $R^2 = .19$ for Step 1; $\Delta R^2 = .14$ for Step 2 ($p \leq .01$); * = $p \leq .01$

Appendix B: Rater Training Guide

RATER TRAINING MANUAL

Overview and Purpose:

The decisions made by business leaders are critical to the success of the organizations they represent. In this study we will examine the decision making processes of business leaders by reading select passages from biographical and/or autobiographical material.

Prior research has suggested that leaders engage in a process called sensemaking when attempting to make decisions in complicated and uncertain environments. The business environment is may be characterized as exactly that; complicated and uncertain.

When engaged in sensemaking, prior research has also indicated the process can be hampered by the presence of cognitive biases that impact information and it's interpretation. On the other hand, research has also demonstrated the process can be improved (yielding more desirable outcomes) by using strategies designed to facilitate sensemaking.

The purpose of this manual is to provide detailed instructions for coding the variables of interest. These detailed instructions help to ensure the reliability of the scores obtained from this study. Expert raters will be trained in the use of these coding materials and will utilize this information for reference throughout the coding process.

Specifically, as an expert rater, you will read the assigned passages, paying particular attention to any time when decision making is discussed either explicitly or implicitly.

After reading the passage, you will reflect on the leaders' decisions and decision making process, and code the extent to which they demonstrated specific cognitive biases in their thought patterns, and the extent to which they demonstrated utilization of specific compensatory strategies.

Cognitive Bias Variables

Variable 1: Abdication of Responsibility

Definition: Inability to take responsibility for a problem

Things to look for:

- Assigning others to take responsibility of one's personal obligations
- Not willing to take responsibility of something that has ethical implications, but is not part of your duties
- Blaming someone else for the problem
- Claiming ignorance
- Telling others what decision should be made, but passing responsibility of the choice onto them

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 2: Changing Norms and Standards

Definition: Discounting major changes in professional practice. This bias is more likely to be exhibited by people who have spent considerable time in a field.

Things to look for:

- Making a decision exclusively off of old training
- Unwillingness to learn new practices (perhaps due to difficulty or seeing them as unnecessary)
- Assuming that what worked at the beginning of one's career will work at the end

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 3: Diffusion of Responsibility

Definition: Discussing a problem with others in order to allow blame for a poor decision to be shared, so that individuals feel less personally responsible for the decision than if they had made the decision alone

Things to look for:

- Asking "permission" before making a decision
- Involving others in the decision (for the purpose of reducing accountability)
- Informing others of your plans and/or decision for reassurance
- Believing that if no one has "stopped" you, what you're doing is okay

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 4: False Consensus

Definition: The tendency of individuals to assume that others share their way of thinking about and acting in a situation

Things to look for:

- Assumes that others have the same routines as themselves in making decisions
- Bases one's judgment/decisions under the assumptions that others would have done the same
- Generalize one's own beliefs to others
- Assumes that other's beliefs are the same as one's own beliefs

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 5: Forcing a Decision

Definition: Making an arbitrary decision in order to have an answer and to escape the feeling of doubt and uncertainty

Things to look for:

- Seek a feeling of completion rather than the right solution by making any decision
- Making a decision that does not address the core problem
- Making a decision that only solves a peripheral problem, thus satisfying the need to make a decision at all

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 6: Framing

Definition: Inappropriately defining a situation as too narrow or too broad

Things to look for:

- Trying to solve aspects of the problem that do not address the core issues
- Taking steps in the wrong direction due to a lack of understanding of the situation
- Not considering one's poor decisions as the cause for the problem- and therefore focusing on external causes rather than internal ones
- Thinking that the consequences of the problem are less far reaching than they really are
- Taking into consideration only that information which is readily available
- Extent of information that one considers

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 7: Illusion of Control

Definition: Failing to recognize the dynamic nature of the situation because of an unrealistic assessment of their ability to control the situation

Things to look for:

- Attempting to solve an ambiguous situation oneself when it's clear that other perspectives are needed
- Involving too few people in the decision-making/problem solving process
- Acting too quickly; before the critical aspects of a situation have been identified
- Taking responsibilities away from others after a problem has risen
- Overestimate one's capabilities

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 8: Inadequate Role Balancing

Definition: Unequal recognition of one's roles and corresponding responsibilities

Things to look for:

- Spending majority of one's time on responsibilities pertaining to only a few personal roles
- Showing indifference or disregard to problems or consequences that arise within neglected roles
- Allowing others to make decisions within one's personal roles
- Taking on additional responsibilities within one role to better justify neglecting responsibilities in another role
- Time management (personal and professional)

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 9: Maintaining Status Quo

Definition: Failing to act or acting in a specific way to maintain the modus operandi in order to avoid negative consequences

Things to look for:

- Avoid making specific decisions when risk is involved
- Removing oneself from decision making process pertaining to one's responsibilities
- Disillusioning oneself that no action is needed when in fact it is
- Ignoring already existing problems
- Continuing to act in a manner that discourages change

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 10: Moral Insensitivity

Definition: Unawareness of how one's actions affect others; specifically, failure to recognize ethical aspects of a situation and/or an inaccurate assessment of the importance of ethical implications of a situation

Things to look for:

- Misinterprets or misstates ethical implications of a situation
- Shows disregard towards impact on others
- Shows disregard toward consequences of one's actions
- Ignores the ethical aspects of a situation
- Misattribution of the causes of the situation (Fundamental Attribution Error)

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 11: Naiveté

Definition: Failure to recognize the boundaries of one's knowledge and expertise required in a given situation

Things to look for:

- Making a decision without requisite expertise
- Operating outside one's area of expertise
- Acting or making decisions based solely on one's own understanding of a situation and not consulting others

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 12: Self-handicapping

Definition: Creating and drawing attention to obstacles in order to protect themselves from potential failure

Things to look for:

- Highlighting the difficult nature of the issue at hand
- Creating unnecessary obstacles for fear of potential failure
- When questioned by others regarding the (potential) failure, one would overemphasize the difficulties encountered or other distal causes

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 13: Self-justification

Definition: Reducing dissonance by justifying behaviors and deny negative feedback when facing a situation where behavior is inconsistent with beliefs

Things to look for:

- Focusing on the positive elements of one's actions while leaving out negative information
- Ignoring one's emotions and focusing only on one's rationale in making decisions
- "Coming clean" justifies prior wrong-doing
- Being ethical in one situation justifies unethical behavior in another situation

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 14: Undue Autonomy

Definition: Taking excessive responsibilities beyond one's capabilities

Things to look for:

- Assume that one has the capabilities of taking care of the issue at hand
- Take on too many responsibilities while underestimate one's capabilities and availability
- Failure to decline others' repeated requests for assistance
- Stripping others of responsibilities and tackling them alone
- Delegates responsibilities to a lesser extent than should be expected

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 15: Unquestioning Deference to Authority

Definition: Always accepting, without question, the opinions, guidance, and strategies utilized by professional authorities

Things to look for:

- Believing that an authority figure or mentor's recommendation is always correct
- Making a decision solely based on the recommendation of an authority figure
- Taking a selected course of action because the authority figure told you it was the correct action to take without consideration of possible outcomes

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 16: Unwarranted Compromise

Definition: Compromising personal standards in order to avoid conflict

Things to look for:

- Redoing your own work to satisfy an outside party's interest
- Making unnecessary sacrifices in your own work
- Not standing up for yourself
- Delaying one's work for the benefit of others
- Giving in to other's demands to prevent negative outcomes for the other party

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Variable 17: Willful Ignorance

Definition: Ignorance of outcomes of information that would cause one to move backwards, abandon, current plans, or to face negative consequences

Things to look for:

- Avoiding those would provide negative information pertaining to a situation
- Delivering information only about the positive aspects of the plan
- Minimizing the impact of potential obstacles
- Punishing or becoming angry with those who challenge one's ideas and plans
- Showing disregard to alternative plans or information that are inconsistent with current ideas and plans

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this bias when making decisions	Leader decision making seems to suggest a general presence of this bias, although specific, concrete examples were not present; bias is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific bias in decision making	Leader demonstrates consistent use of specific bias through multiple, explicit examples	Specific bias is prevalent in all observed leader decisions

Compensatory Strategy Variables

Variable 1: Complexity Evaluation

Definition: Examining the different elements (contingencies, causes, restrictions, goals) in a situation and the dynamic relationship between the elements

Things to look for:

- Considering the relevant contingencies at play in a situation
- Determining the causes of a problem
- Understanding the different goals of different parties in a situation
- Thinking about how the different elements in a situation are interrelated, and adjusting behavior accordingly
- Making a reasonable estimation of the problem in its entirety

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this strategy when making decisions	Leader decision making seems to suggest a general presence of this strategy, although specific, concrete examples were not present; strategy is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific strategy in decision making	Leader demonstrates consistent use of specific strategy through multiple, explicit examples	Specific strategy is prevalent in all observed leader decisions

Variable 2: Contingency Planning

Definition: Thinking about multiple alternatives in light of multiple consequences; developing back-up plans

Things to look for:

- Considering the consequences of one's actions
- Coming up with back-up plans, in case one's original plan fails
- Considering the factors that might lead to plan failure
- Considering how to address factors that might lead to plan failure
- Considering different potential ways to address a problem
- Not reactive... actively plan for negative outcomes

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this strategy when making decisions	Leader decision making seems to suggest a general presence of this strategy, although specific, concrete examples were not present; strategy is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific strategy in decision making	Leader demonstrates consistent use of specific strategy through multiple, explicit examples	Specific strategy is prevalent in all observed leader decisions

Variable 3: Deliberative Action

Definition: Taking planned action when confronted with a problem

Things to look for:

- Forecast potential outcomes of different behaviors
- Considering potential actions and evaluating their relative effectiveness before acting
- Taking purposeful action, especially as opposed to inaction
- Avoid overreacting – remains calm and rational for entire interview

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this strategy when making decisions	Leader decision making seems to suggest a general presence of this strategy, although specific, concrete examples were not present; strategy is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific strategy in decision making	Leader demonstrates consistent use of specific strategy through multiple, explicit examples	Specific strategy is prevalent in all observed leader decisions

Variable 4: Maintaining Objective Focus

Definition: Being aware of personal biases, and the impact of personal goals and stereotypes

Things to look for:

- Being mindful about the potential impact of personal biases
- Questioning oneself regarding ones' personal incentives/goals/stereotypes before making an decision
- Agency theory – are your goals different than the organization

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this strategy when making decisions	Leader decision making seems to suggest a general presence of this strategy, although specific, concrete examples were not present; strategy is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific strategy in decision making	Leader demonstrates consistent use of specific strategy through multiple, explicit examples	Specific strategy is prevalent in all observed leader decisions

Variable 5: Monitoring Assumptions

Definition: Reducing the faulty or irrational assumptions one makes of others or of a situation by drawing upon relevant past experiences or examples rather than solely relying upon one's beliefs about others or the situation

Things to look for:

- Challenging one's initial assumptions by willfully thinking of alternatives
- Discussing one's assumptions with others
- Making concrete plans that include forecasts of outcomes when making decisions

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this strategy when making decisions	Leader decision making seems to suggest a general presence of this strategy, although specific, concrete examples were not present; strategy is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific strategy in decision making	Leader demonstrates consistent use of specific strategy through multiple, explicit examples	Specific strategy is prevalent in all observed leader decisions

Variable 6: Recognition of Insufficient Information

Definition: Understanding that more information is required to form an opinion or to make a decision

Things to look for:

- Recognizing the boundaries of one's own knowledge or understanding
- Pointing out deficiencies in information provided

Scale:

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The leader does not, either explicitly or implicitly, demonstrate this strategy when making decisions	Leader decision making seems to suggest a general presence of this strategy, although specific, concrete examples were not present; strategy is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific strategy in decision making	Leader demonstrates consistent use of specific strategy through multiple, explicit examples	Specific strategy is prevalent in all observed leader decisions

Variable 7: Recognizing Boundaries

Definition: Having an accurate assessment about one's expertise in relation to situation at hand, an awareness of formal role boundaries, and an understanding of the power structure of the organization

Things to look for:

- Being accurate in assessing whether one has the capabilities of taking care of the issue at hand
- Asking others with expertise for help when the problem at hand is not one's daily routine
- Understanding the power structure of the organization
- Not getting involved with problems that are outside of one's role boundaries

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this strategy when making decisions	Leader decision making seems to suggest a general presence of this strategy, although specific, concrete examples were not present; strategy is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific strategy in decision making	Leader demonstrates consistent use of specific strategy through multiple, explicit examples	Specific strategy is prevalent in all observed leader decisions

Variable 8: Selective Engagement

Definition: Considering personal costs or one's personal limitations as a means of deciding whether to become involved in a situation

Things to look for:

- Only taking on responsibilities that fall within the bounds of one's expertise
- Seeking the assistance of others or delegating responsibilities when lacking qualification or knowledge to make a decision – getting a consultant
- Considering whether getting involved is appropriate given:
    - Amount of influence
    - Disruption that may occur
    - New problems that may arise

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this strategy when making decisions	Leader decision making seems to suggest a general presence of this strategy, although specific, concrete examples were not present; strategy is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific strategy in decision making	Leader demonstrates consistent use of specific strategy through multiple, explicit examples	Specific strategy is prevalent in all observed leader decisions

Variable 9: Self-accountability

Definition: Abiding by personal ethics, being honest with oneself, and being responsible for what one says and does

Things to look for:

- Using personal beliefs and personal ethics to guide judgment and decision-making
- Acting in accordance with one's personal standards
- Following through with one's decisions
- Gun-sticking

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this strategy when making decisions	Leader decision making seems to suggest a general presence of this strategy, although specific, concrete examples were not present; strategy is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific strategy in decision making	Leader demonstrates consistent use of specific strategy through multiple, explicit examples	Specific strategy is prevalent in all observed leader decisions

Variable 10: Strategy Selection

Definition: Reflecting on the dynamics of a situation, one's preference for a strategy, and one's belief that a strategy will be successful and efficient, as a means of choosing a decision making strategy

Things to look for:

- Actively identifying the key components of a situation in order choose a strategy
- Forecasting the outcomes of a strategy application
- Discussing potential strategy approaches with others
- Drawing upon previous experiences in similar situations
- Considering interactions among potential strategies
- Using a strategic to understand problems

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this strategy when making decisions	Leader decision making seems to suggest a general presence of this strategy, although specific, concrete examples were not present; strategy is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific strategy in decision making	Leader demonstrates consistent use of specific strategy through multiple, explicit examples	Specific strategy is prevalent in all observed leader decisions

Variable 11: Striving for Transparency

Definition: Emphasizing maintaining transparency in decision making

Things to look for:

- Making one's work public domain
- Creating records of behavior and decisions
- Making information available to relevant parties
- SPECIFICALLY discusses trying to be transparent

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this strategy when making decisions	Leader decision making seems to suggest a general presence of this strategy, although specific, concrete examples were not present; strategy is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific strategy in decision making	Leader demonstrates consistent use of specific strategy through multiple, explicit examples	Specific strategy is prevalent in all observed leader decisions

Variable 12: Understanding Guidelines

Definition: Knowledge of the content and when to apply the field and professional guidelines

Things to look for:

- Being knowledgeable about relevant professional guidelines
- Being aware of potential differences of guidelines across fields
- Being mindful about the contingencies of guideline applications
- Doesn't include laws... just norms within professional fields

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this strategy when making decisions	Leader decision making seems to suggest a general presence of this strategy, although specific, concrete examples were not present; strategy is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific strategy in decision making	Leader demonstrates consistent use of specific strategy through multiple, explicit examples	Specific strategy is prevalent in all observed leader decisions

Variable 13: Value/Norm Assessment

Definition: Awareness of the relevant values systems and using them when appropriate

Things to look for:

- Knowledge of society's value systems
- Knowledge of personal value systems
- Understanding how personal values and society values interact
- Understanding when different values are relevant to apply to a situation

Scale:

1 None	2 Low	3 Moderate	4 High	5 Pervasive
The leader does not, either explicitly or implicitly, demonstrate this strategy when making decisions	Leader decision making seems to suggest a general presence of this strategy, although specific, concrete examples were not present; strategy is largely inferred implicitly in processes	Leader demonstrates at least one explicit examples of specific strategy in decision making	Leader demonstrates consistent use of specific strategy through multiple, explicit examples	Specific strategy is prevalent in all observed leader decisions

Appendix C: Biography Reference List

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