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System Justification Theory: Synthesizing and Applying its Theoretical Motivations in Behavioral Accounting Research

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SYSTEM JUSTIFICATION THEORY: SYNTHESIZING AND APPLYING ITS THEORETICAL MOTIVATIONS IN BEHAVIORAL ACCOUNTING RESEARCH

by

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ABSTRACT

This dissertation consists of two studies on System Justification Theory, hereafter SJT. SJT (Jost and Banaji 1994) is a psychology theory stating that individuals justify the status quo even if doing so is against their own or their group's interest (Jost et al. 2004). Comprised of twenty propositions, SJT attempts to explain social and psychological factors driving individuals to perceive the social system as legitimate. These factors also drive individuals to support and maintain the social system. The synthesis and application of this psychological theory in behavioral accounting research is limited, but could provide explanatory evidence on individual decision-making in accounting.

The first study of this dissertation synthesizes SJT's four foundational theories – cognitive dissonance, social identity, social dominance, and belief in a just world – in behavioral accounting research, specifically focusing on two predominantly used theoretical motivations, cognitive dissonance and social identity theory. Behavioral accounting and corporate social responsibility (CSR) have increasingly become more complex as interest in these two areas continues to grow. The first study reviews prior behavioral accounting research that applied cognitive dissonance or social identity theory, and then demonstrates how the application of SJT in behavioral accounting research addresses more complex research questions that cannot be addressed solely from one or a combination of SJT's four foundational theories.

The second study then applies SJT's theoretical motivations in a complex managerial accounting setting by investigating whether maintaining the status quo is a factor explaining managers' decisions to overstate environmental capital expenditure (ECE) projections. This study uses an experimental design to understand whether the presence of an overstatement status quo

and a system threat affects managers' decisions to overstate environmental projections. The results indicate that managers are more likely to overstate ECE projections when the industry exhibits an overstatement status quo. Additionally, this propensity to overstate ECE projections is further exacerbated when managers face a stakeholder threat, suggesting they "dig in their heels" and maintain the status quo. This study extends environmental accounting research by demonstrating that the societal status quo affects managers cognitively and psychologically as they make environmental disclosure decisions. Results also contribute to practice by shedding insight as to why managers make certain environmental disclosure decisions. Specifically, the results show that the social system impacts managers' willingness to use environmental disclosures as a legitimating tool.

Overall these two studies contribute to behavioral accounting research by exploring and applying a psychological theory in a managerial environmental accounting setting. It demonstrates how a commonly used psychology theory that has never been utilized in accounting research could address broad and complex accounting topics.

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GENERAL INTRODUCTION

Behavioral accounting research is increasingly becoming complex, spanning all accounting disciplines including managerial accounting and corporate social responsibility (CSR) research (Chen et al. 2014; Dhaliwal et al. 2011; Kim et al. 2012; Michelon et al. 2018). However, prior behavioral accounting research predominately uses rather narrow and discrete theories. The utilization of these more narrow theories might not be sufficient in addressing emerging complex accounting topics. System justification theory (SJT) is a broad psychology theory stating that individuals support and maintain the current social system even if doing so is against their personal or group interest (Jost and Banaji 1994). Grounded in cognitive dissonance, social identity theory, social dominance, and belief in a just world, SJT can address these emerging complex behavioral accounting research questions and provide a more thorough understanding of behavioral accounting and CSR research that could not be achieved using more narrow theoretical perspectives.

Relatedly, one complex managerial accounting study finds that managers consistently overstate their companies' future environmental spending projections (Patten 2005). Actual spending on these environmental projects is lower than projected in 76.1 percent of the cases examined (Patten 2005). Although this issue has been explored through archival means (also see Chen, Chen, and Patten 2014), behavioral research has yet to explore why managers overstate environmental projections. Given the complexity of this managerial behavioral accounting topic, it is essential to consider broad psychology, sociology, or cognitive theories that could provide new insight and understanding behind managers' decision-making. One such theory, SJT, could provide insight regarding managers' decision-making by exploring the impact of the social system and threats to the social system.

The overall purpose of this dissertation is two-fold: 1. Review SJT's foundational theories and the application of these foundational theories and SJT in prior behavioral accounting research, and 2. Apply SJT's theoretical motivations to a complex managerial and environmental accounting topic. This dissertation is timely as prior behavioral accounting research consistently utilizes similar theoretical motivations to understand broad and complex accounting topics. The first study of this dissertation expands knowledge of prior behavioral accounting research's application of the cognitive and social theories that build SJT. The first study demonstrates how SJT can be address both similar and more complicated accounting research questions that could not occur through one or combination of SJT's foundational theories. The second study of this dissertation applies SJT to address a complex managerial and corporate social responsibility topic. Specifically, SJT is used to understand better why managers continue to overstate future environmental projections. The second study of this dissertation provides insight regarding managers' psychological motivations for overstating environmental projections.

Study One: Motivating and Explaining Behavioral Accounting and Corporate Social Responsibility Research through System Justification Theory

Behavioral accounting research and, specifically, corporate social responsibility (CSR) have increasingly become complex, spanning a wide range of research questions that have never been explored in prior research (Chen et al. 2014; Dhaliwal et al. 2011; Kim et al. 2012; Michelon et al. 2018). Although the complexity of these research questions continues to grow, behavioral accounting research consistently relies on a somewhat predictable, and limited, set of theoretical lenses. The utilization of these consistently-used theoretical perspectives are no longer sufficient because they tend to provide a single, narrow perspective, potentially limiting generalizability to recent, multi-dimensional, and broad accounting areas.

The first study explores System Justification Theory (SJT), grounded in cognitive dissonance (Festinger 1957), social identity theory (Tajfel 1981; Tajfel and Turner 1979), social dominance (Sidanius and Pratto 1999), and belief in a just world (Lerner 1980), and how its application can provide new insight into behavioral accounting and CSR research. This study achieves this objective by reviewing how prior extant behavioral accounting research applies the more narrow set of theoretical perspectives, cognitive dissonance, social identity, social dominance, and belief in a just world, to address complex research questions and whether SJT provides a more thorough understanding of these same research questions and topics.

SJT (Jost and Banaji 1994) states that individuals often make irrational decisions by supporting the social system even if doing so does not align with their personal or group interest. These decisions are guided by individuals' beliefs, attitudes, and thought processes, referred to as ideologies (Jost 1995, 2001). These ideologies arise from a single or a combination of the following foundational theories: cognitive dissonance, social identity, social dominance, and belief in a just world. However, SJT's twenty theoretical propositions can move beyond the four theories discussed. Cognitive dissonance theory argues that individuals' decisions are impacted by whether they feel personally responsible for the outcome of those decisions. Relative to cognitive dissonance, SJT argues that individuals' decisions are impacted by the status quo, regardless if they feel responsible for the outcome of their decisions. These decisions are made unconsciously and individuals at times might not understand the impact of those decisions. Thus, SJT provides a larger and more holistic theoretical perspective that can potentially address emerging complex behavioral accounting research questions.

The first study in this dissertation provides an extensive review of prior behavioral accounting research, specifically focusing on two predominately used theories in behavioral accounting research, cognitive dissonance and social identity theory. The review encompasses a manual review of behavioral accounting journals- *Accounting, Auditing, and Accountability Journal. Accounting, Organizations and Society, Contemporary Accounting Research, Journal of Accounting Research, Journal of Business Ethics, and The Accounting Review*, spanning the last thirty years. This study then discusses the limited application of one of SJT's facets, status quo, in behavioral accounting research, and shows that SJT can address a broader range of behavioral accounting and CSR research questions that cannot be accomplished through the utilization of one or a combination of the four previously discussed foundational theories. The overall review demonstrates the significant need to apply broader psychology theories, such as SJT, that provide new insight into examining complex behavioral accounting and CSR research questions.

Study Two: The Psychological Influences Driving Management's Disclosure of Overstated Environmental Projections

Public companies in sensitive industries that impact the environment tend to have significantly large and ongoing environmental capital expenditures (ECE) to comply with environmental regulations (Blanc et al. 2017). Although there is an increase in the amount of companies disclosing their current ECE, Patten (2005) finds that managers overstate ECE projections relative to actual spending in the following year. Thus, Patten (2005) argues that managers' ECE projections are misleading because they are overstated relative to actual spending in the following year in more than 75 percent of the cases examined.

There are several potential explanations that could provide insight regarding managers' ECE overstatement projections. One such explanation is that managers overstate ECE projections to increase their company's environmental legitimacy with external users (Chen et al. 2014). However, given that managers continuously overstate ECE projections over time, there might be other psychological or social factors that affect their decision to overstate.

This study uses systems justification theory (SJT) to examine whether managers' propensity to overstate ECE projections in the short-term can be explained by the effects of the social system. SJT is a psychological theory that states that individuals maintain and support the status quo even if doing so is not in their interest (Jost and Banaji 1994; Jost and Hunyady 2005). According to SJT, a social system (i.e., status quo) represents any commonly accepted practices, policies, or industry norms legitimized by individuals' conformity and acceptance of them (Haines and Jost, 2000; Jost 1995; Jost and Hunyady 2002). Managers aware of a social system where companies within their industry are overstating ECE projections (i.e., overstatement status quo) might be more inclined to behave similarly and overstate their company's ECE projections. This study further explores whether this overstatement status quo impacts managers' belief that supporting the status quo, through an increase in ECE projection overstatement, is explained by their belief that doing so is in their CEO's and their own interest. SJT suggests that managers might make decisions based on information that is most consistent and agreed upon between multiple parties, even if doing so is not in their own economic self-interest (Henry and Saul 2006; Jost 1995; Jost et al. 2004, 2003b).

This study then analyzes within the status quo condition whether the presence of an external threat affects managers' perceptions of the CEO's pressure to improve the company's environmental image as an important factor in their ECE projections and believe doing so is in their best interest. A system threat represents any change to the current status quo (Wakslak et al. 2011), including stakeholder dissatisfaction. SJT suggests that managers are more likely to overstate in the presence of a system threat by “digging in their heels”, perceiving the CEO pressure to overstate as an important factor in their ECE projection decision, and further believing doing so is in their best interest.

This study uses two 1x2 experiments with one overlapping cell to test these expectations. The study manipulates an overstatement status quo (present vs. absent) and system threat (high vs. low system threat) between-participants. In the present (absent) overstatement status quo condition, participants received information that all (half) of their competitors’ are overstating their ECE projections relative to actual ECE spending. In the high (low) system threat, participants received a news article indicating that the public is disappointed with (indifferent to) many companies’ environmental activities. This ultimately resulted in three main conditions: absent status quo/low system threat, present status quo/low system threat, and present status quo/high system threat. Participants were randomly placed in these conditions and received information about the following: the case company’s and industry companies’ prior year ECE projections and actual spending, the CEO’s recommendation, and that their annual performance evaluation will be assessed based on the accuracy of the ECE projection relative to actual spending. Participants then made ECE projections.

The results show that managers overstate ECE projections more in the presence of an overstatement status quo relative to an absent status quo, explained by managers’ beliefs that doing so is in their best interest. Additionally, managers in the present overstatement status quo condition are more likely to overstate ECE projections when there is a high as opposed to low system threat. Mediation analysis further explains that managers believe their CEO’s pressure to improve the company’s environmental legitimacy was an important factor in their ECE projection and overstating ECE projections is in their CEO’s and their own best interest.

Overall Contribution

The complexity in behavioral accounting and CSR research continues to grow, but the utilization and application of broad, generalizable, and relevant theoretical perspectives remain limited. Additionally, one emerging managerial CSR accounting research question necessitates the utilization of behavioral methods and application of such relevant theoretical perspectives. This managerial CSR accounting topic attempts to understand why managers consistently overstate environmental capital expenditure (ECE) projections, on average, relative to actual ECE spending in the following year.

The first study contributes to behavioral accounting and CSR research by reviewing prior behavioral accounting research, specifically where cognitive dissonance or social identity theory were utilized, and demonstrates the need to explore more broad and generalizable theories. These two more discrete theoretical perspectives, in addition to social dominance and belief in a just world, play a role in developing system justification theory (SJT), a broad psychological theory. Through the review, study one contributes to behavioral accounting and CSR research by demonstrating how prior research utilizes more narrow theoretical perspectives and how SJT could address pertinent emerging complex behavioral accounting research questions that cannot be addressed through the usage of one or more of SJT's foundational narrow theories.

The second study contributes specifically to managerial accounting and CSR research because it advances the understanding and application of SJT's two facets – status quo and system threat - in a complex behavioral accounting setting. It provides insight regarding the effect of a social system and a threat to that social system on managers' environmental disclosure decisions. This study's results are relevant not only to managerial and CSR research but to external users as managers might be willing to use such disclosures as a legitimating tool.

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STUDY ONE: MOTIVATING AND EXPLAINING BEHAVIORAL ACCOUNTING AND CORPORATE SOCIAL RESPONSIBILITY RESEARCH THROUGH SYSTEM JUSTIFICATION THEORY

Introduction

Accounting research is becoming increasingly more complex as researchers expand work into additional corporate social responsibility (CSR) topics (Chen et al. 2014; Dhaliwal et al. 2011; Kim et al. 2012; Michelon et al. 2018). Recent mainstream CSR accounting research focuses predominantly on the relationship between CSR and financial factors such as analyst forecast accuracy (Dhaliwal et al. 2012), earnings quality (Kim et al. 2012), and cost of equity (Dhaliwal et al. 2011)[1]. However, other recent CSR accounting research also explores non-financial factors relating to tax behavior (Hoi et al. 2013; Sikka 2010), assurance and credibility (Cohen and Simnett 2015; Pflugrath et al. 2011), and reporting and disclosure (Bouten et al. 2011; Mahoney et al. 2013). Although the majority of CSR accounting studies employ archival research methods, behavioral methods are being encouraged (Alewine 2010; Moser and Martin 2012) and gaining traction in mainstream accounting literature (e.g. Pflugrath et al. 2011). This relatively new CSR behavioral accounting research landscape has, to date, relied on a somewhat predictable, and limited, set of theoretical lenses.

As accounting becomes more complex, these consistently-used theories are no longer sufficient because they tend to focus on a single, usually narrow, perspective. This narrow view limits the generalizability of the theoretical perspective into recent, complex, and relevant accounting areas. System Justification Theory (SJT), grounded in cognitive dissonance, social identity, social dominance, and belief in a just world, can provide behavioral accounting research

[1] These examples are not exhaustive.

new theoretical insights because its integrative perspective is better suited to help understand complex accounting practices. The current study aims to illustrate how SJT can provide further and new insight into behavioral accounting and CSR research by examining how extant accounting research applies cognitive dissonance, social identity, social dominance, and belief in a just world, and whether SJT provides a more thorough understanding of those same topics.

SJT can have significant applications to behavioral accounting research because it is a broad, complex psychological theory, arguing that individuals often make irrational and, at times, unconscious decisions that do not align with their own self-interest (Jost and Banaji 1994). These decisions are not attributed to a specific bias, but to a collection of biases that form SJT. According to Jost (2001), research in organizational behavior, psychology, sociology, and political science concludes that individuals' beliefs, attitudes, and thought processes produce and maintain social systems (i.e., the status quo) that induce these irrational behaviors. In this study, these beliefs, attitudes, and conscious and unconscious thought processes are referred to collectively as ideologies. Thus, individuals' ideologies play a major role in determining which aspects of a social system they accept as the status quo[2] (Jost 1995, 2001).

SJT states that individuals will justify the status quo in order to maintain the legitimacy of the system in which they live, even if this produces unjust personal outcomes. Authorities, standards, and procedures are most frequently viewed as legitimate and perceived to form the status quo, which in turn, dictates how members in society should behave (Jost 2001). Individuals' ideologies also can dictate why individuals engage in justifying the status quo, commonly referred to as system justification behaviors. System justification behaviors are

[2] This body of literature does not specifically address and define the status quo. Rather, it is simply any social component (i.e. social arrangements/system) that becomes accepted as the norm.

explained through several theories including cognitive dissonance, social identity, social dominance, and belief in a just world; thus each of these theories support the broader construct labeled SJT. Cognitive dissonance theory, social identity theory, social dominance, and belief in a just world also can potentially affect individuals' attitudes, thoughts, and beliefs. SJT purports twenty propositions regarding individuals' behavior (Jost, Banaji, and Nosek 2004), however, there is limited research that applies this theoretical perspective to behavioral accounting.

SJT can utilize its twenty propositions to address relevant complex behavioral accounting research questions. For example, why do managers repeatedly disclose inaccurate CSR information? According to SJT, managers might be disclosing inaccurate CSR information because it represents the current normative practice followed by its company and its competitors. In comparison, the usage of cognitive dissonance would suggest that managers are disclosing inaccurate CSR information in order to reduce their own personal guilt and potentially improve their own self-image. SJT offers extensive explanations that might be similar or diverge from the commonly used behavioral accounting theories of cognitive dissonance, social identity, social dominance, or belief in a just world.

While SJT holds promise as a foundation theory in behavioral accounting research, its complexity compels an articulation of the theory and its relation to more narrow theories before a proper assessment of its potential contribution can be assessed. SJT's propositions are influenced by either one or a combination of the four theories of cognitive dissonance, social identity, social dominance, and belief in a just world[3]. Although SJT has been motivated by these more discrete

[3] Jost et al. 2004 examine SJT's propositions in detail, but the current study does not specifically review SJT's propositions and how each of the four foundational theories build on each of the propositions. Rather, this study reviews prior behavioral accounting research and then applies SJT's propositions to address complex accounting topics.

theories, it diverges from them on several accounts. Namely, SJT can maintain similar assumptions about individuals' beliefs, attitudes, and thoughts (ideologies) but can apply it towards a system justification context. For example, social dominance refers to group based hierarchies, but SJT utilizes this assumption to state that, in addition to individuals, all groups, regardless of their hierarchy, will support the current status quo. Thus, SJT states an opposite theoretical assumption than is assumed under the other four theories.

In analyzing the corporate CSR environment, this study argues that indeed SJT can address a broader range of behavioral accounting research questions that cannot be achieved under the application of only one of the theories. For example, cognitive dissonance predicts that individuals who feel personal responsibility for their organization's activities will rationalize their organization's unethical and environmentally unsafe processes to reduce their own guilt. Comparatively, SJT predicts that individuals do not have to feel responsible for the organization's activities to rationalize the organization's unethical and environmentally unsafe processes. SJT's wide span of assumptions allow researchers to address behavioral accounting questions such as sustainability disclosure reporting, environmental expenditures, and executive decisions regarding environmental projects.

Given the scope of cognitive dissonance, social identity, social dominance, and belief in a just world, this review focuses on specific behavioral accounting studies that highlight the significant need to apply SJT. In addition, given that the purpose of this study is to illustrate SJT's potential to facilitate the examination of accounting and CSR topics, significant detail and consideration is devoted to SJT's underlying logic and application into behavioral accounting research. This process results in a thorough understanding of each of the theories' prior application in accounting, and how SJT comparatively addresses current complex accounting and

CSR research questions that its four supporting and potentially competing theories are unable to address.

The remainder of this study is organized as follows. The second section focuses on behavioral accounting research that has applied any of SJT's four foundational theories, including cognitive dissonance theory, social identity theory, social dominance theory, and belief in a just world. It also investigates how these four theories have been applied in a CSR setting, where applicable. The third section then discusses the foundation of SJT and how its application into behavioral and CSR accounting research can address more holistic and complex research questions, providing superior insight into individual decision-making.

Accounting Research using SJT's Foundational Theories

This section of the study examines the following four theories that Jost and Hunyady (2005) utilize to support SJT: cognitive dissonance (Festinger 1957), social identity theory (Tajfel 1981; Tajfel and Turner 1979), social dominance theory (Sidanius and Pratto 1999), and belief in a just world (Lerner 1980). Although SJT uses these four theories, SJT's propositions are not always completely consistent with the propositions underlying the other four theories[4]. Identifying how SJT selectively incorporates these individual theories allows a richer understanding of the potential social and economic consequences resulting from individuals' susceptibility of engaging in system justification thinking.[5] Thus, it is necessary to first discuss each individual

[4] Jost et al. 2004 facilitate an understanding of SJT's theory and briefly discusses some of the theoretical motivations underlying SJT's propositions. For a more thorough understanding of the specific differences between SJT and the other four foundational theories, please refer to Olczak (2019).

[5] It is relevant to note that SJT can also be compared and contrasted to ego and group justification as well as other theories such as false consciousness. Ego and group justification are recognized as contradictory justification tendencies of SJT (Jost et al., 2004). However, for the purposes of this study, the four theories mentioned above were found to be the most significant in establishing and converging SJT.

theory and relevant related research before discussing SJT and its prospects in detail. Figure 1 provides SJT's twenty propositions (See Figure 1).

Cognitive Dissonance

Both behavioral accounting research and CSR research define cognitive dissonance (Festinger 1957) as individuals holding two incongruent beliefs, thoughts, or opinions, leading to dissonance or a state of discomfort. The discomfort is exhibited by emotions such as guilt, frustration, shame, or stress. Cognitive dissonance occurs when individuals face a situation that may be potentially unpleasant or unwarranted and obstructs their goal. Individuals feel discomfort when making a decision and selecting between two opposing alternatives. Cognitive dissonance focuses on the individual-level rather than the organizational or social.

Cognitive dissonance theory was frequently used in behavioral accounting research in the 1970s and 1980s to explore accounting topics relating to budgets (Merchant 1985), managerial attitude (Mia 1988), and managerial behavior (Foran and DeCoster 1977). More recent behavioral accounting research has applied cognitive dissonance theory in examining asset impairment (Rennekamp et al. 2015), management control (Anderson et al. 2017), and management reporting (Church et al. 2014). Other research examines cognitive dissonance in performance feedback (Thornock 2016), CEO deception (Hobson et al. 2017), and financial misreporting (Hobson et al. 2012).

Behavioral accounting research applies cognitive dissonance theory in several ways. First, prior behavioral accounting research examined what factors impact individuals' cognitive dissonance and how cognitive dissonance impacts individual decision-making. These factors include poor performance, negative media or government exposure, and timing and type of employee feedback. Employees with poor performance experience an increase in cognitive dissonance (i.e. attitude or motivation) and will increase their participation in budgeting decisions to reduce the psychological unease (Mia 1988). Managers experience cognitive dissonance when the news media presents negative information on an organization. These managers reduce cognitive dissonance by modifying and improving CSR reporting (Adams and Whelan 2009). Other research demonstrates how feedback or instructions impact cognitive dissonance. Employees experience greater cognitive dissonance when feedback is provided immediately before an incorrect decision, suggesting the employee performance is significantly improved when feedback is given immediately after the implementation of an incorrect decision (Thornock 2016). Similarly, auditors' detection of fraud is improved, however, instructions need to be provided before the auditors begin work (Hobson et al. 2017).

Second, prior behavioral accounting research examines ways to reduce cognitive dissonance by resolving inconsistencies in their thoughts or beliefs and providing reasons for their actions. Jermias (2001) finds that individuals rejected new costing systems and reduced their sense of discomfort by believing alternative options are inefficient and inadequate. However, individuals who rejected alternative costing systems desensitized themselves to potential solutions that can mitigate current costing system issues, preventing change (Jermias 2001). To reduce the negative effect of cognitive dissonance, individuals have to believe that the decision made is more desirable than its alternative (Harmon-Jones and Harmon-Jones 2007). Individuals might experience this discomfort for up to three years if they do not attempt to resolve inconsistencies in their beliefs, thoughts or opinions (Sharot et al. 2012). Only individuals who feel responsible for the consequences or effects of their decision feel dissonance (Harmon-Jones et al. 2008). Rennekamp et al. (2015) find that asset impairment judgements can differ based on whether managers feel responsible for the impairment and investment decision. Other accounting research sheds further light on how we can measure cognitive dissonance through speech analysis (Hobson et al. 2012). Table 1, Panel A, summarizes behavioral accounting research relying on cognitive dissonance theory.

Although the application and advancement of cognitive dissonance in recent years is sparse, the recent rise in CSR research has incrementally increased the relevance and utilization of cognitive dissonance. With the rise of CSR research in accounting, initial cognitive dissonance CSR work focused on explaining managerial and stakeholder sustainability decision-making (Adams and Whelan 2009). The majority of the behavioral accounting research applying cognitive dissonance in a CSR setting has been published in the *Journal of Business Ethics* (Andiappan and Dufour 2017; Bodur et al. 2015; Bonner et al. 2016; Lamm et al. 2015; Thomas and Lamm 2012). CSR research on cognitive dissonance theory also examines factors affecting cognitive dissonance, including attitudes and norms, and the effect of cognitive dissonance on individual decision-making, including employee performance (Thomas and Lamm 2012).

Recent CSR research applying cognitive dissonance theory finds employees externalize the responsibility to another source when performing a harm-doing activity, reducing their feelings of guilt (Andiappan and Dufour 2017) and rationalize unethical behaviors by ignoring any moral reasoning behind their behavior (Bonner et al. 2016). Cognitive dissonance can also be used to influence change. Adams and Whelan (2009) argue that stakeholders can institute change and increase organizations' accountability for their sustainable performance. Organizations are then faced with two conflicting demands relating to satisfying stakeholder need for increased sustainability accountability and its own organizational need to maximize wealth (Adams and Whelan 2009). Organizations might perceive stakeholder demand as an obstruction of their ability to maximize shareholder wealth, experiencing a state of discomfort. Table 1, Panel B, reports the findings of CSR research using cognitive dissonance theory.

Table 1, Panel C, reports the findings of behavioral accounting research that indirectly applies cognitive dissonance theory. These findings are similar to those reported above that directly use cognitive dissonance theory. Although they do not specifically reference cognitive dissonance theory, they indirectly discuss how cognitive dissonance plays a role in financial (e.g., Georgiou 2018) and managerial decisions (e.g., Hope and Wang 2018; Rennekamp et al. 2018). Georgiou (2018) examines how investors evaluate information relating to fair value, suggesting that cognitive dissonance plays a major role in determining what information investors and analysts use to estimate fair value. Hope and Wang (2018) apply prior knowledge about cognitive dissonance to understand how managerial deception is detected while Rennekamp et al. (2018) demonstrate how individuals cognitively make unconscious judgments that improve deception detection.

Social Identity Theory

Behavioral accounting research has been inconsistent in defining social identity theory. Social identity theory (Tajfel 1981; Tajfel and Turner 1979) is defined as individuals' role in society dependent on their social association with other individuals and groups. Associated groups influence the development of an individual's personal, social, and economic identity. Social identity theory is an individual's placement or sense of belonging in society. Although this is the most commonly used reference, behavioral accounting research has inconsistently applied social identity theory. Prior behavioral accounting research applied the social identity lens to evaluate social ties (Cardinaels and Dierynck 2017; Free and Murphy 2015; He et al.

2017; Towry 2003), network ties (Brown and Drake 2014; Chua and Mahama 2007), and friendship ties (Gu et al. 2018; Rose et al. 2014). Social identity theory is most commonly used to describe social rather than the individual or organization.

Behavioral accounting research applies social identity theory more commonly than cognitive dissonance, social dominance, or belief in a just world, especially regarding financial, managerial, and audit-related topics. This wide range of application suggests that social identity theory has become an over-applied theoretical lens that should be used cautiously given its narrow and discrete foundation. It is necessary to consider other theoretical perspectives that provide a holistic understanding and could be driving and motivating complex and relevant accounting situations.

Social identity has been used in behavioral accounting research for two different reasons. First, the research uses social identity to describe how different relationships affect individual decision-making. These identities include auditors' identification with their clients (Bauer 2015) or committee members (Bruynseels et al. 2011; Cohen et al. 2017; He et al. 2017), committee members' social ties to the CEO (Wilbanks et al. 2017), accountants' identification with an accounting firm or member (Heinle et al. 2012; Iyer et al. 1997; Krishnan et al. 2011), firm membership (Bills et al. 2018), accounting team identification (Towry 2003), organizational identity (Anderson-Gough, Grey, and Robson 2001; Heinle et al. 2012), CEO friendship ties (Rose et al. 2014), and social bonds (Free and Murphy 2015).

Second, behavioral accounting research examines the effects of social identity theory. These effects can be either positive or negative, dependent on the contextual situation. Auditors' professional identity improves auditor independence, however, stronger auditor identification with a client reduces audit independence, leading auditors to agree more with client assessments

(Bauer 2015). Audit committee members' professional and social ties with an organization or CEO also negatively impacts investors' competence and effectiveness perceptions of the audit committee (Cohen et al. 2017). Alumni identification with an accounting firm increases the likelihood of the alum recommending and sending clients to the former accounting firm (Iyer et al. 1997). Team identification can improve individual coordination and effectiveness (Towry 2003). Managers with a high organizational identity tend to receive greater incentives (Heinle et al. 2012). Social ties between auditors and audit committee members could impair audit quality and increase audit fees (He et al. 2017). CEOs with social ties to the director are more likely to approve of the director's proposed reduction in expenses, allowing the director to meet CEO's bonus targets (Rose et al. 2014). Employees who identify with each other are more likely to commit fraud (Free and Murphy 2015). Table 2, Panel A, summarizes social identity theory in behavioral accounting research.

Social identity theory also has been a frequently applied theoretical lens in CSR research (He and Li 2011; Marin and Ruiz 2007; Marin et al. 2009; Turker 2009). Social identity theory's application in CSR research also is common in *Journal of Business Ethics* (Hoitash 2011; Kaplan et al. 2015; Marin and Ruiz 2007; Marin et al. 2009; Turker 2009). CSR research examines different factors that influence social identity (i.e., CSR initiatives) and types of social identity (i.e., organizational, consumer) and their impact on individual decision-making.

Articles in *Journal of Business Ethics* have repeatedly applied social identity theory by examining how organizational or individual identification is impacted by CSR and CSR initiatives, finding that CSR initiatives can improve consumers' social identification with an organization (Marin et al. 2009). Companies that act sustainably and ethically responsible are more likely to engage and maintain loyal customers (He and Li 2011). Additionally, when employees and managers socially identify with the company (i.e., organizational identity), the organization tends to have stronger internal controls and decreased likelihood of a material weakness. This is because managers who highly identify with the company are more likely to exert greater effort in improving and maintaining strong internal controls. However, managers who socially identify with their employees are more likely to compensate their employees more. Research in *Journal of Business Ethics* also examines how an organization's CSR and employees' social identification increases employees' organizational commitment (Turker 2009). Overall, CSR research on social identity theory suggests there are benefits associated from developing and improving various types of social identification. One benefit is that companies increasing their CSR engagement help customers identify with the company. This identification can then be used to build customer loyalty, increasing the company's exposure and potentially improving the company's financial position. Table 2, Panel B and C, summarizes the use of social identity theory in CSR-related research.[6]

Social Dominance Theory

Although social dominance theory has been rarely applied in accounting and CSR research, the understanding and application of social dominance theory tends to overlap with social identity theory. Social dominance theory (Sidanius and Pratto 1999) states that individuals believe they are superior to other groups. Social dominance theory discusses the existence of inequality among different social groups in the current social system (Pratto et al. 1994) or a belief in a group-based hierarchy (Jost and Hunyady 2005; Jost and Thompson 2000; Sidanius

[6] Libby, Rennekamp, and Seybert (2015) only briefly refer to social identity theory while reviewing prior experimental and survey literature on earnings managements.

and Pratto 1999). Social identity's theoretical understanding regarding individuals' need to identify and make decisions with those whose values and interests align also reflects social dominance theory's predictions to an extent. Social dominance theory differs from social identity in that individuals will choose to align themselves with groups they believe are superior.

Social dominance theory has rarely been applied in mainstream behavioral accounting research. Social dominance theory is usually applied in critical research or non-mainstream accounting (Kraten 2007; Murphy 2012). Research on social dominance is highly regarded in psychology (Duckitt 2006; Gosling et al. 2003; Jost and Thompson 2000; Van Hiel et al. 2004), management (Khan et al. 2018; Simmons and Umphress 2015), and ethics (Rosenblatt 2012). Although, social dominance theory has been directly examined through other streams of research, it is fairly common that accounting research indirectly applies social dominance theory. For this reason, the discussion on social dominance theory is very limited.

Belief in a Just World

The concept of belief in a just world (Lerner 1980) holds that individuals get what they deserve. Specifically, individuals find that the outcome suits the actions of the individual. Similar to social dominance theory, behavioral accounting research has marginally applied belief in a just world in examining accounting related topics. Prior behavioral accounting research utilized belief in a just world to examine audit independence (Windsor and Ashkanasy 1995; Windsor and Warming-Rasmussen 2009), client management bargaining power (Windsor and Ashkanasy 1995), and ethical decision-making (Ashkanasy et al. 2006). Similar to social dominance theory, belief in a just world also has been extensively examined in psychology, investigating detection accuracy (Schindler and Reinhard 2015), social goals (Sutton et al. 2017), and social categories

(Correia et al. 2007). Given behavioral accounting research's limited application of belief in a just world and social dominance theory, the main focal point of the remainder of this paper will be on cognitive dissonance and social identity theory.

System Justification Theory

Having explained each individual supporting theory and approaches taken by related research, I move forward with explicating SJT and its promise for contributing to behavioral accounting research. SJT (Jost and Banaji 1994) is a psychological theory stating that individuals will justify the current status quo to boost the status quo's legitimacy even at their own or their group's expense (Jost et al. 2004). SJT attempts to explain the most important social and psychological factors driving individuals to perceive the existing social structure as good, legitimate, and inevitable, and act in a manner that is in accordance with the current social standards (Jost and Banaji 1994; Jost et al. 2004). SJT's twenty propositions relate to rationalizing the status quo, internalizing inequality, having justification tendencies related to ego, group[7], and system, and reducing two inconsistent beliefs (Jost and Banaji 1994; Jost et al. 2004; Jost and Hunyady 2002). For example, SJT proposes that individuals disadvantaged by the status quo (e.g. low income individuals) are more likely to unconsciously accept and internalize their economic and social position in the system.

According to SJT, several individual judgments can be expected to hold true. Individuals rationalize and defend the status quo in order to obtain a sense of certainty, stability, and safety

[7] Ego justification is defined as the need to maintain a positive self-image while group justification refers to the development of positive images of the group the individuals associate themselves with that can be based on various factors such as social class, ethnicity, career, gender, etc. (Jost et al., 2004).

in life, and to enhance or establish relationships (Jost et al. 2004, 2008). These reasons, as well as others including the establishment of order and structure, explain why groups harmed by the current system (i.e. disadvantaged groups) are willing to defend and boost the system's legitimacy (Jost and Hunyady 2002; Jost et al. 2008). Individuals also tend to defend the status quo when there is a threat[8] to the system. Their defensive stance helps alleviate aversive emotions such as frustration and guilt, and improve wellbeing in the short-term. However, in the long-term, invoking system justification rationales exacerbates these individuals' negative emotions, including wellbeing (Jost and Thompson 2000).

Application of System Justification Theory in Behavioral Accounting Research

SJT, although a popular psychology theory used in social cognition, has yet to be utilized and applied in behavioral accounting research. Although not specifically referencing SJT, prior research examines some of SJT's components relating to the effects of a status quo on individual decision-making (Bazerman and Moore 2011; Beattie and Jones 2000; Fry et al. 2007; Kadous and Sedor 2003; Messier et al. 2014). CSR research also examines status quo effects (Bebbington and Fraser 2014; Cook 2009; Martinov-Bennie 2007), including how the social norms affect governments' decisions to deal with emission problems (Cook 2009). Behavioral accounting research finds that the effect of status quo can have positive and negative effects on individual decision-making, impacting how independent auditors make project-continuation recommendations (Kadous and Sedor 2003) and how auditors apply accounting standards based on prior year treatments (Messier et al. 2014). Behavioral accounting research has slowly begun

[8] A threat to the system can take on many different forms. Normally, it can be an event, individual, ideology, or behavior that is inconsistent with the current existing social structure.

to explore the effect of status quo, but it lacks the understanding provided by SJT. SJT explains the psychological and cognitive motivations driving individual decision-making. SJT can provide a more holistic and thorough psychological understanding of individual decision-making and this understanding is especially relevant given behavioral accounting's complexity and continued development within the CSR domain. However, this explanation and application is, at times, unfortunately missing in behavioral accounting research, while the use of more narrow theoretical perspectives persists. The reliance on discrete and narrow theoretical perspectives might not provide behavioral accounting researchers sufficient understanding about emerging complex accounting topics, and as such, it is crucial to examine other possible theoretical perspectives that can provide a more thorough understanding.

Implications for Accounting Research

Prior research demonstrates there is interest in the understanding and application of cognitive dissonance theory, social identity theory[9], and status quo effects. The following discussion[10] offers broad research questions utilizing SJT for behavioral accounting researchers. The use of SJT in current relevant accounting topics can potentially broaden and provide superior understanding of individual decision-making because behavioral accounting is growing too complex to study with a narrow theoretical lens. Examples of more specific research opportunities using SJT are discussed in the following subsections.

[9] Belief in a just world and social dominance theory are not frequently used in behavioral accounting research. This is probably because both theories are classified as trait.
[10] I categorize behavioral accounting research into the following dominant accounting research areas: auditing, managerial, financial, and CSR/ESG. However, there may be overlaps between these dominant areas.

Auditing

As illustrated above, understanding auditors' decision-making through the cognitive dissonance or social identity lens has been a popular topic of interest in behavioral accounting research. SJT enhances this understanding by applying the theoretical underpinnings from both cognitive dissonance theory and social identity theory. A substantial amount of complex auditing topics could be explored with the application of SJT, and one of these is audit quality. SJT suggests audit quality could be impacted by external threats to the auditors' decisions and prior decision-making. Applying SJT's third proposition[11] on threats, external threats are events, information, or individuals that cause auditors a sense of discomfort. Individuals are more likely to defend the status quo or social system when faced with external threats. As an example, auditors who feel threatened by their client will attempt to appease their client, further supporting current practices. They can support current practices by referring to prior years' information and making similar decisions in the current and future audit, potentially at the risk of failing their due diligence by not increasing their professional skepticism. They rationalize the external threat (i.e., client pressure) and continue current processes by referring to prior year's information by socially categorizing and stereotyping the client (e.g. high versus low status or power). Auditors who socially categorize their clients as high status or high power are more likely to appease the client's demands by using prior processes to dictate current and future audit procedures. The application of SJT in the context of audit quality causes some concern because behavioral accounting research has not fully examined the effects of external threats, social categorization,

[11] SJT's third proposition states that people will defend and justify the social system in response to threat by using stereotypes to differentiate between high- and low-status groups to a greater degree (Jost and Banaji 1994).

and prior decision-making on current and future decision-making. Therefore, I propose the following research questions would be supported under SJT:

RQ1: When confronted with client pressure, how do auditors socially categorize their client based on their status, and how does this categorization affect auditors' decisions to continue current processes by using prior years' information?

<u>Managerial Accounting</u>

Behavioral research in managerial accounting tends to examine employee traits, CEO compensation, and employee performance. Applying SJT can again broaden and enhance knowledge more than does the application of cognitive dissonance or social identity theory. Several of SJT's theoretical propositions can be applied toward understanding complex topics in managerial accounting. For example, Proposition #1b states that negative events are more likely to be viewed positively if the likelihood of its occurrence is inevitable and near[12]. As such, individuals are more likely to view this forthcoming event positively, even if it is not rational or consistent with the individuals' values or prior beliefs. Applying this understanding to a managerial setting, I propose that employees may be more willing to accept, and even favor, new compensation schemes that might not necessarily be in their best interest. If the employee is informed that this new compensation scheme is already implemented or the probability of its implementation is evident, the employee is more likely to rationalize the new compensation scheme, believing that there are positive effects of this implementation. Although rationally counterintuitive, SJT suggests that individuals cope with the inevitability by consciously finding

[12] Proposition 1 (b) of SJT states that individuals will rationalize the status quo judging likely events to be more desirable than unlikely events, regardless if those events are attractive or unattractive (Jost and Banaji 1994).

the event positive, reducing their cognitive dissonance and increasing their level of positive affect. Therefore, I propose the following research question applying SJT into the managerial context.

RQ2: Are employees more likely to reduce their cognitive dissonance and improve their positive affect by accepting and even preferring a new compensation scheme as the likelihood of its implementation becomes evident?

<u>Financial Accounting</u>

Behavioral studies in financial accounting focus primarily on CEO decision-making, earnings management, and investor decision-making. SJT's Proposition #2 states that individuals use stereotypes to justify social and economic injustices,[13] while Proposition #7 states that individuals' behavior differs depending on their perception of the social system's legitimacy[14]. Collectively, these two propositions suggest that as the legitimacy of the system increases, individuals will use different types of stereotypes to rationalize social and economic injustices[15]. Applying this reasoning to financial accounting, investors focusing on companies that operate in highly environmentally sensitive industries might stereotype the companies' social and economic impact (i.e., injustice) by believing that questionable behavior, such as an oil spill or using unsustainable practices, is a way of cutting costs and follows normative business practices. A

[13] SJT's second proposition states that individuals will use stereotypes to rationalize social and economic status differences between groups, and one group will be stereotyped differently depending on whether the group is perceived to be high or low in status (Jost and Banaji 1994).
[14] SJT's seventh proposition states that as the perceived legitimacy of the system increases, members of high-status (low-status) groups will exhibit increased in-group (outgroup) favoritism (Jost and Banaji 1994).
[15] SJT's second and seventh propositions are divided into differences in behavior based on the individual's status (i.e., high versus low status). In the following example, investors are categorized as a high status group and I do not make inferences between investors, classified as a high status group, and a low status group.

second justification is that these investors might use stereotypes to defend the practices of the organizations and minimize the companies' negative reputation. For example, investors might claim that the company was unintentionally unethical where the unethical events that occurred were beyond the organization's control, or the company took immediate appropriate measure to rectify the unethical behavior, rationalizing the company's unethical behavior. Investors might even place blame on specific victimless groups for the unethical behavior. This leads to the following research question.

RQ3: Does a company's questionable practice (i.e., economic or social injustice) (a) impact investors' perceptions of the company's legitimacy, (b) impact who investors hold responsible and blameless, and (c) deter investors or motivate them to invest in the company?

Corporate Social Responsibility and Environmental Social Governance

CSR research, like all other accounting areas, overlaps with other accounting research topics. In the following section, I overlap CSR research with managerial accounting given there are major similarities between managerial and CSR topics. As previously illustrated, behavioral CSR research has risen in popularity as evidenced by the application of cognitive dissonance and social identity theory in research published in *Journal of Business Ethics*. However, a wide range of relevant CSR research questions still need to be investigated because CSR topics are becoming extensive and, at times, convoluted and controversial (e.g. Bondy et al. 2012). One of the most popular CSR topics is understanding an organization's ethical behavior relating to the environment. SJT proposes that individuals are likely to justify and rationalize a current normative practice, even if this practice is not aligned with the individual's best interest. SJT's Proposition #7 and #8 state that the legitimacy of current normative practice affects individuals' behavior to support the practice, especially when individuals exhibit system justification tendencies.[16] These two propositions suggest that as individuals' system justification tendencies increase, they are more likely to accept and rationalize a behavior if it is consistent with society's norms, including what other organizations are practicing, even if doing so is not in their best interest. Applying this theoretical perspective in the CSR realm, SJT suggests that managers' unethical behavior might be overlooked if stakeholders are aware that other organizations are currently behaving similarly.[17] Stakeholders with greater system justification tendencies are more likely to overlook managers' unethical behavior. It is challenging for stakeholders to hold one organization accountable when they have already accepted the same behavior from other organizations. Holding one organization accountable while accepting other organizations' poor practices, would likely increase stakeholders' cognitive dissonance. This explains why organizations behaving similarly to others within their industry might not suffer negative reputation effects. For instance, stakeholders may presume that firms in environmentally sensitive industries are harming our environment, but rationalize this behavior because all organizations within that industry are committing the same unethical act (i.e., harming the environment). This leads to the next proposed CSR research question.

RQ4: When management behavior converges with other organizations' behavior, can stakeholders' system justification tendencies explain whether they are willing to accept management's unethical behavior or hold management accountable?

Finally, SJT's Proposition #1c states that individuals rationalize the status quo when their motivational involvement is high rather than low. This suggests that managers with high rather

[16] SJT's eighth proposition states that as individual's system justification tendencies increase, high-status (low-status) groups will exhibit increased in-group (outgroup) favoritism.
[17] In this CSR example, stakeholders who hold limited power are considered low-status and would exhibit greater outgroup favoritism as their system justification tendencies increase.

than low motivational involvement are more likely to judge inevitable events as positive and as the status quo. Based on SJT's Proposition #7, this effect is also potentially exacerbated as the perceived legitimacy of the event or status quo increases. Applying this understanding to corporate social responsibility, managers with high motivational involvement in an organization's practices and who socially identify themselves as part of this legitimate organization are more likely to behave in a way that is consistent with that organization's practices. This contention also suggests that low level managers are more likely to make decisions consistent with upper management's expectations, even if they appear potentially unethical. This leads to the final proposed research question.

RQ5: Does low-level management's motivational involvement with the organization and their perception of the organization's legitimacy affect their decision to defend upper management's unethical decisions?

Conclusion

In this study, I review how extant accounting research applies cognitive dissonance and social identity theory into behavioral accounting and CSR research. This is relevant because accounting and CSR research has become increasingly diverse and complex. Reviewing how prior accounting research uses these two theoretical perspectives is needed to understand how we can utilize other potential theoretical perspectives to address the emerging complex research questions in behavioral accounting research. One such theoretical perspective, SJT, grounded in cognitive dissonance theory, social identity theory, social dominance theory, and belief in a just world, is a broad psychology theory that potentially could address those emerging behavioral accounting research questions. SJT argues that individuals will support the status quo even against their own self-interest because of a collection of biases that drive individuals to make irrational decisions.

I argue SJT provides a holistic and value-relevant way of examining behavioral accounting and CSR research questions that cannot be addressed through the use of any of SJT's four foundational theories. SJT differs substantially from the underlying foundational theories because a majority of SJT's propositions cannot be applied using one or a combination of the other theories. In fact, the research questions discussed above cannot be appropriately addressed by any one, or any combination of the four theories because the propositions underlying the four theories do not extend far enough to make a theoretical prediction. Therefore, the four theories only provide a narrow perspective and are silent[18] on more complex behavioral accounting topics. As such, SJT's twenty propositions enhance the potential contributions of behavioral accounting and CSR research because the propositions examine individuals' cognitive, affective, and behavioral processes impacting their decision-making. SJT suggests individuals' attitudes, beliefs, and thoughts drive their ideologies and dictate the individuals' propensity to uphold the status quo.

Applying this multi-dimensional and broad psychology theory to behavioral accounting and CSR research provides several avenues for future behavioral accounting research. Future research can further explore the proposed research questions or develop other research questions by applying SJT. Several of SJT's propositions were not utilized in the current study and future behavioral accounting research could explore and apply them in other complex emerging topics.

[18] The four theories propositions are very limited and given the growing complexity of accounting research, these theories simply would not be applicable in addressing the broader and complicated accounting research questions discussed.

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STUDY TWO: THE PSYCHOLOGICAL INFLUENCES DRIVING MANAGEMENT'S DISCLOSURE OF OVERSTATED ENVIRONMENTAL PROJECTIONS

Introduction

Public companies operating in industries where the environmental impact of day-to-day operations is high (e.g. chemical, oil and gas) incur ongoing and substantial environmental capital expenditures (ECE) to comply with environmental regulations related to pollution abatement and control (Blanc et al., 2017). And while a considerable number of firms disclose in their 10K reports current year spending on environmental capital projects (Cho et al., 2012a), a subset of these also provide projections of future ECE. Patten (2005) compares the current year environmental capital spending with prior year projections over the period 1993-2002, and finds that projections were overstated for 76.1 percent of his 270 firm-year observations. For the overwhelming majority of these cases, the actual spending was between 15 and 75 percent lower than had been projected in the prior year. In contrast, Patten (2005) documents that projection errors (the difference between projections and actual spending) for total capital expenditures were very small and evenly distributed across over- and under-projections. Patten (2005) thus argues managers' ECE projections are more misleading than meaningful. [19]

Chen et al. (2014) argue that managers potentially overstate environmental capital spending projections to increase their company's environmental legitimacy with investors and other stakeholders. In support of this claim, they show that larger firms and those with worse environmental performance are more likely to include overstated projections of future ECE.

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[19] De Villiers and Van Staden (2011) similarly find that companies' earnings projections relative to actual earnings tend to be relatively accurate, suggesting difficulties with forecasting are likely not the cause of ECE projection errors.

However, given the size of environmental capital investments and their potential economic and social consequences, it is important to better understand what might be driving managers' seemingly systematic overstatement of future environmental capital spending.

In this study, I use systems justification theory (hereafter SJT), a psychological theory explicitly developed to address individuals' propensity to maintain and support the status quo (Jost and Banaji, 1994; Jost and Hunyady, 2005), to examine whether maintaining the status quo is one of the factors behind managers' short-term decisions to overstate environmental projections[20]. Managers are almost certainly exposed to different sources of information when projecting their company's future ECEs. For example, managers might conduct several analyses to predict possible future environmental capital spending (e.g. low- and high-end) based on economic and social factors since these projects are often large in scale and costs and outcomes can be uncertain. However, managers may receive conflicting demands from upper management, shareholders, and other stakeholders when determining how much environmental spending should be projected and disclosed (O'Sullivan, 2015). If comparable companies in a particular industry tend to overstate their ECE, then other managers may follow suit by similarly disclosing higher projections of future environmental spending.

According to SJT, the status quo represents the currently accepted social system, such as the commonly accepted organizational practices and policies or industry norms, which are legitimized by individuals' acceptance of them and conformity with them (Haines and Jost, 2000; Jost, 1995; Jost and Hunyady, 2002, Jost et al. 2003a). I explore whether the presence of a status quo affects managers' beliefs that doing so is in their CEO's and their own interest. SJT

[20] Patten (2005) finds that managers often overstate environmental projections over a multi-year period. The current study only examines managers' short-term disclosure decisions (i.e. a single year and one projection decision).

suggests individuals often make decisions that preserve the status quo even at the expense of their own economic self-interest (Henry and Saul, 2006; Jost, 1995; Jost et al., 2004, 2003b). This view is contrary to agency theory which assumes agents will act according to their own economic self-interest rather than against it (Baiman, 1990; Eisenhardt, 1988) unless provided incentives to do otherwise, and thus firms must implement management control systems to curb the otherwise self-interested decisions agents might make (Brown, Evans and Moser 2009; Nyberg et al. 2010).

I further use SJT to examine whether, in the presence of a status quo condition, an outside threat affects managers' perceptions of the CEO's pressure to improve the company's environmental image as an important factor in their environmental spending projections, and whether they perceive doing so is in their CEO's and their own best interest. SJT argues that individuals rationalize and legitimize the status quo in the presence of a system threat. A system threat represents any potential change or threat to the current status quo (Wakslak et al., 2011). A system threat is anything that causes individuals to question their current behavior. For example, managers could experience system threats from conflicting stakeholder demands through social media. If stakeholders indicate they are dissatisfied with current company behavior, SJT suggests managers will be more likely to support the status quo (e.g. Feygina et al., 2010; Jost et al., 2007), in that the threat stimulates a defensive mechanism to "dig in their heels." In the ECE projection scenario, if stakeholder pressure threatens a company's environmental legitimacy, I expect managers to be more likely to choose to overstate environmental spending to mitigate the stakeholder threats. Thus, the presence of a status quo condition and a threat to the social system might explain why companies use overstated projections.

In this study, I use experimental methods to examine whether maintaining the status quo is one of the driving forces behind individual managers' decisions to overstate projected ECE. Based on SJT in this specific setting, I explore, first, whether managers who are aware of their competitors' ECE overstatements are more likely to overstate their own ECE projections, even if projecting inaccurately is detrimental to their annual performance evaluation. Next, I test whether managers aware of the overstatement status quo are more likely to conform to CEO pressure to overstate ECE projections. According to SJT, I predict that managers will perceive that overstating ECE projections aligns their interest with those of the CEO, even though doing so actually harms the managers' annual performance evaluations. SJT predicts that managers will "dig in their heels" and become even more convinced that the status quo should guide their decision making when they experience system threats. I examine how such threats impact decision-making regarding ECE projections. I argue that managers who are aware of their competitors' ECE overstatements and experience a system threat are more likely to overstate ECE projections than when a system threat is absent. Related to this, I anticipate that managers aware of an overstatement status quo and receiving high pressure from stakeholders (system threat) will be more likely to believe their CEO's additional pressure to overstate is valid because it is consistent with addressing stakeholder expectations as well as current industry behavior. In this scenario, I expect that managers will be more likely to view CEO pressure to overstate environmental projections as an important factor in their decision, and further to perceive, falsely, that overstating ECE projections is in their own best interest.

To test these expectations, I use two 1x2 experiments with one overlapping cell. The status quo and threat to the system are manipulated on a between-subjects basis. The status quo is operationalized as present when all major competitors are overstating their ECE projections relative to actual ECE spending or absent when only about half of major competitor companies overstate their ECE projections relative to actual ECE spending. System threat is operationalized through an email received by participants in the status quo present condition from their boss regarding an important and relevant news article indicating that the public is currently disappointed with (high system threat) or indifferent to (low system threat) many of the companies' environmental activities. In the status quo absent condition, participants only receive information relating to the low system threat.

Participants assumed the role of a Chief Sustainability Officer. All participants were required to have prior or current managerial experience. Participants evaluated conflicting stakeholder demands in projecting their company's future ECEs and were paid a fixed salary upon successful completion of the experiment. This design allowed me to understand the psychological (cognitive dissonance, system justification) and economic (performance evaluation) motivations driving managers to overstate a company's ECE projections. Post experimental questions were included to understand potential alternative explanations for managers' decision-making, including economic and psychological motivations. These post experimental questions were then used as support for my mediation analyses.

The results of this study provide potential explanations for why managers may be willing to overstate ECEs. Results show managers are more likely to overstate environmental projections in the presence of an overstatement status quo than in its absence. Further, mediation analysis explains this behavior by showing that managers perceive CEO pressure to overstate is in their best interest, even while overstating negatively impacts their annual performance evaluation. I also find that when managers are aware of the overstatement status quo, they are more likely to overstate ECE projections when they experience a high as opposed to low system threat, indicating that managers are more likely to maintain the status quo and "dig in their heels" when they experience greater stakeholder dissatisfaction about their company's environmental performance. Finally, results indicate managers believe their CEO's pressure to overstate is an important factor in their environmental projections, further leading them to perceive that doing so is in their best interest. The results suggest that the additive effect of an overstatement status quo and a threat to the social system positively influences managers' perceptions of and willingness to overstate environmental projections, even at their own expense.

This study contributes to management accounting research by applying a new psychology perspective, SJT, to explore managerial decision-making. It advances understanding of the effect of a status quo condition and threats to the status quo on management decisions. Results are consistent with predictions from SJT (Jost et al., 2003a), including that the status quo dominates managers' decisions (Dean et al., 2017). This effect is further exacerbated when a system threat is present (e.g. Jost and Kay, 2005; Jost et al., 2007; Wakslak et al., 2011) in that managers who are aware of stakeholders' negative opinion about their organization are more likely to select the status quo alternative because they "dig in their heels" under the threat to their current normative behavior. The study thus provides evidence on the power of social norm maintenance in organizational settings and the influence that threats to the social system have on managers' interest in maintaining the status quo.

This examination also extends social and environmental accounting research. Cho et al. (2012a) call for more careful understanding of the underlying motivations behind companies' environmental disclosures, and I address this call by demonstrating that these disclosure decisions are cognitively and psychologically affected by the presence of a societal status quo. My results indicate managers' willingness to overstate ECE projections appear to be based on whether such overstatements are part of a social system and whether managers are aware of this social system. Managers aware of an overstatement status quo appear to behave consistently with this normative practice as a way to reduce cognitive unease and to increase satisfaction, and this is exacerbated in the presence of a stakeholder threat. The results thus provide a richer understanding of how managers may be willing to use such disclosures as a legitimating tool (Chen et al., 2014; Cho and Patten, 2010).

My findings also contribute to practice by providing understanding as to why managers make certain environmental and sustainability disclosure decisions. The findings of this study suggest that the accuracy of managers' disclosures is negatively influenced by a known status quo, in my case the company's prior behavior or the industry's environmental disclosure norms, and by a system threat, operationalized as stakeholder demands in this study. Individuals' decisions, however, are dominated by the presence of the status quo and a system threat. Given this understanding, it is essential for practice to develop better measures to ensure managers are not making decisions that align with normative practices, but are evaluating all environmental and sustainability options. These measures need to be put in place to help managers' overcome system justification tendencies in order to improve judgment and decision making. When determining environmental and sustainability disclosures, managers need to carefully evaluate whether their own decisions align with industry practice or with the company's prior practices, potentially reducing normative behavior and increasing positive change in an organization.

The remainder of the paper is organized as follows. Section 2 develops the theory and hypotheses. Section 3 describes the method, design, and procedures. Section 4 discusses the results of the experiment and Section 5 concludes with a discussion of the findings and the limitations of the study.

Theory and Hypotheses

System Justification Theory

SJT is defined as the “process by which existing social arrangements are legitimized, even at the expense of personal and group interest” (Jost and Banaji, 1994). SJT holds that individuals often believe the current social system is legitimate, natural, and perpetual (Jost and Hunyady, 2002) despite the fact that the system has debilitating effects on society and/or their own self-interest (Jost and Banaji, 1994). Some of these debilitating effects include domination, control, powerlessness, and even oppression (e.g. Haines & Jost, 2000; Jost & Banaji, 1994; Jost & Hunyady, 2002). Prior research finds that U.S. citizens were less likely to protest or vote even if these actions contributed to their economic well-being because they feared that protesting and voting were ineffective or dangerous (Jost et al., 2017). Individuals support the status quo at all costs (Jost and Banaji, 1994) because they are socially influenced (Haines and Jost, 2000; Jost and Hunyady, 2002; Raven, 1993) by powerful individuals and companies to continue to support the current social system and its potentially debilitating effects (Van der Toorn et al., 2011).

Individuals’ support of the status quo at all costs stems from their need to reduce uncertainty, manage external threats, increase positive affect[21], and hold shared common interests with others (Jost et al., 2008). SJT argues that individuals believe that they are incapable of taking action against the present social structure because they are made to feel inferior and deserving of their misfortune and oppression (Jost, 1995). For example, individuals who are considered disadvantaged or powerless (e.g. those not in authority) perceive present social arrangements as fair, justified, and inevitable; thus, rationalizing their own current misfortunate

[21] Affect is described as the emotion individuals have about their decisions, such as emotional distress (Napier et al., 2006).

circumstances and accepting the way society is structured (Haines and Jost, 2000). Prior research finds that employees considering themselves powerless in their employment were more likely to view their supervisor as legitimate and maintain inequality in the workplace even when this inequality was explicitly known to the employees (van der Toorn et al., 2015). Even more surprising, male employees were significantly more likely to uphold the status quo and gender inequalities than women, especially when men socially identified with their gender group (Kray et al., 2017).

SJT suggests that individuals follow the current social system by behaving and making decisions that are consistent with its ideologies (Jost and Banaji, 1994). According to Jost and Banaji (1994), a social system represents any normative behavior that is accepted and upheld by the individuals who live within that society. Such a system can have either a broad scope (e.g., gender inequality and climate change) or a narrow scope (e.g., stereotyping or social identification), where ECE overstatement would be considered as the latter. Individuals want to hold favorable opinions about the society in which they live (Jost et al., 2004). For example, individuals making decisions that align with the status quo can reduce their cognitive dissonance. Individuals also justify (Jost et al., 2004) and exaggerate the benefits of the status quo (Jost and Hunyady, 2005) when they identify with a social group (Kray et al., 2017). For example, individuals synchronize their behavior with the current social system and make decisions based on what is already accepted by society (Jost et al., 2004) or consistent with their prior beliefs.

While not explicitly relying on SJT, prior studies evaluate justification relative to a status quo. Status quo dominates decisions in auditing (Messier et al., 2014), psychology (van der

Toorn et al., 2015; Wakslak et al., 2011)[22], information technology (Kim and Kankanhalli, 2009), and environmental and sustainability (Montpetit and Lachapelle, 2017). Status quo dominance is evident in individual decision-making, including managerial choices (Samuelson and Zeckhauser, 1988). When making complex decisions, managers make choices that correspond to the status quo (Gould, 2002; Tortoriello et al., 2011) and focus on the status quo (Dean et al., 2017) to induce individual positive affect. As such, status quo dominance could influence managers' ECE disclosure decisions if the overstatement of ECE projections is already considered a normative practice.

Hypotheses 1 & 2 – The Impact of Status Quo on Decision-Making

Prior research indicates that many managers overstate their ECE projections relative to actual ECE amounts in the following year (Patten, 2005; Chen et al., 2014). This type of behavior is commonly referred to as status quo dependence (e.g. Dean et al. 2017). Managers are reluctant to take on the risk of making decisions that do not align with the status quo because these decisions might result in uncertainty (Haines and Jost, 2000; Jost and Hunyady, 2005), negative affect, and decreased self-esteem (Jost and Hunyady, 2005). By making decisions that align with other companies in the industry, managers reduce their cognitive dissonance and socially identify with those companies.

Managers anchor their decisions on the current status quo (Gärtner, 2018) regardless of the consequences associated with supporting the status quo (Jost and Banaji, 1994). Prior research finds that efficiency-enhancing policies are difficult to implement because individuals have a tendency to reject uncertainty (Fernandez and Rodrik, 2016) and sense a need to reduce

[22] van der Toorn et al., 2015; Wakslak et al., 2011 specifically rely on SJT.

guilt in order to maintain the current status quo (Dean et al., 2017). Anchoring on the status quo can result in selecting riskier options (Dean et al., 2017); more so when managers have an overwhelming amount of choices (Chernev et al., 2015).

Managers face a broad range of alternatives when determining how much ECE to project. Not only are the alternatives significant and overwhelming, the subjectivity and complexity of ECE projections are also large. SJT proposes that managers evaluating multiple and complex alternatives weight the status quo option heavier than the alternatives (Dean et al., 2017). Given the complexity of environmental reporting, managers rely on the status quo option, specifically the decisions of the industry to guide their ECE projections. The current industry practice suggests that managers are manipulating and overstating ECE projections relative to actual ECE amounts in the subsequent year. Therefore, when the status quo is present, managers are likely to anchor on the status quo option and make similar ECE projections to the industry relative to when the status quo is absent. These arguments lead to the first hypothesis:

H1*: Managers will overstate their ECE projections more in the presence of an overstatement status quo than in its absence.*

There are several reasons why managers depend on the status quo. First, managers tend to make decisions based on a priori beliefs about their membership in a group (Alcantud and Laruelle, 2018). Managers are more likely to preserve the status quo when they are associated with a group. Second, managers are commonly aware of the status quo or the default choice. The status quo or default option always receives significant attention and this attention increases as the number of alternatives and complexity of the decision increase (Dean et al., 2017). Third, managers are more likely to select the status quo option to induce positive affect (Jost and

Hunyady, 2005)[23]. Fourth, and the most likely explanation in this study, given the complexity of the decision, managers might evaluate all information received and select the option that is most consistent overall.

SJT states that individuals maintain the status quo even if doing so is against their own best interest. When individuals are overwhelmed with the amount of choices, SJT suggests they will anchor on information that is consistent with the status quo. Therefore, if industry behavior and CEO's expectations suggest an overstatement status quo[24], I expect managers to anchor on this information believing that behaving consistently with the industry and their CEO's expectation is in their own best interest because it satisfies the majority of the parties involved. This reasoning leads to the following mediation prediction:

H2: *When there is an overstatement status quo relative to its absence, managers will overstate their ECE projections because they perceive doing so is in their CEO's and their own best interest.*

Hypotheses 3 & 4 – The Impact of a System Threat on Decision-Making

SJT contends that individuals are more prone toward system justification beliefs when confronted with a system threat (Blasi and Jost, 2006; Jost et al., 2003a; Wakslak et al., 2011), exacerbating the status quo bias. A system threat signifies a conflict with the current social system (e.g. Napier, Mandisodza, Andersen, and Jost, 2006). A system threat can range from stakeholder dissatisfaction to a change in an organization's management. For example, Kay, Jost,

[23] The first three reasons provided represent prior literature's explanations for why managers depend on the status quo. In this study, participants were not primed about their membership to a group, were not aware of the default option, and would not experience positive affect.

[24] Chen et al. (2014) find that companies overstate ECE projections as a potential legitimizing tool to enhance the company's environmental image. It seems plausible, therefore, that the CEOs of these companies potentially pressure managers to use ECE projections as a legitimizing tool.

and Young (2005) examine how a news article threatening and criticizing America's social, economic, and political culture impacts individuals' opinion of powerful and obese individuals' personality traits. Individuals reading a highly critical article about America (i.e. high system threat) evaluated powerful people as intelligent and independent, but unhappy, while perceiving obese individuals as lazy and unsociable, demonstrating how a system threat increases current known biases and stereotypes. Individuals increasing their stereotypes under a system threat is another way of justifying the status quo. Similarly, managers who are dependent on their job and feel a sense of powerlessness are more likely to find their supervisor and organization more legitimate (e.g. van der Toorn et al., 2015). Managers might feel threatened by the loss of their job and, therefore, find their current employment, supervisor, and organization more legitimate. Threats tend to disrupt individuals' sense of comfort and individuals faced with system threats are more likely to support current policies because they provide a sense of familiarity and certainty.

Prior research determined that participants' support of the status quo increases as the level of perceived threat increases (e.g. Kay et al., 2005; Lau, Kay, and Spencer, 2008; Ullrich and Cohrs, 2007). The level of perceived threat forces individuals to acknowledge the imperfections of the current social structure, internalize and take responsibility for those imperfections, and accept a new status quo (Feygina et al., 2010). Acknowledging these imperfections results in increased psychological anxiety (Proudfoot and Kay, 2014). Prior research finds that managers resisted implementation of a new technology (system threat) until it was more than probable of being implemented (e.g. Kim & Kankanhalli, 2009). Managers under a high level of perceived threat are fearful of the uncertainty of committing to a new status quo

(Kim and Kankanhalli, 2009). By maintaining the current status quo, managers are reducing their cognitive dissonance and psychological anxiety.

SJT's discussion on status quo and system threat differ from resistance to change. Prior organizational behavior argues that individuals have a choice in whether to accept or resist potential reforms (e.g. Fosfuri and Rønde, 2009; Krügel and Traub, 2018). However, SJT argues that individuals do not have free will in accepting or resisting the status quo (Jost et al., 2003a, 2007). Rather, individuals tend to unconsciously support the status quo (Jost et al., 2003a, 2007) and therefore do not have free will in making decisions.

Individuals' continuous support under a system threat arises from cognitive factors such as loss aversion (Proudfoot and Kay, 2014). The status quo is typically perceived as a reference point and any deviation from the status quo is perceived as a loss (Kahneman et al., 1991). Managers perceive mergers and acquisitions and industry competition as external threats to the legitimacy of their company and, therefore, deviations from the status quo (Proudfoot and Kay, 2014). Riketta & Landerer (2005) find that a negative company scandal increases managers' need to bolster the company's legitimacy. Given that the scandal represents a deviation from the status quo, managers are more likely to experience psychological anxiety and cognitive dissonance and less likely to support the deviation. Therefore, the level of perceived threat stimulates managers' defensive psychological reaction to further support the status quo (Proudfoot and Kay, 2014).

SJT states a system threat represents any potential change or threat to the current social system (Wakslak et al., 2011). A system threat is anything that causes individuals to question their current behavior, including stakeholder dissatisfaction. Managers receive demands from multiple stakeholders to improve environmental performance. If managers learn that stakeholders are dissatisfied with the amount of environmental spending, their current normative behavior might be threatened leading them to "dig in their heels". Managers who "dig in their heels" are more likely to continue overstating their environmental projections, using the disclosure as a legitimizing tool to enhance their environmental image. Driven by an increased need to reduce psychological anxiety and cognitive dissonance, managers are more likely to support the present status quo when this perceived level of threat increases. Thus, the following hypothesis is proposed:

H3*: In the presence of an overstatement status quo, managers who experience a high system threat will overstate their ECE projections more than managers who experience a low system threat.*

Managers experiencing greater threats are also more likely to make decisions consistent with the industry with the potential hope of mitigating the threat. According to legitimacy theory (Deegan, 2006; Deephouse and Suchman 1995), companies under environmental scrutiny are more likely to overstate ECE projections in an attempt to improve their environmental image (Chen et al. 2014). Managers experiencing a high system threat are more likely to believe their CEO's pressure to overstate ECE projections in order to respond to stakeholder pressure is an important factor in their projection decision. Further, they are more inclined to believe that doing so is in their CEO's and their own best interest, even though it may negatively impact their annual performance evaluation from the Board of Directors[25]. When there is an overstatement status quo and an exacerbating system threat, managers are more likely to view CEO pressure to overstate environmental projections as an important factor in their environmental projection,

[25] This study examines managers' one-period decisions. I argue managers may be willing to align their interests with the industry and CEO even though doing so harms their short term interest (i.e. annual performance review by the Board of Directors), because they believe long-term impacts are more important.

aligning their own interest with those of the CEO, even at their own expense. Given the additive negative effect of an overstatement status quo and a high system threat, managers are more likely to view CEO pressure to overstate as legitimate and more likely to believe doing so is in their best interest. This leads to the following mediation prediction:

H4: *In the presence of an overstatement status quo and high relative to low system threat, managers will overstate their ECE projections because of CEO pressure to overstate and, therefore, will perceive doing so is in their CEO's and their own best interest.*

Methods

Participants

Responses are gathered from managers via Turk Prime. Participants were required to answer several screening questions and to be past or current managers responsible for a company's operations. They answered several additional questions about their company's involvement in environmental projects and their comfort evaluating a company's performance by analyzing its annual reports and 10K reports. A total of 30 percent of the participants (57 participants) agreed that they felt comfortable evaluating a company's financial or environmental performance while 39 percent of the participants (74 participants) somewhat agreed they felt comfortable evaluating a company's financial or environmental performance. Review questions were presented throughout the experiment. All participants who successfully passed the screening questions and passed 67% (2 of 3) of the review questions[26] were compensated a fixed

[26] Review questions evaluated participants' understanding of the range of possible ECE spending in the following year, whether the Board of Directors weights their environmental projections as a factor in their annual performance review (i.e. lower value symbolizes a more accurate valuation), and the amount the CEO expects to be projected even though it will harm their annual performance review.

amount of $2.00. A total final sample consisted of 192 participants, of which 126 were male and 66 were female. The average participant age was 37 years.

Experimental Method and Design

To test the hypotheses, this study employed two 1 X 2 between-subjects experiments with one overlapping cell. The first independent variable, *STATUS QUO*, was manipulated at two levels (status quo is *PRESENT* vs. *ABSENT*). In the *PRESENT* status quo condition, participants were informed that all of their competitors have previously overstated their ECE projections. In the condition where status quo is *ABSENT*, participants were informed that not all competitors overstated their ECE projections. Therefore, in this condition, the status quo is not clear. The second independent variable, *THREAT*, was manipulated as either a *HIGH* or *LOW* threat to environmental reporting. A system threat was manipulated by providing participants information about society's current satisfaction with companies' environmental outreach. Participants in the high (low) system threat condition learned that society was dissatisfied (indifferent) with companies in the oil and gas industry's environmental outreach (see Appendix A and B for *STAUS QU*O and *THREAT* conditions).

The experimental materials were distributed to the participants via Qualtrics on Turk Prime. Participants were instructed to assume the role of a manager at a hypothetical oil and gas company. They were informed that their task was to evaluate only the information given to project ECE for the following year. All participants were informed of ABC Company's prior ECE projections and actual ECE spending, indicating an overstatement. Given the uncertainty of ECE projections, participants were informed by their team that actual ECE spending for the next year could range from $600 million to $1 billion, representing a wide range of possibilities.

Participants were told their annual performance evaluation by the Board of Directors heavily weighted toward the accuracy of their ECE projections relative to actual amounts. Thus, projecting ECE amounts closer to actual spending was expected to improve participants' annual performance evaluation. All participants made decisions under this same performance evaluation pressure which allows me to evaluate the strength of managers' need to maintain the status quo over and above their preference for a positive performance evaluation. Next, participants received advice from the CEO to select an ECE projection near the high-end case scenario of $1 billion. Then, participants were randomly assigned to conditions where they received information on the current disclosures of future ECEs by other firms in their industry. These disclosures were consistent with either an overstatement status quo or no obvious status quo. Next, participants received a news article passed on by their CEO on environmental reporting, indicating stakeholders' environmental demands from firms in the oil and gas industry. The news article depicted either a low or high system threat. Participants then chose the amount of ECE to disclose and completed a post experimental and demographics questionnaire. [27]

Dependent Variables

I measure managers' ECE projections using two different methods. First, before indicating the amount of their *ECE* projection, participants were asked whether they will overstate ECEs in the following year (Yes/No). This dependent variable, labeled *OVERSTATE*, reflects managers' willingness to overstate ECE amounts.

Second, participants made ECE projections (labeled *ECE*) for 2018 using a sliding scale where they indicated dollar projections in amounts that could range between $600 million and $1

[27] Demographic questions were examined for potential covariates and none were identified ($p<0.05$)

billion. Higher environmental capital projections represent greater support for the (overstatement) status quo.

Mediator Variables

Participants answered several post-experimental questions (PEQs). The first PEQ (*Alignment of Interest*) asked the following: "Projecting higher ECEs to satisfy my CEO was in my best interest." *Alignment of Interest* examines whether individuals believe maintaining the status quo by satisfying their CEO (e.g. overstating ECE projections) is in their best interest when knowingly harming their annual performance reviews. Participants responded on a 7-point Likert scale with "Strongly Disagree" and "Strongly Agree" endpoints. The second PEQ (*Importance of CEO Interest*) asked the participants to indicate their degree of agreement with the following statement: "The CEO's interest in improving ABC Company's environmental legitimacy with current and future shareholders was an important factor in my environmental capital spending projection." Participants also responded on a 7-point Likert scale with "Strongly Disagree" and "Strongly Agree" endpoints.

Results

Manipulation Checks

To ensure the participants recognized that overstatement was (or was not) the status quo, they indicated their degree of agreement with the following question on a 7-point Likert scale with endpoints of "Strongly Disagree" and "Strongly Agree": "<u>All of</u> ABC Company's main competitors overstated their environmental capital projections in their 10K reports relative to their actual spending on these projects in the following year." As expected, participants in the

PRESENT status quo condition agreed that all of ABC Company's main competitors overstated their environmental projections in their 10K reports relative to their actual spending on these projects in the following year (means = 6.08, std. dev= 1.27) statistically significantly more than the *ABSENT* condition (means= 2.66, std. dev = 1.80, mean difference = -3.42) (t= -12.46, $p<0.001$). To capture participants' understanding of the presence of a high versus low system threat, they indicated their degree of agreement with the following question on a 7-point Likert scale with endpoints "Strongly Disagree" and "Strongly Agree": "According to the news article provided by the CEO, survey respondents demand more investment in environmental projects by companies in the oil and gas industry." Participants in the *HIGH* system threat condition agreed that survey respondents demand more investment in environmental projects by companies in the oil and gas (means = 6.33, std. dev = 1.23) statistically significantly more than the *LOW* condition (means = 2.80, std. dev = 1.88, mean difference = -3.53) (t = -12.61, $p < 0.001$).

Descriptive Statistics

Descriptive statistics for *OVERSTATE* are presented in Table 3, Panel A. Managers in all conditions responded to this measure first. Results indicate that participants' willingness to overstate increases in the presence of a status quo (66.2%) relative to its absence (50%) and is further exacerbated when there is a high (93.7%) relative to a low system threat (66.2%). Descriptive statistics for *ECE* projections are presented in Table 3, Panel B. Results indicate that the mean [std. dev] *ECE* in the *ABSENT* status quo and *LOW* system threat is $823.02 [$97.52] million and $854.86 [$104.29] million in the *PRESENT* status quo and *LOW* system threat.

Table 3, Panel C shows that the mean *Alignment of Interest* in the *PRESENT* status quo condition was 4.95 (std. dev. = 1.70) while in the *ABSENT* status quo condition had a mean of

4.25 (std. dev. = 1.67). *Alignment of Interest* in the *HIGH* relative to the *LOW* condition was 5.75 (std. dev. = 1.43) and 4.95 (std. dev. = 1.70), respectively, indicating that as the status quo becomes more prominent with an additive system threat, the more likely managers believe their interest coincides with the CEO's interest. Participants also responded to a second PEQ regarding their perceptions of the CEO's interest in improving the company's environmental legitimacy. The results show that the mean in the *HIGH* condition was 5.75 (std. dev. = 1.54) while the mean in the *LOW* condition was 4.98 (std. dev. = 1.62).

Hypothesis 1

Hypothesis 1 predicts that managers will be more likely to overstate ECE projections in the presence of an overstatement status quo than in its absence. Results of a Chi-square test for differences in proportion are presented in Table 4, Panel A. Results indicate that managers' willingness to *OVERSTATE* is higher in the presence of an overstatement status quo than in its absence ($\chi_{(1)}^2 = 3.46$, p=0.06). These results are further supported by comparing the mean differences in *ECE* projections between the status quo present and absent conditions. Table 4, Panel B presents these comparisons. Results indicate that managers' willingness to intentionally overstate environmental projections is higher in the presence of an overstatement status quo than in its absence ($t(127) = -1.79$, p = 0.04, one-tailed). Thus, H1 is supported.

Hypothesis 2

Hypothesis 2 posits that managers will overstate ECE projections more when status quo is present relative to absent because they believe doing so is in their CEO's and their own best interest. Hypothesis 2 is tested by using two conditions (status quo *PRESENT* versus *ABSENT*), where the presence of the system threat is constant. Table 5 presents independent t-test results for managers' *Alignment of Interest* decisions, showing that managers are more likely to overstate ECE projections because they believe doing so is in their CEO's and their own interest more when status quo is present relative to being absent ($t = -2.37$, $p = 0.01$, one-tailed). I conducted mediation analysis to investigate how much of the effect of the status quo *PRESENT* and *ABSENT* condition on ECE projections is explained through participants' perceptions of the CEO's and their own interest. Figure 2 presents the results of the mediation analysis. Consistent with my expectations about managers' psychological motivations and using Preacher and Hayes' (2008) bias-corrected bootstrapping method, I find that *Alignment of Interest* fully mediates the effect of *STATUS QUO* (*ABSENT* versus *PRESENT*) on *ECE*, keeping *THREAT* constant. Thus, H2 is supported.

Hypothesis 3

Hypothesis 3 posits that managers are more likely to overstate ECE projections when managers in the status quo present condition experience a high versus a low threat to the system. I test hypothesis 3 using the two conditions (*HIGH* versus *LOW* system threat), where the presence of the status quo is constant. Table 6, Panel A presents the results for managers' *OVERSTATE* decisions, showing that managers are more likely to overstate environmental projections when there is a high relative to a low system threat ($\chi_{(1)}^2 = 29.78$, $p<0.001$). Results presented in Table 6, Panel B, indicate that in the presence of the status quo, managers select higher ECE projections in the presence of a high system threat ($t(123) = -2.61$, $p = 0.005$, one-tailed). The results support H3 and indicate that managers' tendencies to overstate environmental capital projections are significantly greater when there is a high system threat.

Hypothesis 4

Hypothesis 4 posits that managers are more likely to overstate ECE projections when there is a high relative to low system threat because they find the CEO's pressure to overstate as an important factor in their disclosure decision, leading managers to align their own interests with those of the CEO. I conducted an independent t-test to test this prediction. Table 7 shows that managers are more likely to perceive the CEO pressure to overstate as an important factor in their environmental decision when there is a high relative to a low system threat ($t = 2.72$, $p = 0.004$, one-tailed). Managers also believe the CEO's interest aligns with their own interest, leading them to overstate ECE projections more when there is a high relative to a low system threat ($t = -2.86$, $p = 0.003$, one-tailed). I again use mediation analysis following Preacher & Hayes (2008) to test whether the effect of system threat on ECE projections is explained by *Importance of CEO Interest* and *Alignment of Interest*. Figure 3 summarizes the analysis of *THREAT* (*LOW* versus *HIGH*), and it shows that *Alignment of Interest* fully mediates the effect of *THREAT* on *ECE*. I further find that the effect of *THREAT* on *ECE* is fully mediated through *Importance of CEO Interest* and *Alignment of Interest*. Figure 3 presents these results and has several implications. First, managers' ECE projections are driven by the presence of a status quo and the level of a system threat. Second, the additive effect of a high system threat increases managers' perceptions of CEO pressure to overstate environmental projections. When there is a high system threat, managers are more likely to view CEO pressure to overstate environmental projections as an important factor in their environmental projections and further believe that doing so is in their own best interest while negatively impacting their annual evaluation by the Board of Directors. In sum, the presence of a status quo and the level of a threat on the social system are driving managers to perceive CEO's demand to overstate as an important factor in their environmental projection decision, and further, to believe that overstating these environmental projections is in their own benefit when this is not necessarily the case.

Discussion

In this study, I use SJT to better understand why managers choose to overstate ECE. The experiment is situated in a unique setting where managers must consider relevant pieces of information to project future environmental spending. My empirical results are consistent with SJT and suggest that in the short-term, managers are more likely to overstate in the presence of an overstatement status quo than in its absence. Findings also indicate that managers are more likely to overstate environmental projections when there is an overstatement status quo and a high relative to a low system threat. The results suggest that managers use environmental projections as a legitimizing tool to enhance their company's environmental image as a means to behave consistently with other companies, and this is exacerbated when managers feel threated by stakeholder dissatisfaction. SJT explains this latter finding as managers behaving consistently with other companies in the presence of a system threat are potentially reducing their cognitive dissonance while increasing their positive satisfaction. Managers' use of projections as a legitimizing tool can also explain why managers perceive overstating environmental projections is in their own best interest, providing additional support for why we might be seeing this phenomenon in the real world.

Post-experimental questions about managers' psychological motivations indicate that managers believe that projecting high environmental projections is in their best interest. Specifically, the presence of a status quo increases managers' beliefs that projecting large environmental projections is in their best interest. Further, managers are more likely to perceive the CEO's pressure to improve the company's environmental image as an important factor in their disclosure decision when there is a high system threat opposed to a low system threat, further exacerbating managers' ECE overstatement amounts. When there is a high system threat, managers find their CEO's pressure to improve the company's environmental decision as an important factor in their environmental projection decisions. These results suggest users of ECE disclosures should use caution, as managers might be using projections as a legitimizing tool to divert external threats. The results provide evidence of managers' short-term disclosure decisions, indicating that these disclosures might not be credible and embody "cheap talk" (Farrell and Rabin, 1996).

This paper contributes to management accounting research by applying SJT, a psychology theory, and investigating its ability to explain management decisions. SJT postulates, and the experimental evidence supports, that managers behave consistently with social norms existing in the industry in which the managers operate. Further, managers impacted by threats to these social norms are more likely to "dig in their heels." The results of the study provide evidence of the effects of social norms and threats to those social norms on managers' decisions.

My findings also contribute to the social and environmental accounting and disclosure literature (Cho et al., 2012b, 2015, 2014, 2010; Milne and Patten, 2002; Patten 2002) by identifying factors driving managers to make certain environmental disclosure decisions. Cho et al. (2012a) call for the careful understanding of the underlying motivations of these environmental disclosures, and this study provides evidence of two potential social factors affecting managers' willingness to overstate ECE projections: status quo and a threat to the social system.

The results of this analysis present several avenues for future research. First, this study holds the managers' interest constant across conditions reflected by the Board of Directors' performance evaluations of the managers' environmental projections. To induce a more salient effect of manager interest, future research could utilize an alternative economic incentive whereby managers are financially incentivized to report more honestly. Second, this study examines managers' environmental decisions at one point in time while prior research indicates overstatement is repeated over time. Future research could examine whether managers' environmental disclosure decisions are impacted over time if properly financially incentivized.

In sum, the results of this investigation indicate that social drivers induce managers to overstate ECE projections and this effect is explained by managers' legitimacy perceptions of their CEO's pressure to improve the company's environmental image. These legitimacy perceptions appear to inhibit managers from acting in their own best interest, creating potentially unintended consequences for managers, shareholders, and users of voluntary environmental disclosures.

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GENERAL CONCLUSION

This dissertation presents two studies. The first study explores a broad relevant psychology theory, system justification theory (SJT), and whether the application of this theory in the behavioral accounting setting can provide richer understanding of emerging complex accounting research questions. The second study examines whether SJT's facets, a status quo and a system threat, affect managerial environmental disclosure decisions, a current complex managerial accounting research question.

The first study utilizes a literature review to identify prior behavioral accounting and CSR research that applies cognitive dissonance or social identity theory. The study reviews studies published in the last thirty years in the accounting journals *Accounting, Auditing, and Accountability Journal*, *Accounting, Organizations and Society*, *Contemporary Accounting Research, Journal of Accounting Research, Journal of Business Ethics, and The Accounting Review*. The study then explores SJT and the implications of applying this theory into behavioral accounting and CSR research.

The results from the first study show that the commonly used and discrete theoretical motivations – cognitive dissonance and social identity theory – limit the generalizability of prior findings. SJT is grounded in, but also diverges from cognitive dissonance, social identity, social dominance, and belief in a just world. Given SJT's larger and broader theoretical perspective, its application into complex behavioral accounting and CSR research appears warranted. Study one's review further suggests that applying SJT's propositions to behavioral accounting and CSR research can provide greater insight into complex topics that cannot be investigated through the utilization of one, or any combination of the four foundational theories.

The implications from study one contribute to behavioral accounting and CSR research by demonstrating the need to incorporate more recent psychological theories that can address complex accounting research questions. The study further highlights the need for researchers to consider other theoretical perspectives such as SJT that could provide greater insight into emerging complicated behavioral accounting and CSR topics.

The second study applies SJT to address one complex behavioral accounting research question relating to managers' propensity to disclose overstated environmental capital expenditure (ECE) projections. Patten (2005) finds that managers tend to overstate ECE projections relative to actual spending in the following year. SJT suggests that individuals behave consistently with social norms (i.e., status quo) and are more likely to support the status quo in the presence of a system threat (Jost 1995; Jost and Banaji 1994; Jost et al., 2008). Individuals believe social norms (i.e., status quo) are legitimate and natural (Jost and Hunyady, 2002) and maintained by individuals' acceptance and conformity to them (Haines and Jost, 2000; Jost, 1995; Jost and Hunyady, 2002). Therefore, the study predicts that managers will be more likely to overstate ECE projections in the presence of an overstatement status quo. Further, in the presence of an overstatement status quo, managers are expected to be even more likely to overstate ECE projections in the presence of a high system threat.

Utilizing experimental methods, the second study manipulates status quo as present (the company's competitors overstate ECE projections relative to actual spending) or absent (only a few of the company's competitors overstate ECE projections relative to actual spending). Participants were randomly placed into one of these conditions and then received one of the following two news articles. This news article represented the second independent variable, system threat, and was manipulated as either high (stakeholders were disappointed with companies' environmental activites) or low (stakeholders were indifferent with companies' environmental activities). Participants answered several questions relating to their ECE projection decisions.

The results of the second study show that managers overstate ECE projections more when an overstatement status quo is present. This finding suggests that managers are more likely to support the status quo even if doing so is against their best interest. The results also show that managers are even more likely to overstate ECE projections when there is a high system threat. When the overstatement status quo is threatened, managers are more likely to find the CEO's pressure to overstate to improve the company's environmental legitimacy as an important factor in their ECE disclosure decision. Managers "dig in their heels" and further support and maintain the status quo, apparently believing that doing so is in their best interest.

The results of the second study contribute to managerial and environmental accounting research. Cho et al. (2012) call for an in-depth and careful analysis of managers' psychological motivations regarding their environmental disclosure decisions. The second study addresses this call by providing evidence of managers' psychological and cognitive motivations driving them to overstate and disclose ECE projections. Specifically, the results suggest that managers' environmental disclosure decisions are impacted by the presence of a status quo and further, by a threat to the social system. The results provide insight into why managers might use ECE disclosures as a legitimating tool (Chen et al., 2014).

In conjunction, the two studies in this dissertation respond to a call by Cho et al. 2012 to review broad and relevant psychological perspectives that could address emerging complex behavioral accounting and CSR research. This dissertation provides one psychological perspective, SJT, which is applied to one complex accounting topic relating to managers' psychological motivations for overstating ECE projections relative to actual spending. The application of a broader theory, SJT, provides greater insight into understanding managers' psychological and cognitive motivations for overstating ECE projections. Collectively, this dissertation demonstrates the benefit of considering broader and more recent psychological theories to address complex behavioral accounting and CSR research questions. Further, it provides new understanding of individual decision-making.

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APPENDIX A: STUDY 1 FIGURES

(H1) People will rationalize the status quo by judging likely events to be more desirable than unlikely events, (a) even in the absence of personal responsibility, (b) whether those events are initially defined as attractive or unattractive, and (c) especially when motivational involvement is high rather than low.
(H2) People will use stereotypes to rationalize social and economic status differences between groups, so that the same target group will be stereotyped differently depending on whether it is perceived to be high or low in status.
(H3) People will defend and justify the social system in response to threat by using stereotypes to differentiate between high- and low-status groups to a greater degree.
(H4) Providing explanations (or pseudo-explanations) for status or power differences between groups will (a) increase the use of stereotypes to rationalize differences, and (b) lead members of disadvantaged groups to express more positive (relative to negative) affect.
(H5) Over time, members of disadvantaged groups will misremember explanations for their powerlessness as being more legitimate than they actually were.
(H6) Members of low-status groups will exhibit outgroup favouritism even on (a) open-ended, non-reactive, qualitative measures, and (b) implicit, nonconscious cognitive, affective, and behavioural measures.
(H7) As the perceived legitimacy of the system increases, (a) members of high- status groups will exhibit increased ingroup favoritism, and (b) members of low status groups will exhibit increased outgroup favoritism.
(H8) As system justification tendencies increase, (a) members of high-status groups will exhibit increased ingroup favouritism, and (b) members of low-status groups will exhibit increased outgroup favouritism.
(H9) Members of disadvantaged groups (not just women) will exhibit a depressed sense of entitlement relative to members of advantaged groups, even in explicitly egalitarian environments.
(H10) Members of disadvantaged groups will be more likely to exhibit depressed entitlement (relative to members of advantaged groups) for past work that has already been completed than for future work that has not yet been completed.
(H11) Members of low-status groups will exhibit greater ambivalence towards their own group than will members of high-status groups.
(H12) Members of low-status groups will exhibit increased ambivalence towards their own group as system justification is increased.
(H13) Members of high-status groups will exhibit decreased ambivalence towards their own group as system justification is increased.
(H14) System justification will be associated with (a) increased self-esteem for members of advantaged groups, and (b) decreased self-esteem for members of disadvantaged groups.
(H15) System justification will be associated with (a) decreased depression for members of advantaged groups, and (b) increased depression for members of disadvantaged groups.
(H16) System justification will be associated with (a) decreased neuroticism for members of advantaged groups, and (b) increased neuroticism for members of disadvantaged groups.
(H17) When individual and group needs and interests are low in salience or strength, members of disadvantaged groups will provide stronger support for the social system and its authorities than will members of advantaged groups, in so far as the former will have a stronger need than the latter to reduce ideological dissonance through system justification.

(H18) System justification levels will be higher in societies in which social and economic inequality is more extreme rather than less extreme
(H19) Exposure to complementary stereotype exemplars (in which members of high and low status groups are seen as having opposite, offsetting strengths and weaknesses) will increase system justification, in comparison to non-complementary stereotype exemplars.
(H20) Exposure to benevolent and complementary gender stereotypes (in which women are seen as communal but not agentic) will increase system justification, especially among women, in comparison with neutral or non-complementary stereotypes.

Figure 1- System Justification Theory's Propositions

APPENDIX B: STUDY 1 TABLES

Table 1- Behavioral Accounting Research using Cognitive Dissonance Theory

Panel A: Research on Cognitive Dissonance Theory

Study	**Journal**	**Accounting Area**	**Accounting Topic**	**Research Question**	**Primary Contribution**
Adams and Whelan (2009)	AAAJ	Corporate Social Responsibility	Corporate social disclosure	How can we make changes to organizations' CSR disclosures in order to enhance accountability?	Change in CSR reporting can occur if stakeholders create cognitive dissonance such as threating organizations' profitability.
Anderson, Chang, Cheng, and Phua (2017)	CAR	Management	Management control	Can information sharing behavior and autonomy to select a supplier influence a buyer manager's trust and investment in management control and collaboration?	Difficult decisions increase cognitive dissonance and forces individuals to support their prior decisions and beliefs. A buyer manager with autonomy to select a supplier has greater initial trust because it forces the manager to only focus on the advantages of their chosen decision while examining all the negatives of the rejected option.
Church, Hannan, Kuang (2014)	CAR	Management	Opportunistic Behavior in Reporting	Does discretion in information acquisition affect managerial reporting?	Managers are more likely to report opportunistically when they have discretion in information acquisition relative to no discretion. Managers want to maintain a positive self-image of themselves (i.e. reduce cognitive dissonance) and when they have discretion over information, managers have an easier time maintaining the lie that they are being honest and forthcoming about their reporting.

Hobson, Mayew, Peecher, and Venkatachalam (2017)	JAR	Auditing	CEO Deception	Can instructions on cognitive dissonance improve auditors' detection of CEO deception?	Auditors are less likely to detect deception for fraud companies than non-fraud companies, unless they receive instructions about cognitive dissonance in CEO narratives. Deceivers experience negative affect from cognitive dissonance and the narratives show dissonance markers in the CEO's speech.
Hobson, Mayew, and Venkatachalam (2012)	JAR	Financial	Financial Misreporting	Can vocal markers of cognitive dissonance aid in financial misreporting detection?	Vocal dissonance markets increase are associated with the likelihood of irregularity restatements and detecting financial misreporting. Cognitive dissonance is described as a state of psychological arousal and discomfort occurring when an individual takes actions that contrast with a belief, such as cheating while believing oneself to be honest. Cognitive dissonance is measured using an automated vocal emotion analysis software.
Jermias (2001)	AOS	Management	Commitment and resistance to change; reduction of cognitive dissonance	Will commitment to a course of action cause individuals to be insensitive to the benefits of alternative approaches?	Understanding people's motivation for resist change helps understand why new initiatives are not implemented. Employees resist change when they are committed to their favored costing system and further resist change even when receiving negative feedback as a means to reduce cognitive dissonance.
Merchant (1985)	AOS	Management	Budgetary Slack	What affects managers' propensities to detect and create budgetary slack?	Managers minimize their cognitive dissonance by reducing their propensity to create budgetary slack when technology is available.

Mia (1988)	AOS	Management	Managerial Attitude	Do managerial attitude and motivations explain budget participation and performance?	Employees with a positive attitude or motivation might develop cognitive dissonance if their performance is below the expected benchmark, leading them to participate more in budgeting.
Rennekamp, Rupar, and Seybert (2015)	TAR	Financial	Asset Impairment and management responsibility	Will the reversibility of the accounting effect of asset impairments affect managers' investment decisions when they feel responsible for their asset impairment decisions?	Managers who feel responsible for their decision invest more in the impaired division when the accounting effect of the impairment is reversible than irreversible. Managers who do not feel responsible for their asset decisions do not differ in their investment in the impaired division when an asset is reversible of irreversible.
Thornock (2016)	AOS	Management	Performance Feedback	Can the timing of performance feedback impact learning and employee performance?	Employees experience greater cognitive dissonance (i.e. psychological cost) when given feedback before the implementation of an incorrect decision because they have to proceed with the decision choice as if it was correct and will avoid examining alternative choices. Employees perform better when feedback is given immediately after the implementation of an incorrect decision because they experience less cognitive dissonance and effort required to accept the incorrect decision.

Panel B: CSR and Ethics Research on Cognitive Dissonance Theory

Andiappan and Dufour (2017)	JBE	Corporate Social Responsibility	Dissonance Resolution	Do managers experience dissonance from enacting the harm-doing event and externalize the responsibility onto the organization or harm-doing target?	Cognitive dissonance occurs when individuals suffer from inconsistencies between their cognitions and behaviors. Individuals who perform a harm-doing event while believing the event is unnecessary experience cognitive dissonance. Individuals will attribute or externalize the responsibility of the harm-doing event onto their organization of the target.

Bodur, Duval, and Grohmann (2015)	JBE	Corporate Social Responsibility	Sustainability	Can advertisements with a prediction request influence consumers' preferences for environmentally sustainable products?	Advertisements increase consumers' cognitive dissonance because it threatens their prior beliefs about the products purchased. Consumers want to re-establish consistency and reduce dissonance. Advertisements with a prediction increases consumers' preference for sustainable products while minimizing dissonance.
Bonner, Greenbaum, and Mayer (2016)	JBE	Corporate Social Responsibility	Employee Behavior and Moral Disengagement	Why is the relationship between supervisor moral disengagement and employee perceptions of ethical leadership?	Unethical leaders will morally disengage and reduce their cognitive dissonance by rationalizing unethical behaviors.
Lamm, Tosti-Kharas, and King (2015)	JBE	Corporate Social Responsibility	Sustainability	What factors are associated with organizational citizenship behaviors toward the environment (e.g. voluntary behaviors)?	Employees who experience dissonance will want to minimize it by justifying their private actions are in alignment with their workplace expectations. Employees working for an organization that values sustainability are more likely to incorporate the same values at home and experience greater job satisfaction.
Thomas and Lamm (2012)	JBE	Corporate Social Responsibility	Sustainability	Is there a conceptual model to inform readers about the legitimacy of sustainability?	Builds a theoretical model of three types of attitudes and norms
Panel C: Research Indirectly using or applying Cognitive Dissonance Theory					
Georgiou (2018)	CAR	Financial	Fair Value Accounting	How do investors and analysts evaluate the usefulness of fair values?	Does not reference cognitive dissonance theory Users and standard setters evaluating fair values disagree about what information counts, increasing dissonance. Users and standard setters hold different perceptions about how to define and evaluate what is value-relevant, leading to differing evaluations of fair values.

Hope and Wang (2018)	AOS	Management	Management Ethics	Can managers' truthfulness or deceptiveness influence how investors perceive big baths (i.e. negative discretionary accruals, one-time large write-offs, asset impairments)?	Information asymmetry is significantly higher when deceptive CEOs relative to less deceptive CEOs take big baths. Applying a prior study's application of cognitive dissonance, investors are more likely to spot dissonance in CEOs remarks.
Rennekamp, Rupar, and Seybert (2018)	SSRN	Management	Managerial Deception	Can unconscious thinking enabled by a decision tool improve individuals' deception detection of management lies?	Individuals are more likely to detect fraud when they experience a deceptive act than when no deceptive act occurs.

*The literature search for cognitive dissoanance theory was carried out manually by searching through the following journals: Accounting, Auditing , and Accountability Journal. Accounting, Organizations and Society, Contemporary Accounting Research, Journal of Accounting Research, Journal of Business Ethics, and The Accounting Review. A manual search on Science Direct was then followed up to ensure all relevant articles were included in this review. This literature review encompassed any research that contained, applied, or reference cognitive dissoanance theory in 1988 to 2018.

Table 2 –Behavioral Accounting Research using Social Identity Theory

Panel A: Research on Social Identity Theory

Study	**Journal**	**Accounting Area**	**Accounting Topic**	**Research Question**	**Primary Contribution**
Anderson-Gough, Grey, and Robson (2001)	AOS	Accounting	Professional Identity	Can socialization of trainees into groups of time-consciousness and temporal visioning build professional identity?	Accounting firms' practices and time-orientation promote organization identity. (time-consciousness, temporal visioning, and politics of time) Organizational socialization develops employee professional identity.
Bauer (2015)	TAR	Auditing	Professional Identity	Can improving an auditor's professional identity promote auditor independence?	Professional identity can improve short-term auditor independence. Auditors with a stronger client identity agree more with the client and assess a higher likelihood that the client's business will continue to run. This likelihood is reduced, however, when professional identity is improved.
Cohen, Gaynor, Krishnamoorthy, and Wright (2017)	Working paper	Auditing	Audit Committee Ties	Do social and professional ties affect perceptions of audit committee competence and effectiveness?	Professional or social ties and industry expertise affect assessments of audit committee independence and competence. Investors assess audit committees with no ties and industry expertise (social ties and no industry expertise) as the most (least) effective and competent, resulting in the highest (lowest) likelihood of investing. Investors assess high committee independence when there are professional ties than social ties.

Free and Murphy (2015)	CAR	Auditing	Social Ties	Do social ties promote individuals to co-offend in fraud?	Social bonds and ties between agents makes a fraud a potential opportunity. These social bonds are described as three archetypes: individual serving functional bonds, organization-serving functional bond, and affective bonds.
He, Pittman, Rui, and Wu (2017)	TAR	Auditing	Social Ties	Do social ties between engagement auditors and the audit committee affect audit outcomes?	Social ties between engagement auditors and audit committee members impair audit quality and increase audit fees
Heinle, Hofmann, and Kunz (2012)	TAR	Managerial	Organizational identity	How does organizational identity impact organizational standards, incentives, and performance-measure characteristics?	Managers who identify with their organization receive stronger incentives and greater performance evaluation reports. These managers can also reduce their effort in the short-term.
Iyer, Mbamber, and Barefield (1997)	AOS	Accounting	Alumni Identity	Can individuals' identification with a former accounting firm impact firm value?	Alumni identification with a former accounting firm impacts the likelihood of an alum sending the former firm business. Accounting policies while the alum is currently associated with the firm impacts their alumni identification with the firm.
Rose, Rose, Norman, and Mazza (2014)	TAR	Financial	Friendship Ties	Will directors who have friendship ties with the CEO manage earnings to benefit the CEO in the short term while potentially sacrificing the welfare of the company in the long term? Will public disclosure of friendship ties mitigate or exacerbate such behavior, and influence investors' perceptions of director decisions?	Directors with friendship ties with the CEO were more likely to approve reductions to research and development expenses, causing earnings to rise enough to meet CEO's minimum bonus target more than when there are no friendship ties. Disclosing friendship ties resulted in even greater reductions in R&D expenses and higher CEO bonuses than not disclosing friendship ties. Shareholders were more likely to agree with directors' decisions to approve cuts to R&D when friendship ties were disclosed.

Towry (2003)	TAR	Managerial	Social Ties and Team Identity	Can the level of team identity impact the effectiveness of different incentive systems? (i.e. vertical vs. horizontal)	A strong team identity improves coordination. However, a vertical incentive system's effectiveness is reduced when there is strong team identity. Organizations should use horizontal incentive systems when there is a strong team identity.
Panel B: CSR and Ethics Research on Social Identity Theory					
He and Li (2011)	JBE	Corporate Social Responsibility	Brand Identification	Can service quality and CSR engagement impact brand identification?	CSR and service quality impact how well individuals identify with a brand and customer satisfactions. The more an organization engages in CSR and service quality, the more likely customers are to identify with that specific product.
Hoitash (2011)	JBE	Corporate Social Responsibility	Social Ties	Do social ties affect the strength of a company's internal control and executive compensation?	Companies that have board member ties to management exhibit lower likelihood of material weaknesses in internal controls and financial restatements. Social ties between management and independent board members are associated with higher management compensation and therefore directors should disqualify themselves from serving on compensation committees.
Kaplan, Samuels, Cohen (2015)	JBE	Corporate Social Responsibility	Social Ties	Do CEO social ties affect nonprofessional investors' pay judgment decisions?	CEO's social ties to members of the executive compensation committee favorably impacts how the CEO is compensated but investors are less likely to resolve any compensation issues unless the CEO has a positive reputation.
Marin and Ruiz (2007)	JBE	Corporate Social Responsibility	Organizational Identity	What factors are associated with an organization's identity that make it appealing to individuals?	Corporate social responsibility contributions increase an organization's identity attractiveness to consumers.
Marin, Ruiz, Rubio (2009)	JBE	Corporate Social Responsibility	Organizational Identity	Do stakeholders reward organizations that have adopted CSR practices?	Consumers are more likely to identify and be loyal to organizations that engage in CSR initiatives.

Turker (2009)	JBE	Corporate Social Responsibility	Organizational Identity	Does CSR impact employee's organizational commitment and identity?	Employees' commitment to an organization increases when organizations are socially responsible. The prestige of an organization impacts the self-esteem and identity of the employees.
Panel C: Research Indirectly using or applying Social Identity Theory					
Bills, Hayne, and Stein (2018)	TAR	Auditing	Firm Membership	Does firm association affect audit quality?	Firms improve their social and firm membership, a critical component affecting a firms' audit quality
Libby, Rennekamp, and Seybert (2015)	AOS	Financial	Social Identity	What is the relationship between the roles of managers, auditors, and directors in earnings management and decision-making?	Using Bauer (2015), auditors can develop strong relationships with new clients after a short tenue, reducing the effectiveness of rotation for enhancing independence.

*The literature search for social identity theory was carried out manually by searching through the following journals: Accounting, Auditing , and Accountability Journal. Accounting, Organizations and Society, Contemporary Accounting Research, Journal of Accounting Research, Journal of Business Ethics, and The Accounting Review. A manual search on Science Direct was then followed up to ensure all relevant articles were included in this review. This literature review encompassed any research that contained, applied, or reference social identity theory in 1988 to 2018.

APPENDIX C: STUDY 2 EXPERIMENTAL MATERIALS

You are being invited to take part in a research study. Whether you take part is up to you.

- The purpose of this research is to understand how managers respond to different social situations. This will help firms understand corporate and social culture.
- Thank you for agreeing to participate in our research. Before you begin, please note that the data you provide may be collected and used by Amazon as per its privacy agreement. This agreement shall be interpreted according to United States law.
- Participants are students recruited from Amazon Mechanical Turk. During the study, participants will assume the role of a manager in a hypothetical company. Participants are randomly assigned to different social situations, decide the amount of expenditures they want to project, and answer some questions about the study and themselves. All responses will be completely anonymous.
- The study will take approximately 20-30 minutes to complete.
- Participants who successfully pass the screening questions will then be able to participate in the study. All participants will be compensated $2.00 if they successfully complete the survey.

You must be 18 years of age or older to take part in this research study.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints please contact Wioleta Olczak, Graduate Student, Kenneth Dixon School of Accounting, College of Business Administration, (407)-823-2963, Wioleta.Olczak@ucf.edu.

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

Please answer the following questions about yourself.

1. Are you currently or have you been a manager with the authority to make decisions about the operation of your department, division etc.?
   a. Yes
   b. No

2. Does your current or past organization have a designated individual or group of individuals who are responsible for managing the company's environmental/sustainability performance?
   a. Yes
   b. No

3. To what degree do you have an influence on the actions of this person or group?

0% influence	100% influence

4. To what degree have you had an influence on a similar person or group in your previous jobs?

0% influence	100% influence

5. Does your current or past organization have a designated individual or group of individuals who are responsible for managing the company's environmental forecasts, spending, or performance?
   a. Yes
   b. No

6. To what degree do you have an influence on the actions of this person or group?

0% influence	100% influence

7. To what degree have you had an influence on a similar person or group in your previous jobs?

0% influence	100% influence

8. Please rate the extent you agree or disagree with the following statement: I feel comfortable evaluating a company's financial or environmental performance by analyzing its annual reports and 10K reports.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree or disagree	Somewhat Agree	Agree	Strongly Agree

The next screen will provide you with an overview of the case. **Please read the overview carefully as you will be asked several comprehension check questions after reading the case details. These questions are designed to ensure you fully understand the facts of this case before you make any decisions using this information.**

CASE OVERVIEW

Your Role

You are starting a new job as the Chief Sustainability Officer (CSO) of ABC Company, an American multinational energy company. The job of the CSO is to work with the CEO to improve and align the company's sustainable performance with its core objectives. This will be your first year at ABC Company. You report directly to the CEO.

Your Task

It is now the end of 2018 and you will use the information provided below to decide what ABC Company should disclose in its Annual Report and 10K about its projected 2019 environmental capital spending. A Form 10-K is an annual report required by the U.S. Securities and Exchange Commission (SEC) that gives a comprehensive summary of a company's financial performance. This report is publicly available for download and is read by shareholders and potential shareholders. ABC Company and its competitors are all required to disclose projected environmental capital spending for the following year in their current year 10K report.

ABC Company Summary

ABC Company specializes in producing and distributing different types of energy products including oil, natural gas, solar, and wind power. ABC Co. markets and distributes products throughout the world. ABC Co. has significant operations in North and South America, Australia, and Asia. It is ranked as the 5th largest energy producer in the world.

Strong competition exists in all sectors of the energy industry. ABC Co. competes with other petroleum and energy companies that specialize in the acquisition, refining and distribution of crude oil and natural gas. ABC Co. competes against these companies by continuously enhancing its products, marketing these products to distributors and end-consumers, and engaging in environmental and sustainability projects.

In 2017, ABC Company projected that it would spend $700 million on environmental projects. Its actual environmental spending in 2017 was actually $320 million, an overstatement of 55%.

ABC Company's new Environmental Project for 2018

In 2018, ABC Company has decided to invest in a new sustainability project that will help reduce greenhouse gas pollution and toxic emissions involved in the extraction and refining of oil and natural gas. The technology involved in this project is highly innovative and therefore, it is difficult to project its cost accurately.

Given the project cost's uncertainty, your team has provided you with a range estimate for projected 2019 environmental capital spending. The team concluded that actual spending could range from $600 million to $1 billion.

Your Performance Evaluation

The Compensation Committee of ABC Company's Board of Directors is responsible for designing compensation contracts for top managers (including for you, the CSO) at ABC

Company as well as for setting goals and targets and for evaluating performance of top managers each year. As part of this responsibility, the Compensation Committee has specified that substantial weight in your annual performance evaluation will be placed on the accuracy of the forecasted cost of capital projects compared with actual spending in 2019. Your projections for 2019 will go to the Board and will be disclosed in the 10K for the 2018 fiscal year. Next year, in 2019, when the project is complete, the actual amount of environmental capital spending will be known, and the Board will evaluate the accuracy of your projections for 2019. In other words, accuracy in *projecting* 2019 environmental capital spending relative to *actual* amounts will have a positive impact on your 2019 performance evaluation. The Board will evaluate you as a high performer if you are accurate in *projecting* 2019 environmental capital expenditures relative to *actual* environmental capital expenditures spent by ABC Company.

Your CEO's Expectations and Your 2019 Environmental Capital Spending Projection
Over the past year, the CEO has continuously discussed the importance of ABC Company's environmental and sustainability performance. At a recent meeting of top managers of ABC Company, the CEO emphasized that it is essential that ABC Company matches, if not, exceeds their competitors' environmental capital spending as disclosed publicly in their 10K reports. He believes that keeping up with the competition in this area will improve ABC Company's environmental image and maintain its environmental and sustainable legitimacy. The CEO believes that by projecting higher future environmental capital spending, ABC Company will be more appealing to current and future shareholders. Although the CEO knows that your annual performance evaluation by the Board is based on the accuracy of your projections relative to actual capital spending, the CEO urges you to make a projection closer to $1 billion in environmental capital spending. He sees this as important to the company's reputation with current and future shareholders as a legitimate environmentally-focused organization.

<u>Quiz</u>

1. Based on your team's evaluation, what is the range of possible environmental capital spending in 2019?
    a. $450 million to $500 million
    b. $600 million to $1 billion
    c. $700 million to $900 million
    d. $800 million to $950 million
2. Does the Board of Directors weight your annual performance on your accuracy in *projecting* 2019 environmental capital expenditures relative to *actual* environmental capital expenditures in 2019?
    a. Yes
    b. No
3. According to your CEO, your capital spending projections should be on your team's
    a. $600 million
    b. $1 billion

Present Status Quo Condition:
Before deciding what cost to disclose, you have asked your team to investigate the projections of environmental capital spending in the *2017* 10K reports of ABC Company's most direct industry competitors relative to the actual amounts of these expenditures disclosed in their 2018 Annual Reports. Your team has summarized this information in the table below.

These competitors all resemble ABC Company in terms of size, age, and have similar patterns of revenue growth over the last 5 years.

Company Name	Projected Environmental Capital Spending for 2017 (1)	Actual Environmental Capital Spending in 2017 (2)	Accuracy of Projection [(2-1)/1]
Competitor A	$1000 million	$795 million	Overstated by 21%
Competitor B	$940 million	$705 million	Overstated by 25%
Competitor C	$850 million	$680 million	Overstated by 20%
Competitor D	$950 million	$780 million	Overstated by 18%

It appears that overstating *projected* environmental capital spending relative to *actual* environmental capital spending <u>is common</u> in your industry.

Absent Status Quo Condition:
Before deciding what cost to disclose, you have asked your team to investigate the projections of environmental capital spending in the *2017* 10K reports of ABC Company's most direct industry competitors relative to the actual amounts of these expenditures disclosed in their 2018 Annual Reports. Your team has summarized this information in the table below.

These competitors all resemble ABC Company in terms of size, age, and have similar patterns of revenue growth over the last 5 years.

Company Name	Projected Environmental Capital Spending for 2017 (1)	Actual Environmental Capital Spending for 2017 (2)	Accuracy of Projection [(2-1)/1]
A	$500 million	$654 million	Understated by 31%
B	$940 million	$633 million	Overstated by 33%
C	$611 million	$781 million	Understated by 28%
D	$600 million	$750 million	Understated by 25%

It appears that overstating *projected* environmental capital spending relative to *actual* environmental capital spending is <u>not</u> common in your industry.

As you are about to decide what ABC Company's 2019 projected environmental capital spending should be disclosed in the 10K report should be, you receive the following email from the CEO.

[High System Threat]

To: Members of the Top Management Team
From: Chief Executive Officer

Subject: Interesting article

This article just came through the *Oil and Gas News* feed. I'm passing it on to you since it has implications for our current environmental and sustainability strategy

<u>*What Stakeholders Think About U.S. Oil and Gas Companies and their Environmental Performance*</u>

A recent survey of US citizens over 18 years old conducted by researchers at a prestigious university examines how stakeholders perceive large public companies' environmental performance. The study finds that 90% percent of respondents are extremely concerned with major public companies' environmental performance. In fact, a majority of these respondents said they are thoroughly displeased with companies' apparent lack of environmental concern. A majority of respondents indicate that major U.S. public companies currently show a lack of respect for the environment. In addition, 85% of respondents believe that major U.S. public companies currently prioritize profits over protecting the environment. When asked what they would like to see from U.S. companies in the future, 95% say they want U.S. companies to <u>invest more</u> in environmental and sustainability projects.

[Low System Threat]

To: Members of the Top Management Team
From: Chief Executive Officer

Subject: Interesting article

This article just came through on the *Oil and Gas News* feed. I'm passing it on to you since it has implications for our current environmental and sustainability strategy

What Stakeholders Think About U.S. Oil and Gas Companies and their Environmental Performance

A recent survey of US citizens over 18 years old conducted by researchers at a prestigious university examines how stakeholders perceive large public companies' environmental performance. The study finds that 90% percent of respondents are not concerned with major public companies' environmental performance. In fact, a majority of these respondents said they are indifferent to companies' apparent lack of environmental concern. A majority of respondents indicate that major U.S. public companies currently show at least some respect for the environment. An additional 85% of stakeholders believe that major U.S. companies currently prioritize both profits and their impact on the environment or society. When asked what they would like to see from U.S. companies in the future, 95% say they want U.S. companies to continue to invest at the current rate in environmental and sustainability projects.

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Based on the information above, please answer the following questions. Please note that the following are not review questions.

1. Are you going to project high environmental capital expenditures for the following year?
    a. Yes
    b. No

2. What is the likelihood you will project high environmental capital expenditures?

    0% ____ 100%

3. I believe ABC Company should project high environmental capital expenditures for the following year?

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree or disagree	Somewhat Agree	Agree	Strongly Agree

You are now ready to make your projection of ABC Company's 2019 environmental capital spending.

Please slide the bar below to indicate the estimate of ABC Company's 2019 environmental capital spending that you recommend be disclosed in the company's 10K.

$600 million $1 billion

$______

Post Experimental Questionnaire:

Please answer the following questions using the scale to determine how much you agree or disagree with each of the following statements based on the information you read in the case:

1. All of ABC Company’s main competitors overstated their environmental capital projections in their 10K reports relative to their actual spending on these projects in the following year.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree

2. According to the news article provided by the CEO, survey respondents demand more investment in environmental projects by companies in the oil and gas industry.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree

3. The weight that the Board will place on the accuracy of projections in my performance evaluation was an important factor in developing my environmental capital expenditure projection.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree

4. The CEO’s interest in improving ABC Company’s environmental legitimacy with current and future shareholders was an important factor in my environmental capital spending projection.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree

5. Projecting higher environmental capital expenditures to satisfy my CEO was in my best interest.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree

6. Projecting lower environmental capital expenditures to satisfy the Board of Directors was in my best interest.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree

7. My best interest is to:

Receive a good performance evaluation from the Board — Follow CEO instructions

8. I estimated higher environmental projections than actual spending to cover any additional expenses that might come as a surprise.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree

9. Overstating projected environmental spending relative to actual environmental capital spending hurt my annual performance evaluation.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree

1. I feel uncomfortable with my environmental capital expenditure projection.

1	2	3	4	5
Very Slightly				Quite A Bit

2. I feel uneasy with my environmental capital expenditure projection.

1	2	3	4	5
Very Slightly				Quite A Bit

3. I feel bothered about my environmental capital expenditure projection.

1	2	3	4	5
Very Slightly				Quite A Bit

1. It feels personal if others criticize or compliment ABC Company.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree

2. I believe that individuals get what they deserve and deserve what they get.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree

3. I believe the CEO should have influence over managers’ decisions.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree

DEMOGRAPHIC QUESTIONS

1. How old are you?

____

2. What is your gender?
    a. Male
    b. Female

3. Which ethnic group do you consider yourself? (Check only one)

_____African/African American
_____Asian/Pacific Islander
_____Caucasian/White (non-Hispanic)
_____Hispanic
_____Middle Eastern/Arabic
_____Multi-Racial
_____Native American
_____Other
_____Prefer not to answer

4. Approximately how many years of full-time work experience do you have?

____

5. How many years have you worked in your current job?

6. Do you make decisions about investing in new capital projects?
    a. Yes
    b. No

____

7. What is your political orientation?

1	2	3	4	5	6	7
Extremely Liberal	Liberal	Slightly Liberal	Middle or Neither	Slightly Conservative	Conservative	Extremely Conservative

8. Being an American is an important determinant of how I feel about myself.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree

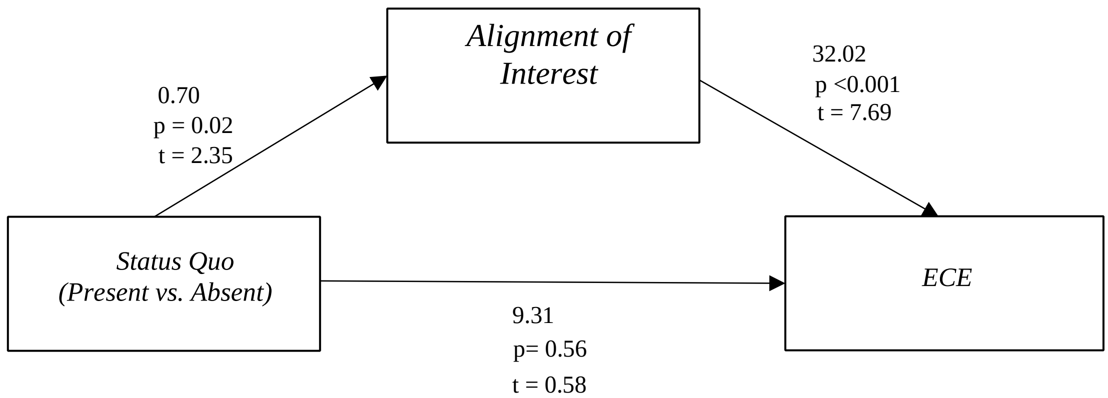
9. Environmental sustainability issues are so important that I would incorporate them into day-to-day business decision-making if I were a corporate executive.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree or disagree	Somewhat Agree	Agree	Strongly Agree

10. I support including environmental sustainability concerns into business decisions despite the possible additional cost involved.

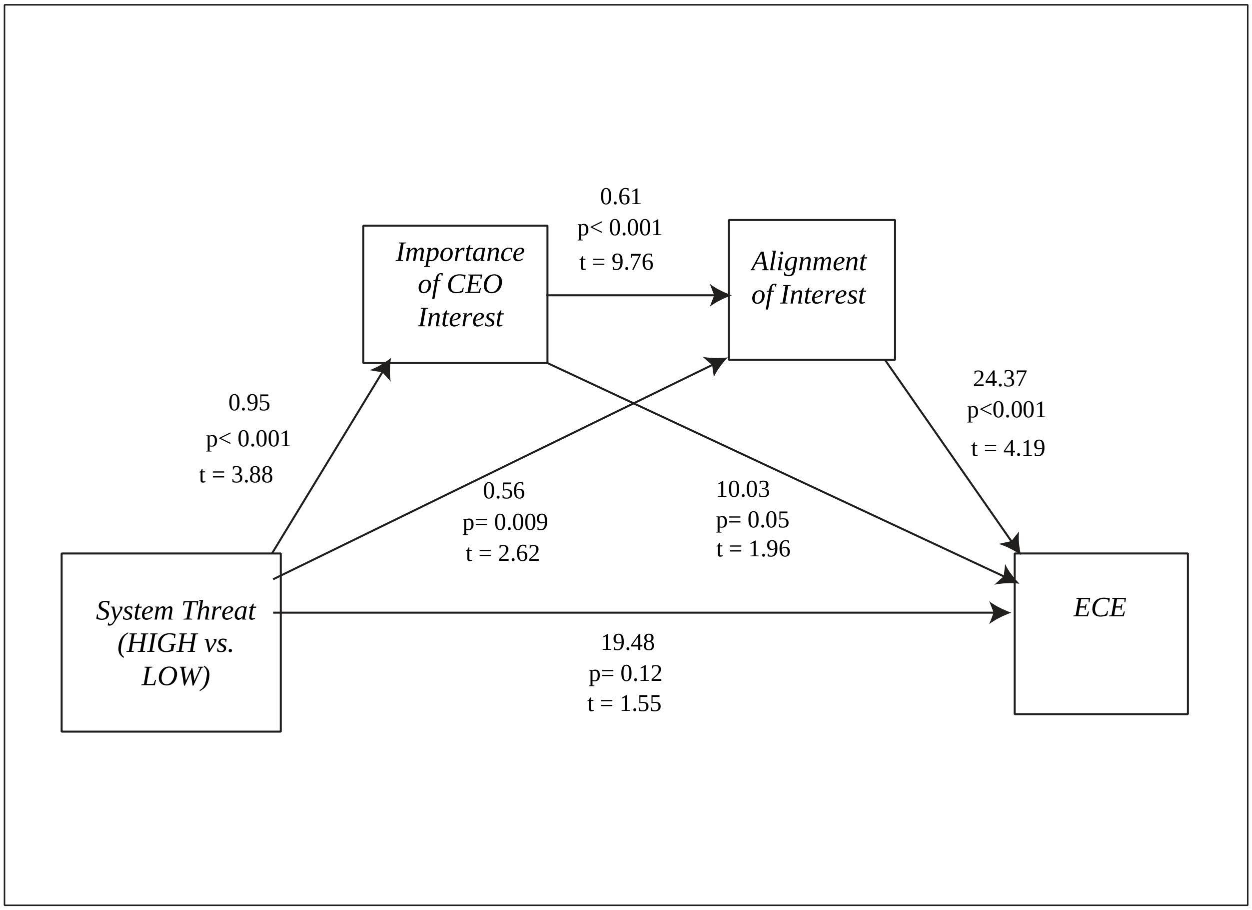
1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither agree or disagree	Somewhat Agree	Agree	Strongly Agree

APPENDIX D: STUDY 2 FIGURES



This figure shows the bias-corrected bootstrap mediation results linking *STATUS QUO* (*PRESENT* versus *ABSENT*), *Alignment of Interest*, and *ECE*, using macros for SPSS (model 4) described in (Preacher and Hayes, 2008). The mediation analysis shows that there is a significant relationship between *STATUS QUO* and *Alignment of Interest* (t = 2.35; p = 0.02) and *Alignment of Interest* and *ECE* (t = 32.02; p<0.001). The direct effect of *STATUS QUO* on *ECE* is no longer significant when including the mediator (t= 0.58; p= 0.56). The 99% bootstrap confidence suggest that mediation has occurred as the indirect effect path of *STATUS QUO* on *ECE* through *Alignment of Interest* is significant since it does not include zero (Effect = 22.54; Boot SE = 10.01; CI[4.56, 43.67]). The results utilizing *OVERSTATE* present similar findings to Figure 1 above.

Figure 2– Mediation Analyses for *STATUS QUO – PRESENT* versus *ABSENT*



This figure shows the bias-corrected bootstrap mediation results linking *THREAT* (*HIGH* versus *LOW*), *Importance of CEO Interest*, *Alignment of Interest*, and *ECE*, using macros for SPSS (model 6) described in (Preacher and Hayes, 2008). The mediation analysis shows that there is a significant relationship between *THREAT* and *Importance of CEO Interest* (t = 3.88; p<0.001) and *THREAT* and *Alignment of Interest* (t = 0.56; p = 0.0009). The model also show a direct effect of *Importance of CEO Interest* on *Alignment of Interest* (t = 9.76; p <0.001), *Importance of CEO Interest* on *ECE* (t = 1.96; p = 0.05), and *Alignment of Interest* on *ECE* (t = 4.19; p<0.001). The direct effect of *THREAT* on *ECE* is no longer significant when including the two mediators: *Alignment of Interest* and *Importance of CEO Interest* (t= 1.55; p= 0.12), suggesting that the effect of *THREAT* on *ECE* is fully mediated through *Importance of CEO Interest* and *Alignment of Interest*. The 99% bootstrap confidence suggest that mediation has occurred as the indirect effect of *THREAT* on *ECE* through *Importance of CEO Interest* is significant since it does not include zero (Effect = 9.50; Boot SE = 5.33; CI[1.43, 23.22]). It also suggests mediation has occurred as the indirect effect of *THREAT* on *ECE* through *Alignment of Interest* is significant and does not include zero (Effect = 13.69; Boot SE = 6.15; CI [3.59, 27.82]). Most importantly, Figure 2 suggests that a full mediation has occurred as the indirect effect of *THREAT* on *ECE* through *Importance of CEO Interest* and then through *Alignment of Interest* is significant and does not include zero (Effect = 14.13; Boot SE = 5.22; CI[6.27, 27.57]).

Figure 3– Mediation Analyses for *THREAT – HIGH* versus *LOW*

APPENDIX E: STUDY 2 TABLES

Table 3 - Descriptive Statistics

Panel A: *OVERSTATE*

	System Threat	
	Low	*High*
Status Quo- Absent		
Proportion	32 out of 64	
Percent	50.0%	
Status Quo- Present		
Proportion	43 out of 65	59 out of 63
Percent	66.2%	93.7%

Panel B: *ECE*

	System Threat	
	Low	*High*
Status Quo- Absent		
Mean	$823.02	
Std. Dev	97.52	
Median	$803.50	
No. of Observations	64	
Status Quo- Present		
Mean	$854.86	$895.86
Std. Dev	104.29	79.79
Median	$850	$908
No. of Observations	65	63

Panel C: Process Measures Means (standard deviation) [median]

Alignment of Interest			***Importance of CEO Interest***		
	System Threat			System Threat	
	Low	High		Low	High
Status Quo-Absent	4.25		Status Quo-Absent	4.61	
	(1.67)			(1.66)	
	[4]			[5]	
Status Quo-Present	4.95	5.75	Status Quo-Present	4.98	5.75
	(1.70)	(1.43)		1.62	1.54
	[5]	[6]		[5]	[6]

Variable Definitions:
Absent = where participants are not aware of their industry's environmental projection relative to actual spending pattern
Present = where participants are aware that their industry overstates environmental projections relative to actual spending
Low = participants in the low system threat receive an article regarding stakeholders' indifference to the oil and gas industry's environmental performance
High = participants in the high system threat receive an article regarding stakeholders' dissatisfaction to the oil and gas industry's environmental performance
Overstate = participants' responses as to whether (Yes/No) they will project high environmental projections. The above shows the number of "yes" responses.
ECE= participants' environmental projection using a slider scale with $600 million and $1 billion as endpoints
Alignment of Interest = participants' response to the following question: "Projecting higher environmental capital expenditures to satisfy my CEO was in my best interest" on a 7 point Likert scale with "Strongly Agree" and "Strongly Disagree" endpoints.
Importance of CEO Interest = participants responses to the following question: "The CEO's interest in improving ABC Company's environmental legitimacy with current and future shareholders was an important factor in my environmental capital spending projection" on a 7 point Likert scale with "Strongly Agree" and "Strongly Disagree" endpoints

Table 4 - Experimental Results - H1

Panel A: Chi Square Test for H1 *(OVERSTATE)*

	Present/Low vs. Present/High			
	Stat.	**p**	**PhiValue**	**Phi Sig.**
OVERSTATE	$\chi_{(1)}{}^{2} = 29.31$	0.001	0.39	0.001

Panel B: Test of H1- Independent t-test of *ECE* projections

Source	DF	t	p-value (one-tailed)
Status Quo			
Present versus Absent	127	-1.79	0.04

Variable Definitions:
Absent = where participants are not aware of their industry's environmental projection relative to actual spending pattern
Present = where participants are aware that their industry overstates environmental projections relative to actual spending
Low = participants in the low system threat receive an article regarding stakeholders' indifference to the oil and gas industry's environmental performance
High = participants in the high system threat receive an article regarding stakeholders' dissatisfaction to the oil and gas industry's environmental performance
Overstate = participants' responses as to whether (Yes/No) they will project high environmental projections.
ECE= participants’ environmental projection using a slider scale with $600 million and $1 billion as endpoints

Table 5 - Experimental Results - H2

Independent t-test of Status Quo: *PRESENT* versus *ABSENT*

	DF	t	F	p-value (one-tailed)
Alignment of Interest	127	-2.37	0.15	0.01
Importance of CEO Interest	127	-1.30	0.31	0.10

Variable Definitions:
Absent = where participants are not aware of their industry's environmental projection relative to actual spending pattern
Present = where participants are aware that their industry overstates environmental projections relative to actual spending
Alignment of Interest = participants' response to the following question: "Projecting higher environmental capital expenditures to satisfy my CEO was in my best interest" on a 7 point Likert scale with "Strongly Agree" and "Strongly Disagree" endpoints.
Importance of CEO Interest = participants responses to the following question: "The CEO's interest in improving ABC Company's environmental legitimacy with current and future shareholders was an important factor in my environmental capital spending projection" on a 7 point Likert scale with "Strongly Agree" and "Strongly Disagree" endpoints.

Table 6 - Experimental Results - H3

Panel A: Chi Square Test for H3

	Present/Low vs. Present/High			
	Stat.	**p**	**PhiValue**	**Phi Sig.**
OVERSTATE	$\chi_{(1)}{}^{2} = 29.78$	0.001	0.48	0.001

Panel B: Test of H3- Independent t-test of *ECE* projections

Source	DF	t	p-value (one-tailed)
System Threat			
High versus Low	122.58	-2.61	0.005

Variable Definitions:

Present = where participants are aware that their industry overstates environmental projections relative to actual spending

Low = participants in the low system threat receive an article regarding stakeholders' indifference to the oil and gas industry's environmental performance

High = participants in the high system threat receive an article regarding stakeholders' dissatisfaction to the oil and gas industry's environmental performance

Overstate = participants' responses as to whether (Yes/No) they will project high environmental projections.

ECE= participants’ environmental projection using a slider scale with $600 million and $1 billion as endpoints

Table 7 - Experimental Results - H4

Independent t-test of System Threat: *HIGH* versus *LOW*

	DF	t	F	p-value (one-tailed)
Alignment of Interest	123.47	-2.86	2.95	0.003
Importance of CEO Interest	126.00	-2.72	0.60	0.004

Variable Definitions:
Low = participants in the low system threat receive an article regarding stakeholders' indifference to the oil and gas industry's environmental performance
High = participants in the high system threat receive an article regarding stakeholders' dissatisfaction to the oil and gas industry's environmental performance
Alignment of Interest = participants' response to the following question: "Projecting higher environmental capital expenditures to satisfy my CEO was in my best interest" on a 7 point Likert scale with "Strongly Agree" and "Strongly Disagree" endpoints.
Importance of CEO Interest = participants responses to the following question: "The CEO's interest in improving ABC Company's environmental legitimacy with current and future shareholders was an important factor in my environmental capital spending projection" on a 7 point Likert scale with "Strongly Agree" and "Strongly Disagree" endpoints.

APPENDIX F: IRB APPROVAL

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Determination of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Wioleta Olczak**

Date: **October 18, 2018**

Dear Researcher:

On 10/18/2018, the IRB reviewed the following modification to human participant research that is exempt from regulation:

Type of Review:	Exempt Determination
Modification Type:	Updates to consent form and protocol for new population. Revision to instrument.
Project Title:	Estimating Environmental Expenditures
Investigator:	Wioleta Olczak
IRB Number:	SBE-18-14112
Funding Agency:	
Grant Title:	
Research ID:	N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

This letter is signed by:

Signature applied by Gillian Morien on 10/18/2018 04:16:13 PM EDT

Designated Reviewer