

SEEING IS NOT ALWAYS BELIEVING: BELIEF REVISION IN THE CONTEXT OF  
UNETHICAL FIRM BEHAVIOR

by

LISA DEE LEWIN

A Dissertation submitted to the Graduate School-Newark Rutgers,

The State University of New Jersey

In partial fulfillment of the requirements for the degree of

Doctor of Philosophy

Graduate Program in Organization Management

written under the direction of

Danielle Warren

and approved by

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Newark, New Jersey

October 2019

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## **ABSTRACT OF THE DISSERTATION**

In this dissertation, I seek to understand how employees revise their moral beliefs in response to information regarding unethical firm behavior. In my theoretical model, I propose that employees devalue information in the moral domain when it contradicts their current beliefs. I also propose that employees are more likely to use information in their decisions and share information that confirms their beliefs. I also consider the mediating role of information evaluation and moderating role of accountability. In the current management literature, there is no widely accepted strategy to reduce the tendency for employees to disregard conflicting information. I consider different types of accountability and propose that both process accountability and non-financial outcome accountability can promote the acceptance of new information regarding unethical firm behavior and encourage an employee to make decisions based on that information. While previous accountability research has addressed several sources of bias, it has not considered biased information processing based on previously held beliefs, nor how accountability may attenuate the persistence of moral beliefs in the workplace. I test these hypotheses using two study designs (in five experiments) that simulate employee decision-making in corporate social responsibility contexts. In the first three experiments, participants assume the role of a supply chain decision maker who must choose between competing suppliers, one of which engages in human rights violations. In the fourth and fifth experiments, study participants assume the role of a human resources professional and must evaluate fictional research regarding the efficacy of affirmative action hiring policies. I find evidence that evaluation of information quality mediates the relationship between receiving belief-conflicting information and making decisions based on that

information, including sharing the information. I also find evidence that accountability moderates that relationship. In all, people rate information as low quality when it conflicts with what they already believe, and as a result, they are less likely to base their decisions on that information or to share this information with others. However, when these same people are held accountable for their decision-making processes and strategies, they are more open to information that conflicts with previous moral beliefs. These findings offer important insights into the mechanisms by which employees disregard information and offer a theoretical foundation for future research on the role of accountability in information processing.

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## **CHAPTER 1: INTRODUCTION**

In organizations, it is essential for employees to accept factual information, to revise their beliefs accordingly, and to share that information with other decision makers. For example, many employees may have a moral belief that one should not engage in harm, but if employees do not believe evidence that a certain work practice produces harm, then they will not change their practices. Therefore, it is necessary to identify how employees make decisions regarding information, especially when that information conflicts with their moral beliefs, as well as to identify organizational factors that improve employee decision making.

In this dissertation, I aim to contribute to the management literature by examining the role of information processing in organizational decision making in situations where the information conflicts with employees' previously held moral beliefs. Prior research has not yet considered the role of information evaluations as a mediator that explains the relationship between the receipt of belief-conflicting information and subsequent sharing of information or decision-making using the information. By identifying this mediator, I show evidence that employees are not consciously choosing to ignore information that would negatively affect the bottom-line, but rather that employees reject information through the mechanism of devaluing it. Prior research has also not examined ways in which organizations may be able to reduce this tendency in employees. I introduce accountability to address this gap in the literature. Further, I examine these relationships in two different business contexts, supply chain and human resources, and find evidence that suggests similar relationships in both contexts.



## **Moral Beliefs**

Research has shown that beliefs are resistant to change, even when those beliefs are based on information that is later shown to be false (e.g., Lewandowsky et al., 2012). While research has not compared the revision of moral beliefs to other types of beliefs, it seems likely that when beliefs incorporate personal or social ethical norms, they become even more resistant to revision. Moral beliefs directly contribute to identity and self-definition (Strohming and Nichols 2014). Moral beliefs—beliefs about what is right and what is wrong, or about the relative importance of various values and norms—are also central to social identity. Individuals often develop and maintain beliefs and attitudes shared by the groups that are most central and most salient in their lives, e.g., religious organizations, ethnic backgrounds (Hogg and Terry 2000). Once these beliefs and values have been adopted, they become critical to identity and self-definition. Research has shown that a threat to one's identity can result in derogation of the source of the threat (Petriglieri 2011). This suggests that when individuals receive information that contradicts their moral beliefs, they may experience an identity threat that results in devaluing contradictory information in order to resist changing a belief.

## **Employees and Cognitive Bias**

Why would employees disregard true and accurate information? Scholars argue that ethicality is bounded, in part by cognitive limitations, such that individuals do not always realize when their moral judgments are mistaken (e.g., Bazerman & Sezer, 2016; Moore & Gino, 2013). Research on the confirmation bias (e.g., Nickerson, 1998), information distortion (e.g., Polman & Russo, 2012), and motivated reasoning (Kunda,

1990) also demonstrate many of the mechanisms through which individuals make poor decisions through biased cognitions. While we know from prior research that these cognitive biases may cause individuals to disregard or devalue information, little research addresses the obligations associated with employment which provide an incentive to carefully consider and evaluate information. Because employees have different roles and responsibilities than they do in other aspects of life, we do not know if the cognitive biases will extend to information evaluations in the workplace. Importantly, if such biases persist in the workplace, they could cause employees to disregard factual and accurate information regarding unethical behavior if it conflicts with their own personal moral beliefs. Thus, it is important to establish if these cognitive biases also affect the evaluation of information and decision-making in a work context, especially when unethical behavior is at risk.

Additionally, while previous work has explored the effect of cognitive bias on information *seeking*, there has been very little research focused on information *sharing*. Knowledge sharing is a critical component for effective organizations. Team projects, problem solving and decision making all rely on organizational members sharing the information they have with one another. However, research has not thoroughly addressed the extent to which cognitive bias may affect employees' decision to share information.

If biases persist and affect information sharing, organizations must determine how to diminish the effects in the workplace. Currently, little research identifies workplace conditions that reduce the effect of bias on information processing. Here I test the role of accountability for process and outcomes as a means to reducing the effects of biases.

## **Accountability**

What can help individuals to consider evidence more openly, particularly when that evidence contradicts one's prior moral beliefs? Here, I propose and test the role of accountability in mitigating an individual's tendency to disregard information that contradicts one's moral beliefs. Individual accountability has been shown to decrease racially biased judgments in hiring (Ford, Gambino, Lee, Mayo, & Ferguson, 2004) and in education (Pit-ten Cate et al., 2016), as well as conflicts of interest (Feldman & Halali, 2017) but accountability research has not addressed biased information processing based on previously held beliefs nor how accountability may attenuate the stickiness of moral beliefs. Previous research finds that accountability for decision-making strategies, rather than accountability for outcomes, results in better decision making (e.g., Siegel-Jacobs & Yates, 1996). In organizations, outcomes are often assumed to be financial (e.g., Verwaeren, Buyens, & Baeten, 2016), but, in fact, outcomes may also be non-financial, such as a firm's reputation or social performance, which research has not yet addressed. Therefore, the primary research question for this dissertation is whether accountability will increase individuals' tendency to positively evaluate evidence that is contradictory to their current beliefs and therefore incorporate that information into their decision-making.

## **Overview of the Dissertation**

In this dissertation, I review the theories and findings of various literatures which speak to the processes by which individuals come to form and maintain or revise their beliefs. In the first section, I draw upon the psychological and management literature to understand the ways in which individuals respond to information and formulate several

hypotheses that address when individuals believe, and transmit, information, particularly information that contradicts their present beliefs. I then propose accountability as a moderator that assists individuals in their acceptance of new information. In the following section, I test the hypotheses presented in this dissertation in five experiments which examine the relationships between initial moral beliefs, evaluation of new information and the decision to act upon or transmit new information, as well as testing the hypothesis that accountability is a moderator.

In the first three experiments, international supply chain management is the organizational setting for ethical decision-making. Due to the fact that labor laws vary from country to country, there are opportunities for management to benefit from or exploit the poor treatment of laborers, particularly in emerging economies. In an experimental procedure, this setting allows for the examination of how participants respond to information that conflicts with their moral beliefs in their organizational decision making. By creating fictitious companies and news headlines, participants' responses to the information are given without the influence of pre-existing beliefs or outside information. Therefore, the first three experiments use a study design in which participants are asked to envision themselves as a procurement agent who must select foreign suppliers. The study design allows for the examination of the links between a newly developed initial belief, evaluation of new information in the form of internet search results for news headlines, and individual decision-making, as well as the influence of accountability on these relationships. Results suggest, under certain conditions, that participants who initially believed a fictitious company to be ethical were less likely to find information regarding the supplier's unethical behavior both useful and

credible compared to participants with no initial belief. Results also suggest that among financially accountable participants, those with an initial belief that the supplier is ethical are less likely to find the information useful compared to those with no initial belief.

The fourth and fifth experiments use the widely debated organizational topic of diversity-based hiring practices as the context for a different experimental study design. These experiments simulate the organizational context of human resources management and use a current and relevant issue area for many organizational members. Rather than creating a new belief, this study design uses participants who already hold moral beliefs about the effectiveness of diversity hiring programs. While the first study design creates an initial belief about the company, which eliminates the possibility of outside information affecting participants' responses, this design elicits pre-existing moral beliefs, which is likely to be more representative of real-world business situations. The study design also uses a dependent variable that involved not only a decision regarding the information, as in the first set of studies, but also, sharing of information with colleagues and other decision-makers. In these experiments, individuals in different accountability conditions evaluate a fabricated academic research study that manipulates the outcomes of a diversity hiring program and either conflicts with or confirms participants' preexisting beliefs on the topic. That is, half of participants read that a team using the diversity hiring program was more successful than a team using a traditional hiring process. The other half of participants read the traditional team was more successful. Participants are then faced with the decision to recommend and/or share this research study information with senior-level decision makers in the organization. Using this study design, the model is tested in the context of naturally occurring, preexisting

moral beliefs on affirmative action. Results suggest that employees who evaluate information more positively are more likely to share that information. Results also suggest that participants who are accountable for the process and strategies they use to make decisions are more open to information that conflicts with their initial moral beliefs compared to participants with no accountability and those who are accountable for social outcomes. See Appendix A for a summary of all study findings.

Overall, the dissertation contributes to the literature in several ways. First, results suggest that when employees read information that conflicts with their moral beliefs, they are more likely to negatively evaluate that information, and in turn are less likely to use it to make decisions or to share it with other decision makers in the organization. These relationships demonstrate the stickiness of moral beliefs (individuals' assessments of truth regarding what is right and what is wrong) in an organizational context, which has implications for researchers as well as for managers. Second, the dissertation contributes to the accountability research by examining the effect of accountability on minimizing bias which may cause employees to devalue information in order to preserve their moral beliefs. Results suggest that holding an employee accountable for financial outcomes can result in their willingness to overlook unethical firm behavior for the sake of profit. There is also evidence that suggests holding employees accountable for *how* they make decisions (rather than for the outcomes of those decision) may be the most effective type of accountability in reducing bias in the evaluation of information.

## **CHAPTER 2: BELIEFS IN THE PSYCHOLOGY LITERATURE**

The word “believe” may evoke awareness of trust or distrust in another person (“Do you believe me?”), or it may activate fanciful thinking (“Do you believe in Santa Claus?”), or strongly held values (“Do you believe in equal opportunities for all?”) In all cases, a belief represents what an individual accepts as truth.

“In all the epistemological talk that philosophers and psychologists have produced over the years, one point of consensus seems to emerge: Beliefs, in the broad and colloquial sense, involve both the mental representation and the positive assessment of meaningful information” (Gilbert et al., 1991: 107).

In other words, people believe a proposition when they both (1) cognitively process and comprehend it, and (2) assess it as truth. According to Gilbert and colleagues (1991), philosophers have disagreed on the order of these steps. For example, Descartes argued that comprehending was an automatic, involuntary process, which must be accomplished before one could assess its truth value, while Spinoza argued that to comprehend a proposition, one must first implicitly accept it, and later, could change his mind and reject the proposition (Gilbert et al., 1991). Disbelief, to Spinoza, was an intentional revision of a belief.

While psychologists disagree about whether one must comprehend a proposition before assessing its truth value (Downing, 1992), the order of comprehension and the truth assessment is difficult to empirically test. Regardless, citing both intuitive and empirical evidence, scholars assert that it is cognitively easier, and less time-consuming to form a belief than it is to skeptically or critically evaluate a belief. For example, young children are likely to accept any proposition as true and only begin to question as they

develop more complex cognitive skills (Gilbert et al., 1991). Empirical studies have demonstrated that when adults are distracted by other tasks, they are more likely to accept new information, because they are less able to critically evaluate the information and develop counter arguments (e.g., Osterhouse & Brock, 1970; Petty, Wells, & Brock, 1976). For instance in a study by Osterhouse and Brock (1970), the researchers found that participants were more likely to accept a persuasive communication, and less likely to develop counter-arguments, when participants were distracted by a flashing light that required a response.

### **Resistance to Change**

While the present studies are focused specifically on belief change, it is important to note that a large body of literature exists on individuals' resistance to other changes. For example, much research has been conducted on the status quo bias (Samuelson & Zeckhauser, 1988), in which individuals disproportionately prefer to keep the current state of affairs, as opposed to making a change. In a series of decision-making experiments, researchers found evidence to support the status quo bias. They also found evidence of the status quo bias in real world situations such as employees choosing health plans and retirement programs (Samuelson & Zeckhauser, 1988). Other research demonstrates that the bias for choosing the status quo exists, regardless of whether maintaining the status quo requires an action. This is attributed to rational reasons such as the transaction costs of switching, efficiency and ambiguity aversion, as well as to non-rational reasons such as regret aversion or personal identification with a past decision (Schweitzer, 1994).



The endowment effect (Thaler, 1980) is another example of how individuals resist change by over-valuing items that they already possess. Both the endowment effect and the status quo bias have been explained by loss aversion (Kahneman, Knetsch, & Thaler, 2012). For a review of endowment effect and status quo bias research, see Kahneman et al., 2012.

### **The Cost of Revising Beliefs**

Literature on artificial intelligence and computer simulation of human belief revision incorporates the cost of acquiring evidence into the belief revision process to account for the reliance on assumptions that may be incorrect, therefore causing beliefs to be inaccurate. According to these models, the goal of a rational person, or an artificial intelligence, is to reduce the cost of acquiring proof in order to maintain or update a belief, in order to make belief revisions based on the best, most reliable evidence (e.g., Charniak & Shimony, 1994; Hahn, Merdes, & von Sydow, 2018). There is very little cognitive or behavioral research that directly addresses the financial or personal costs of updating one's beliefs.

However, other research provides an indirect approach to understanding the costs associated with revising beliefs. Poor decision making can affect individuals (e.g., overconfidence), teams (e.g., groupthink) and organizations (e.g., poor strategic choices), resulting in negative consequences such as inefficiencies and missed opportunities. These negative consequences indicate that failing to adequately and accurately update individual beliefs can have financial, as well as psychological costs. While there is

limited research on the psychological costs of belief revision specifically, related research can provide insight. For example, research shows that revising one's decisions or judgments can cause an individual to feel regret over a revised decision, even when the outcome for both the initial and revised decisions are the same (Kirkebøen, Vasaasen, & Halvor Teigen, 2013). Other research has demonstrated that when individuals alternate between mindsets (e.g. abstract vs. concrete, approach vs. avoidance) when making a judgment, executive functioning is depleted such that there is a decrease in the quality of subsequent decisions (Hamilton, Vohs, Sellier, & Meyvis, 2011). It is likely that there may be similar psychological consequences when an individual revises a belief.

### **Formation Versus Revision of Beliefs**

While there is limited empirical research that contrasts the formation and the revision of beliefs, there have been studies examining either belief revision or formation that have induced initial beliefs. For example, in one set of experiments, participants read statements that were labeled as true or false. When participants were interrupted immediately after reading the statement, they were more likely to recall false propositions as true, but not more likely to consider true propositions to be false. This finding lends some support to the hypothesis that beliefs are formed based on comprehension, and then rejected on assessment (Gilbert, Krull, & Malone, 1990). In a similar study, participants who were distracted by simultaneously working on another task (compared to non-distracted participants), or who were under time pressure (compared to participants with no time pressure), were more likely to make decisions based on information marked as false, compared to those who were not under distraction or time pressure leading the

researchers to conclude that without the time or attention to assess truth value, individuals are more likely to form beliefs, even on information known to be false (Gilbert, Tafarodi, & Malone, 1993).

Other studies find that initial beliefs persist despite retractions or corrections of false information. For example, in one study, researchers randomly assigned participants to receive either failure or success feedback on a task. Even after a debrief in which participants were informed the feedback was false, participants who received feedback that they had been successful rated themselves as more confident about their abilities and more likely to be successful in the future. Most interestingly, in a second experiment, observers who watched the experiment also maintained their beliefs about the active participants' success rates and skill (Ross, Lepper, & Hubbard, 1975). More recent research on retractions of misinformation has demonstrated that individuals tend to rely on initial information, even when it is retracted or corrected (see Lewandowsky, Ecker, Seifert, Schwarz, & Cook, 2012 for a review). For example, in one study, participants initially read that a plane crashed due to bad weather, and later read that there had not been bad weather. Study results indicated that participants who read a retraction were not significantly more likely to discount the initial information than participants who read no retraction, despite indicating that they remembered reading the retraction; however, when an alternate causal explanation was provided along with the retraction, participants were more likely to refer to the alternative explanation when describing the event (Ecker, Lewandowsky, & Apai, 2011).

Many of the empirical studies that measure belief change are concerned with changing specific, topical beliefs through education and training programs (e.g. Karatas

2014; Roth and Burgess 2008; Uzelac 2016). For example, field studies have provided female college students with information about perinatal care (Uzelac, 2016), trained pre-service teachers on using computers to teach math (Karatas, 2014), and educated medical residents on the benefits of opioids for cancer patients (Roth & Burgess, 2008).

Although much of the empirical work on belief change has centered on isolated, specific beliefs, several related literatures, such as attitudes, persuasion, decision-making, and motivated reasoning can provide a great deal of insight into belief change more generally, as I will detail below. These literatures describe and explain how individuals develop and maintain or change their beliefs indirectly or implicitly, by focusing on the outcomes of beliefs, such as attitudes or decision-making (e.g., Bond, Carlson, Meloy, Russo, & Tanner, 2007; Festinger, 1957), or antecedents of beliefs, such as information processing (Tversky & Kahneman, 1974). The present studies focus on beliefs, rather than attitudes, but many of the theories developed around attitude change are particularly relevant to the hypotheses regarding beliefs. In the next section, I review the literature on attitude change and persuasion, highlighting the implicit role of beliefs. For an overview of the most pertinent research and findings, see Appendix B.

### **Beliefs as a Foundation of Attitudes**

Attitude is defined as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (Eagly & Chaiken, 1993: 1). This degree of favor or disfavor is related to beliefs, as “beliefs are understood to be associations or linkages that people establish between the attitude object and various attributes” (Eagly & Chaiken, 1993: 11). In other words, the attitude that one has toward

some idea or object will be shaped by what one believes to be true about that idea or object. For example, in order for one to have an *attitude* that favors legal regulations for corporate hazardous waste reduction, one must first *believe* that hazardous waste is harmful to the environment.

A rich literature on attitude change has identified many factors that explain when individuals are more or less likely to change attitudes and beliefs, and how individuals process information in ways that facilitate or hinder the change process (e.g., Bohner & Dickel, 2010; Crano & Prislin, 2006). Some of these factors describe the information or piece of communication itself, such as message source (e.g., an expert compared to a layperson) and argument quality (e.g., strong arguments compared to weak arguments, see Petty & Cacioppo, 1984 for a review). Other factors vary across individuals, such as the use of heuristics (e.g., Tversky & Kahneman, 1974) and the level of value-relevance, i.e., the salience or importance of an attitude to an individual's self-defining values (Johnson & Eagly, 1989). In the remainder of this section, I review the literature on attitudes and attitude change that relates most directly to my proposed study of beliefs. I begin by discussing the Elaboration Likelihood Model (ELM) of attitude change (Petty & Cacioppo, 1984), followed by several concepts of consistency which provide the foundation for understanding when individuals are likely to shift their beliefs and attitudes. I then discuss resistance to change, evaluation of information and motivated reasoning, all of which provide insight into the cognitive processes which influence individuals' revision of beliefs. Finally, I end with a discussion of relevant research in the management context and the organizational behavior literature.

## **Attitude Change**

One prevalent theoretical model in attitude change, the Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1984), asserts two potential paths to attitude change: the central route and the peripheral route. The central route processes information which is message-based and the peripheral route involves cognitive, affective and social role mechanisms (Eagly & Chaiken, 1993). Although the original model did not specify these peripheral factors (Petty & Cacioppo, 1984), later researchers have posed theoretical variants which include specific mechanisms for the peripheral route and which allow for processing simultaneously on both systematic and unconscious routes (Eagly & Chaiken, 1993).

The ELM and related theories describing mechanisms for attitude change and persuasion do not directly address beliefs; however, the concept of distinguishing between the rational, systematic processing of a message and the psychological, emotionally based and potentially biased processing of a message is useful to the proposed study of information's effect on beliefs. Even information that is designed to be expository rather than persuasive is likely to activate both message-based and psychological or emotional processes in assessing both the truth of that information, as well as the necessitated change or maintenance of current beliefs, especially when those beliefs are value-relevant (Johnson & Eagly, 1989).

ELM and related theories posit that non-systematic, psychological or emotional causes influence attitude change. One particularly powerful psychological factor central to the change or maintenance of an individual's attitude is internal consistency (Fabrigar, Petty, Smith, & Crites Jr., 2006). Consistency research has addressed the importance of

beliefs by highlighting the relationship between attitudes, beliefs and behaviors (Petty, Wegener, & Fabrigar, 1997). The research has demonstrated that individuals strive for consistency between beliefs, attitudes and behaviors, and when this balance is off, individuals will change their beliefs, their attitudes, and/or behaviors (Eagly & Chaiken, 1993). The tendency towards consistency does vary across individuals—high-consistency individuals are more likely to hold beliefs that are inter-correlated and are more likely to have thoughts that would discredit or minimize the importance of contradictory information (Yates & Chaiken, 1985). For example, Tagler and Cozzarelli (2013) recorded participants' attitudes (generally positive or negative) toward poor people, and gauged beliefs about the causes of poverty. Attitudes and beliefs were computed into a consistency score, for example, beliefs that poverty is caused mainly by structural (rather than individual) factors were consistent with attitudes indicating positive feelings about poor people. Participants were later given a sign-up sheet to volunteer at a food pantry. Results showed that consistency between attitudes and beliefs was a significant moderator of the relationship between attitudes and willingness to volunteer (Tagler & Cozzarelli, 2013).

Also based on the idea of consistency, Balance Theory (Heider, 1958) has been used to demonstrate that individuals tend to like people who hold similar attitudes (and beliefs), and further, tend to agree with beliefs and attitudes held by persons who are liked. In a field experiment, Capon (1975) showed that magazine sales were highest when the salesman was rated as both more likable and more similar to the customer. More recent research by Davis and Rusbult (2001) has shown that individuals in close interpersonal relationships adjust their attitudes such that they align with the relationship

partner. In three experiments with college students and their dating partners, these researchers demonstrated that when dating partners had dissimilar attitudes, they addressed their discomfort by adjusting their own attitudes in favor of one another's attitudes. Further, dating partners were more likely to adjust attitudes in congruence with one another after a discussion than were individuals who engaged in conversations with strangers. (Davis & Rusbult, 2001).

Whereas Balance Theory is concerned with maintaining consistency between oneself and others, Dissonance Theory (Festinger, 1957) focuses on the internal drive to maintain cognitive consistency within oneself. Dissonance Theory asserts that inconsistency between attitudes and behaviors creates a tension that motivates cognitive change. In their classic study demonstrating the power of cognitive dissonance on attitude change, Festinger and Carlsmith (1959) found that subjects who were paid to tell another subject that a boring lab task was actually interesting reassessed their own attitudes after telling the lie. Those subjects paid only a dollar (compared to those paid \$20) for this behavior were much more likely to report a change in attitude towards the task, a phenomenon which researchers have attributed to the need to compensate for the inconsistency between their attitudes and behavior in the absence of a stronger financial incentive (Festinger & Carlsmith, 1959). In line with research on attitude consistency is research on resistance to attitude change, which is reviewed in the next section.

**Resistance to attitude change.** Since beliefs are central components of attitudes (Eagly & Chaiken, 1993), research on resistance to attitude change is particularly useful to understand why individuals may disbelieve information if belief would compel an undesired attitude change. In this section, I review several theories of resistance



(Reactance, Inoculation) as these theories provide empirical support that speaks to the way in which beliefs do/not shift and seem particularly relevant to the context of evaluating information regarding ethical firm behavior.

Reactance Theory (Brehm, 1966) is the resistance to change to preserve freedom. According to the theory, when individuals feel that their freedom to engage in a particular behavior, or to adopt a particular attitude is threatened, they respond by maintaining their position, or even by shifting their position in contrast to the threat such that they conclude the opposite. Brehm (1966) demonstrated that when a message is especially coercive, subjects become more resistant. For example, when given a persuasive message ending with, “you...must inevitably draw the same conclusion,” university participants were less persuaded to alter their initial attitude than students who received the same content without the closing directive (Brehm, 1966).

Empirical research based on Inoculation Theory gives insight into another mechanism which enables resistance. Inoculation Theory (McGuire, 1964) predicts that when faced with a persuasive message, individuals who think about counter-arguments for that message are less likely to be persuaded compared to individuals who do not process counter-arguments. In one study, participants who either developed or read arguments for and against equality were less persuaded by an anti-equality message than participants who had no access to counterarguments (Bernard, Maio, & Olson, 2003).

While the studies mentioned above provide evidence of the mechanisms by which individuals strive to maintain attitudes that reflect their values (e.g., Bernard et al., 2003) or based on pre-existing attitudes (e.g., Brehm, 1966), other work has demonstrated that individuals tend to maintain beliefs in the face of contradictory evidence even when those

beliefs are recently developed and illusory (Yarritu, Matute, & Luque, 2015). In one study, participants developed the (false) belief that a medicine was effective although it only cured the disease in half of the cases. In the second phase, a new medicine was introduced side by side with the first medicine, with solid evidence of effectiveness (produced the cure in 90% of cases), and yet participants were reluctant to abandon their belief that medicine A was more effective (Yarritu et al., 2015).

Theories regarding attitude change give some insight into the ways individuals negatively evaluate information when it conflicts with existing beliefs. The literature on cognitive biases and heuristics also provides evidence regarding the ways in which people process and evaluate information, however the focus of this research centers on decision making rather than attitude development and maintenance.

### **Biases in Evaluating Information**

Researchers have focused on evaluating information through the study of decision-making (Arad, 2013; DeKay, Miller, Schley, & Erford, 2014; Polman & Russo, 2012). The decision-making literature gives insight into some of the causes of individual misinterpretation or disbelief in information (e.g., Tversky & Kahneman, 1974).

Individuals often do not realize the extent to which biases affect their judgments (Kunda, 1990). For example, Uhlmann and Cohen (2007) showed that when individuals focused on their perceived objectivity, they were more likely to make biased judgments and to view those who held different beliefs as biased or uninformed. In Uhlmann and Cohen's (2007) first experiment, participants who were primed to think of themselves as personally objective were more likely to evaluate female job applicants less favorably

than male applicants for a stereotypically male job of factory manager. In Uhlmann and Cohen's (2007) second experiment, they found gender discrimination was even more prevalent among participants who perceived themselves as objective despite endorsing gender-based stereotypic beliefs. The authors attribute these findings to the likelihood that a sense of objectivity strengthens individuals' assumptions that their own beliefs are true and accurate, and therefore should be acted on. These findings are particularly relevant to the proposed studies and hypotheses as they demonstrate the increased effect of preexisting implicit biases even when personal objectivity is salient to an individual.

Several biases and heuristics, including the confirmation bias and anchoring and adjustment heuristics, are also relevant to this discussion. The confirmation bias refers to "unwitting selectivity in the acquisition and use of evidence." (Nickerson, 1998: 175). In many contexts and examples, individuals have been shown to seek out, or rate as higher quality, only information that endorses one's previously held attitudes (e.g., Hernandez & Preston, 2013; Knobloch-Westerwick, Mothes, Johnson, Westerwick, & Donsbach, 2015; Pennington, Schafer, & Pinsker, 2017; Winter, Metzger, & Flanagan, 2016). In Lord, Ross and Lepper's (1979) study, participants who either supported or opposed capital punishment were exposed to two alleged scientific studies, one which confirmed and one which disconfirmed their present beliefs. They were also provided with relatively equivalent critique articles, critiquing the methods and conclusions of each study. Study participants, regardless of ideology, rated the study that confirmed their own beliefs as of higher quality and as more convincing than the other study. Further, the study participants became more polarized in their original beliefs after assessing the information. (Lord, Ross, & Lepper, 1979). Another study found that when attitude

strength is high, individuals were unable to ignore prior beliefs about policy when evaluating new evidence and arguments (Taber, Cann, & Kucsova, 2009). Even when it comes to extremely strong evidence such as the overwhelming majority of scientists who argue that climate change is both human-caused and detrimental to the planet, researchers have shown that previously held ideologies influence individuals' assessments of whether scientific consensus exists (Kahan, Jenkins-Smith, & Braman, 2011).

Whereas the confirmation bias involves selective attention to desirable evidence, anchoring and adjustment occurs when individuals rely too heavily on initial evidence. Anchoring and adjustment is the process by which individuals "make estimates by starting from an initial value that is [insufficiently] adjusted to yield the final answer" (Tversky & Kahneman, 1974: 1128). In one study by Yaniv and Milyavsky (2007) designed to show the effect of anchoring on accepting advice, undergraduates were asked to estimate dates of historical events. After giving an initial estimate of the date, participants were given advice, in the form of others' estimates, in order to make a final decision. Despite being paid for accuracy, participants were more reliant on their own initial estimates, incorporating only pieces of advice that were similar to their original estimation. Epley and Gilovich (2001) showed that individuals may be more aware of the anchoring and adjustment process when an individual creates his own anchor, rather than having one provided externally. In one experiment, participants discussed aloud their process for estimating a historical date, and those participants who had not been provided an anchor by the experimenters were more likely to refer to anchoring and adjustment procedures in their verbalized process (Epley & Gilovich, 2001).

While the typical work on anchoring and adjustment has focused on making quantitative judgments or assessments, anchoring also has been used to explain trait inferences. One study found that individuals underestimate others' abilities and skills because they anchor on their overly positive evaluations of their own abilities and insufficiently adjust in estimating the abilities of others (Kruger, 1999). Related to research on bias, research on motivated reasoning focuses on the forces that drive individuals to make inferior decisions based on a desired outcome.

**Motivated reasoning.** Motivated reasoning refers not to a bias or heuristic, but rather serves to explain the motivational differences that lead individuals to seek different conclusions. "People rely on cognitive processes and representations to arrive at their desired conclusions, but motivation plays a role in determining which of these will be used on a given occasion" (Kunda, 1990). A body of research regarding motivated reasoning has shed light on the relationship between dissonance and cognitive biases in beliefs and attitudes by focusing on cognition as a motivated process. When individuals are motivated by a goal of accuracy in determining a belief, they are more likely to use complex processing and careful thinking and less likely to use cognitive shortcuts than when individuals are motivated by directional goals such as a goal to reach a desired conclusion (Kunda, 1990). A recent study showed that whether individuals were primed to think about their health care needs (accuracy) or to think about politics (partisan motivated reasoning) affected their ratings of evidence and choice of performance measures regarding the Affordable Care Act (Obamacare) (James & Van Ryzin, 2017).

Another research stream has attempted to assess the effect of social identity on the motivated reasoning process. One study showed that university students with strong

social identity, i.e., those for whom identification with the university was very important to self-esteem, were more critical of a report that negatively assessed student activities on campus and evaluated a positive report more highly than students with low social identity. The fictitious report was allegedly the result of a survey of student participation in, and satisfaction with, student activities on campus. (Dietz-Uhler, 1999). In another study focused on gender identity (Morton, Haslam, Postmes, & Ryan, 2006), male and female participants were given fabricated scientific articles purportedly showing cognitive gender differences. In the pro-male condition, the fictitious article concluded that the cognitive differences showed men were more efficient thinkers than women; in the pro-female condition, the same cognitive gender differences were used to argue that women were deeper and more careful thinkers than men. Participants of both genders were more likely to rate the research findings and methods more positively when the alleged findings were biased in favor of their own gender (Morton et al., 2006).

In the academic field of political science, recent work has combined the theoretical concepts behind both motivated reasoning and the confirmation bias. Thibodeau and colleagues (2015) found evidence of a belief bias whereby individuals were more likely to find ways to reject claims that were inconsistent with a real-world outcome by seeking out disconfirming evidence, than they were to seek out evidence that was inconsistent with claims regarding their ideologies. The researchers referred to this as “politically motivated reasoning” (Thibodeau, Peebles, Grodner, & Durgin, 2015). Winter and colleagues (2016) also addressed the confirmation bias and motivated reasoning in the context of social media activity. Individuals were prompted in one of four motivational conditions and were asked to select and view brief news articles on the

topic of national security versus privacy. Articles either favored one side clearly or presented a balance of both positions, and each article had a relatively high or low number of Facebook "likes," which provided social cues of endorsement. Although there were slight differences among participants assigned to different motivations, all participants were more likely to ignore articles that opposed their initial attitudes (i.e., developed on their own before the study), as well as to choose articles with higher numbers of likes, i.e., those for which there was a greater deal of social proof (Winter et al., 2016). Similarly, Knobloch-Westerwick and colleagues (2015) presented participants with website search results on controversial topics. For each topic, two articles aligned with initial attitudes and two articles conflicted with initial attitudes. Of those, half of the articles came from a credible source, such as a nonprofit organization, and half came from low-credibility sources (personal blogs). Although source credibility influenced information search, individuals were much more likely to seek out the information that aligned with initial attitudes (Knobloch-Westerwick et al., 2015).

In this chapter, I have reviewed the psychological literature on beliefs and the related literature on attitude change. Resistance to attitude change occurs through mechanisms such as the confirmation bias and inaccurate assessment of information. As beliefs are the foundations on which attitudes exist (Eagly & Chaiken, 1993), the theoretical implications suggest that belief revision is influenced by similar factors and relationships as attitude change. In the next two chapters, I will discuss the study of belief revision in the context of management and organizational life, and then I will discuss specific beliefs about corporate ethical behavior and the transmission of information to set the context for the proposed studies.

### **CHAPTER 3: ORGANIZATIONAL RESEARCH ON BELIEFS, EVALUATION OF INFORMATION AND INFORMATION SHARING**

Research on beliefs and attitude change in the management literature has typically focused on consumers (e.g., with regard to marketing), but in more recent work, scholars have turned their attention to belief and attitude change in employees (e.g., Bommer, Rich, & Rubin, 2005; Slaughter, Cable, & Turban, 2014). For example, research has shown that cynicism about organizational change was reduced by transformational leadership behaviors (Bommer et al., 2005). More recently Slaughter and colleagues (2014) surveyed potential U.S. Armed Forces recruits before and after meeting with a recruiter. The researchers found that participants who had low confidence in their beliefs about the Army's organizational image and job attributes were more likely to change their beliefs after meeting with recruiters, compared to those with high confidence in their beliefs (Slaughter et al., 2014).

One recent study has shown that when the personal beliefs of employees conflict with directions from management, employees are more likely to resist those directions (Raaijmakers, Vermeulen, Meeus, & Zietsma, 2015). In the study, Dutch childcare workers who believed children in childcare should focus on play rather than education asserted they would be more likely to delay or resist the implementation of educational tools mandated by management (Raaijmakers et al., 2015).

#### **Beliefs About Corporate Social Irresponsibility**

Most of the previous research on individuals' responses to corporate ethical behavior have focused on the role of corporate socially responsible behavior in individual judgments of—and interactions with—a firm, but recent work has begun to explore the



role of corporate social irresponsibility on individual actors. Drawing on attribution theory, Lange and Washburn (2012) assert that individual observers of the firm make subjective assessments of irresponsibility based on a number of factors related to the firm (e.g., perceived prominence of the firm) and the effects on relevant parties (e.g., degree of harm). However, individuals are often subject to biases including selective attention and skewed interpretation (Fiske & Taylor, 1984). For example, Lange and Washburn (2012) argue that social identification with the firm, social identification with the affected party, and perceived tendency of the firm to behave irresponsibly can all affect a determination of irresponsibility.

While some research focuses on corporate social responsibility (CSR) and stakeholders, we do not yet know much about what happens when stakeholders are confronted with information that would negatively affect their present beliefs about a firm. How is that information evaluated? When is information incorporated into revised beliefs? And to what extent is that information shared with others?

### **Evaluation of Information**

Research in the organizational behavior literature has begun to explore the effects of previous decisions on the evaluation of new information. As noted in the previous chapter, resistance to change is pervasive in human cognition, and individuals demonstrate a strong tendency to maintain the status quo (e.g., Kahneman et al., 2012; Samuelson & Zeckhauser, 1988; Schweitzer, 1994). For example, Arad (2013) examined the effect of initial decisions on attitude change in both a management and non-management context. In this study, participants evaluated and chose among hypothetical

women who wished to adopt a child. Results demonstrated that individuals were more likely to make a new choice when their original selection was removed from contention, rather than when a new choice was added. Further, participants rated the attributes of their chosen adoption candidate (e.g., marital status, income) as more important to selection (Arad, 2013). In a second experiment, participants awarded more resources from their fictional employer to the charitable organization that was their initial choice, even when additional options were presented (Arad, 2013).

Biased evaluation (also called distortion, e.g., Polman & Russo, 2012) of information is another area of focus in the organizational behavior literature that is relevant here. Polman and Russo (2012) found that when individuals increase their commitment to a choice, they are more likely to distort additional information. In several experiments, these researchers asked participants to choose a preferred restaurant based on a single attribute that favored one of the restaurants. Commitment was manipulated by having participants circle a box (low commitment) or spend 10 seconds darkening a box (high commitment). Participants then assessed subsequent pieces of information designed not to favor either restaurant. Results showed that high commitment participants were more likely to positively evaluate the neutral information when it supported their preferred restaurant (Polman & Russo, 2012).

In a related study, DeKay and colleagues (2014) found that after choosing a first and a last choice among two apartments for rent, study participants positively distorted subsequent information about the apartments in favor of the leading preference and negatively distorted information supporting the trailing preference. Additionally,

participants showed evidence of memory distortion regarding the information, in accordance with favoring the leader (DeKay et al., 2014).

Even when there is only one choice to accept or reject, individuals distort additional pieces of information after basing an attitude on the first piece of information they receive, whether buying a tech device, awarding a scholarship or perceiving the favorability of information regarding probability and financial valuation (Bond et al., 2007). Importantly, research has found that individuals may even rely on irrelevant information when making decisions (Hall, Ariss, & Todorov, 2007). In one set of studies, Hall and colleagues (2007) gave study participants statistical data to predict the winners of basketball games. When participants were given the team names as well, they were less likely to use the statistical data and more likely to make incorrect predictions. They also felt more confident about these predictions (Hall et al., 2007). In short, a growing body of research on beliefs and attitudes appears in the organizational literature but it is not focused specifically on unethical firm behavior. In the next section, I will review research on individual beliefs and expectations regarding firms and corporate irresponsibility, as well as the limited research on when individuals choose to share this information with others.

### **Information Sharing**

Researchers have identified multiple factors that make people more likely to share information including self-enhancing factors, such as attempting to generate a specific impression or to share more useful information to appear knowledgeable, and social bonding factors such as sharing more interesting or more emotional content (see review

by Milkman & Berger, 2014). In one study, the authors replicate these findings with regard to sharing of scientific information. They find that when scientists describe their findings in more useful, interesting and emotional ways, non-scientists are more likely to share that information with other non-scientists (Milkman & Berger, 2014).

As discussed previously, it is well known that individuals select information for themselves that aligns with their present beliefs (confirmation bias). However, there is very little research that addresses bias in information sharing, with one notable exception: across several experiments researchers found that study participants were less likely to advocate publishing the results of a (fictitious) scientific study when there were unexpected results. The researchers attributed this response to “error model explanations,” in which individuals conclude that evidence is flawed and should be treated as an error, in order to preserve the original theory (Davis & Fischhoff, 2014). However, there is still very little research that has investigated when information conflicts with existing beliefs, and how this information is shared in an organizational setting.

In this chapter, I have reviewed the management literature on general beliefs, beliefs regarding corporate social irresponsibility, how individuals evaluate information, and conditions under which they share information. In the next chapter, I address the role of accountability on the process of belief revision.

## **CHAPTER 4: ACCOUNTABILITY**

At present, there is no widely acknowledged intervention to prevent low quality or unethical decisions that result from motivated reasoning and other cognitive biases. However, recent work has identified a few factors that can improve ethical decision making, such as time to process the decision (Bodkin & Stevenson, 2007; Gino, Schweitzer, Mead, & Ariely, 2011), increased cognitive load, and comparative evaluations (Paharia, Vohs, & Deshpandé, 2013). For example, in a series of studies, Paharia and colleagues (2013) found that individuals were more likely to use motivated reasoning to justify sweatshop labor conditions when a purchase was for oneself, but under increased cognitive load, the tendency to rationalize decreased. Additionally, participants rationalized poor labor conditions at a desirable firm (Apple computers) as more ethical when they evaluated the company alone as opposed to evaluating it alongside another company (Paharia et al., 2013). When Apple's conditions were presented alongside Hewlett Packard's and Hewlett Packard's conditions were described as better, study participants rated Apple as more unethical (Pahria et al., 2013). These studies demonstrate how cognitive load and joint evaluations affect motivated reasoning.

In many situations, including an organizational setting, people are not able to control factors known to alter ethical decision-making (Gunia, Wang, Insead, Wang, & Murnighan, 2012). Likewise, it may not be practical to increase an employee's cognitive load, or to frame every ethical choice as a comparison. Therefore, the factors known to improve ethical decision-making are not easily implemented across work settings.

In the organizational setting, research suggests a stronger sense of accountability—and specifically what one is accountable for—may assist individuals in

more easily identifying the right decisions for their situations. In their review of the literature, Lerner and Tetlock (1999) noted that accountability has been shown to both mitigate and magnify cognitive biases. In this section, I review the research on accountability as it relates to decision making. First, I review the research that looks at general accountability, and then I focus on the distinction between process accountability and outcome accountability, as it has been studied in the management literature.

Within the management literature, accountability has been shown to diminish biases toward racial minorities. For example, in a field experiment by Ford and colleagues (2004), Caucasian sales managers were given similar résumés of African American and Caucasian applicants. Because participants were selected for the study by their supervisors, sales managers in the accountable condition were informed they would be asked to justify their evaluations in a discussion with their supervisors. Sales managers in the accountable condition were more likely to rate black applicants more positively, and to choose them more frequently than were managers without accountability (Ford et al., 2004).

Similarly, in a longitudinal study of teachers, Pit-ten Cate and colleagues (2016) found that when teachers were primed to be accountable, they made more accurate decisions and showed less bias in assigning minority students to an educational track. Accountability was not assigned, but rather prompted by asking participants to rate how accountable they felt for their decisions on a 9-point Likert-type scale (Pit-ten Cate et al., 2016).

## **Process and Outcome Types of Accountability**

Researchers have distinguished between process accountability and outcome accountability (e.g., de Langhe, Van Osselaer, & Wierenga, 2011; Tetlock, Vieider, Patil, & Grant, 2013; Verwaeren et al., 2016). Tetlock and colleagues (2013:22) explained, “Under pure process accountability, employees expect to justify efforts and strategies used to generate results. The focus is on inputs, not outcomes. Under pure outcome accountability, the focus flips: employees expect to deliver tangible, end-state results, with little interest in explanations of how they did it.”

Much of the research seeking to differentiate the effects of process accountability from outcome accountability has posited that process accountability results in better decision making than outcome accountability (Brtek & Motowidlo, 2002; Pitesa & Thau, 2013; Scholten, van Knippenberg, Nijstad, & De Dreu, 2007; Siegel-Jacobs, Yates, & Yates, 1996). For example, research from Siegel-Jacobs and Yates (1996) showed that outcome accountability was associated with lower-quality decisions than process accountability when participants were asked to evaluate potential jurists. Similarly, Brtek and Motowidlo (2002) found that participants in the process accountability condition made more valid judgments when watching interviews than did those in the outcome accountability condition.

Process accountability is generally identified in behavioral research by informing participants that they will be evaluated based on their decision-making process, and/or informing participants that they will later be asked to justify their strategy or decision-making process (e.g., de Langhe et al., 2011; Scholten et al., 2007). Much of the work on outcome accountability has focused on financial outcomes, e.g. profit (Pitesa & Thau,

2013; eg., Verwaeren et al., 2016), on judgment quality (Brtek & Motowidlo, 2002; Siegel-Jacobs & Yates, 1996) or on the accuracy of participants' predictions (de Langhe et al., 2011). For example, Verwaeren and colleagues (2016) found that participants accountable for profit (outcome accountability) rather than procedure or strategy (process accountability) were less innovative in making managerial decisions regarding a virtual lemonade stand. In three different studies by Pitesa and Thau (2013), participants who felt more powerful made riskier investment decisions under moral hazard than those with less power, or who felt less powerful; however, process accountability (but not outcome accountability) attenuated this effect. Brtek and Motowidlo (2002) asked participants to evaluate employee interviews that had previously been evaluated by the employees' own supervisors. The study found that participants who were accountable for their judgment process made evaluations that were more consistent with supervisors' evaluations than did participants who were accountable for the accuracy (outcomes) of their judgments. Here outcome accountability was manipulated by informing participants that they would be asked to justify the discrepancies between their own and experts' ratings (Brtek & Motowidlo, 2002).

Although studies have considered different types of outcomes, researchers have not examined accountability for different types of outcomes in the same studies. Hall and colleagues explained that while process accountability "may lead to more valid and perhaps less variance in outcomes, theory and research have not specified when particular outcomes yield better end results" (Hall, Frink, & Buckley, 2015: 9).

As Tetlock and colleagues (2013) argued, holding employees accountable for outcomes in the workplace has a longstanding tradition of tacitly implying that



measurable outcomes are to be pursued, regardless of the tactics taken to reach those outcomes. However, social values and outcomes, such as CSR and sustainability, can also be seen as having intrinsic worth for a firm. Given the recent calls to value stakeholder, rather than—or in addition to—shareholder management, financial measures should not be the only form of outcome used to judge firm performance. For example, recent research has demonstrated that in Japanese firms, gender diversity in both management and boards of directors is slowly but steadily increasing due to pressures from foreign and local investors and other stakeholders, who expect higher levels of CSR, despite the local norms which traditionally exclude women from long-term employment (Mun & Jung, 2018).

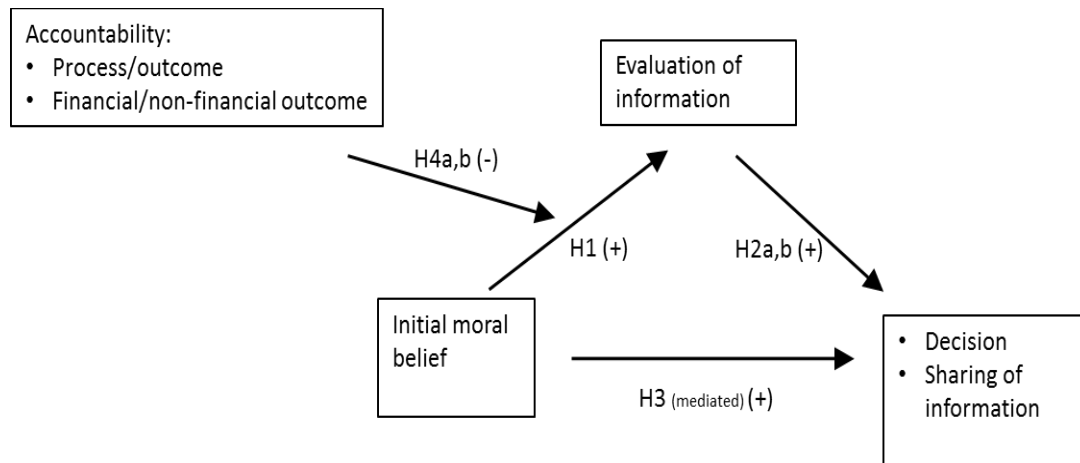
## **Model and Hypotheses**

Over the last several chapters, I have reviewed the psychology and organizational literature on beliefs and belief change, the evaluation and sharing of information, and the effects of accountability on decreasing cognitive bias. Here I propose a model (Figure 1) and hypotheses for testing, in order to better understand the relationships between these factors.

I propose that when individuals receive information that confirms their preexisting beliefs, they will be more likely to positively evaluate that information (H1), and in turn they will be more likely to share and to make decisions based on that information (H2a, H2b, H3) compared to individuals who receive information that conflicts with their beliefs. H1 has been well explored in the literature but is essential to examining how initial beliefs relate to sharing information in the organizational context.

To the best of my knowledge, there is no research examining the evaluation of information as a mediator between belief-conflicting information and decision making based on that information. I also propose that accountability will moderate the relationship, such that individuals who receive belief-conflicting information will be more open to information when they are under process accountability compared to outcome accountability (H4a) and non-financial outcome accountability compared to financial outcome accountability (H4b).

**Figure 1. Proposed model.**



Hypothesis 1. Individuals will evaluate information that aligns with their moral beliefs more positively than information that conflicts with their moral beliefs.

Hypothesis 2a. Evaluation of information quality will relate positively to incorporating the information into decision-making.

Hypothesis 2b. Evaluation of information quality will relate positively to sharing the information.

Hypothesis 3. Evaluation of information quality will mediate the relationship between information that conflicts with present moral beliefs and decision-making.

Hypothesis 4a. Process accountability will have a stronger effect than outcome accountability in moderating the relationship between initial moral beliefs and the evaluation of information such that when process accountability exists, the effect of belief-conflicting information on the evaluation of information will be weaker.

Hypothesis 4b. Non-financial outcome accountability will have a stronger effect than financial outcome accountability in moderating the relationship between initial moral beliefs and the evaluation of information such that when non-financial outcome accountability exists, the effect of belief-conflicting information on the evaluation of information will be weaker.

In the next three chapters, I present the results of a pre-test and four experiments to test these hypotheses. Studies 1a and 1b directly address the extent to which individuals believe information about firms' unethical behavior. During these studies, participants are asked to evaluate information as a corporate customer choosing among suppliers. Participants then make a budget allocation based on their evaluations. In Study 1a, financial outcome accountability and non-financial outcome accountability are

manipulated and tested, and in Study 1b, process accountability and a control group with no accountability are added.

In order to control for the effect of existing opinions and attitudes on the evaluation of information, Studies 1a and 1b use fictitious companies. Therefore, an initial belief must be manipulated at the start of the study (i.e., that a fictitious company is an ethical and positively regarded firm). One limitation of this design may be that recently manipulated beliefs do not function the same way as naturally occurring or longer-held preexisting beliefs. In response to this limitation, I present Studies 2a and 2b which are designed to capture participants' preexisting beliefs, and the effect of accountability, by using an ethical issue that affects firms. Additionally, Studies 2a and 2b test the theoretical model using a different context and decision: when will individuals share information that conflicts with their beliefs?

## CHAPTER 5: PRE-TEST

### Participants and Design

I conducted a pre-test of materials planned to test my model. The study included 152 undergraduate business students (41% female, mean age = 22) who participated in the school's behavioral laboratory program for course credit<sup>1</sup>. The study design was a 2 (initial belief: believes Alpha/Beta is ethical) by 3 (accountability: financial outcome, social outcome, control) between subjects design. Participants were randomly assigned to groups through the Qualtrics software which hosted the questionnaire. Participants, in the role of purchasing agent for their employer, were asked to evaluate potential suppliers for a business transaction. For all scenarios and measures, see Appendix C.

### Procedure

Participants sat at individual carrels and completed the study in one sitting. Participants were instructed, *"Imagine that you are a Procurement Analyst for Nova Inc., a United States based consumer electronics firm. Your manager, the Vice President of Procurement, has assigned you the job of identifying and recommending suppliers among those who have bid for production of a chipset in Nova's latest smart phone offering, and making a recommendation to your manager."*

In order to ensure that participants had no previous opinion of the supplier companies, fictitious companies were created. Therefore, an Initial belief was manipulated by informing participants in the initial belief A (B) group, *"You are really*

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<sup>1</sup> Participants who failed to answer an attention check statement (*"For this statement, please check 'somewhat agree'"*) were dropped from subsequent analysis (n=31) leaving a total sample of 121 study participants.

*happy to see that Alpha (Bravo) submitted a bid for the new project. Alpha (Bravo) is a well-known company and the other firms are not familiar to you. You believe Alpha (Bravo) is an ethical company.*” Participants were then asked for an initial belief about which of the three companies (Alpha, Bravo, Delta) was the best choice.

Next, outcome accountability was manipulated with one of the two following statements: *“I understand that for this task, my manager will evaluate me based on how well my decision ultimately affects Nova Inc.’s financial performance”* or *“I understand that for this task, my manager will evaluate me based on how well my decision ultimately affects Nova Inc.’s strong social responsibility.”* In the control group, this item was not present. When accountability is present, the audience to whom one is accountable can affect decisions (e.g., Mero, Guidice, & Werner, 2014; Tetlock, Skitka, & Boettger, 1989). In particular, when the audience’s views are known, individuals are more likely to make decisions that align with these views (Lerner & Tetlock, 1999). Therefore, to control for audience view, participants were informed in the cover story that the manager was not familiar with any of the suppliers.

All participants then received the fictitious results of a Google news search on each supplier company Alpha, Bravo and Delta in random order to control for order effects (see Appendix C: News search results). Both Alpha and Delta had ethically neutral news briefs which reported content such as product and structural developments. The search results for Bravo contained news items based on ethically charged news items regarding an actual firm with a history of human rights violations (Foxconn), such as reporting on employee suicides and sweatshop-like working conditions.

Participants were then presented with a table listing each supplier company's price per unit, estimated delivery date, and approximate cost to the participant's employing company. These were designed so that ultimate cost would be approximately equivalent across all three companies (see discussion section), and they were asked to allocate a percentage of their supply budget across one or more of the three companies. Finally, participants were asked to explain their budget decision and respond to a series of 7-point Likert scale items (1=strongly disagree) containing manipulation check questions and the attention check question, followed by a series of demographic items.

## Measures

**Accountability.** The accountability manipulation was checked by asking participants their level of agreement (7-point scale; 1 = strongly disagree) with six statements. Three of these statements focused on financial outcome accountability, e.g., *"I am primarily accountable for the net gain or loss that results from my decision."* Three of these statements focused on social responsibility outcome accountability, e.g., *"My goal on this task was to make the best decision for my company's social responsibility"* (see Appendix C: Manipulation checks).

**Initial beliefs.** The initial belief manipulation was tested by asking participants their level of agreement with six Likert items (7-point scale; 1 = strongly disagree) such as *"At the start of the study, Alpha seemed like the most ethical choice."* Additionally, participants were asked after the initial manipulation prompt, *"Which firm do you think is the best choice?"* (see Appendix C: Manipulation checks).

**Behavior.** To gauge the study participants' willingness to act on information, the percentage of the supply chain contracted awarded to Bravo was used.

## Results

**Manipulation checks.** Manipulation check scale items for financial accountability (Cronbach's  $\alpha = 0.42$ ) and social accountability (Cronbach's  $\alpha = 0.53$ ) did not form reliable scales. Analyses of variance for each of the six accountability items individually (e.g., "*I am primarily accountable for the net gain or loss that results from my decision*") showed non-significant differences between means for the financial and social outcome accountability groups. This may be because, regardless of the accountability manipulation, participants assume the business context always implies financial accountability, or it may be because of confusing language in the manipulation prompts. These groups were collapsed into a single accountability group for the remainder of the analyses.

Three items measuring a belief that Bravo was an ethical company, asked at the end of the study, formed a scale with a Cronbach's  $\alpha$  of 0.69.

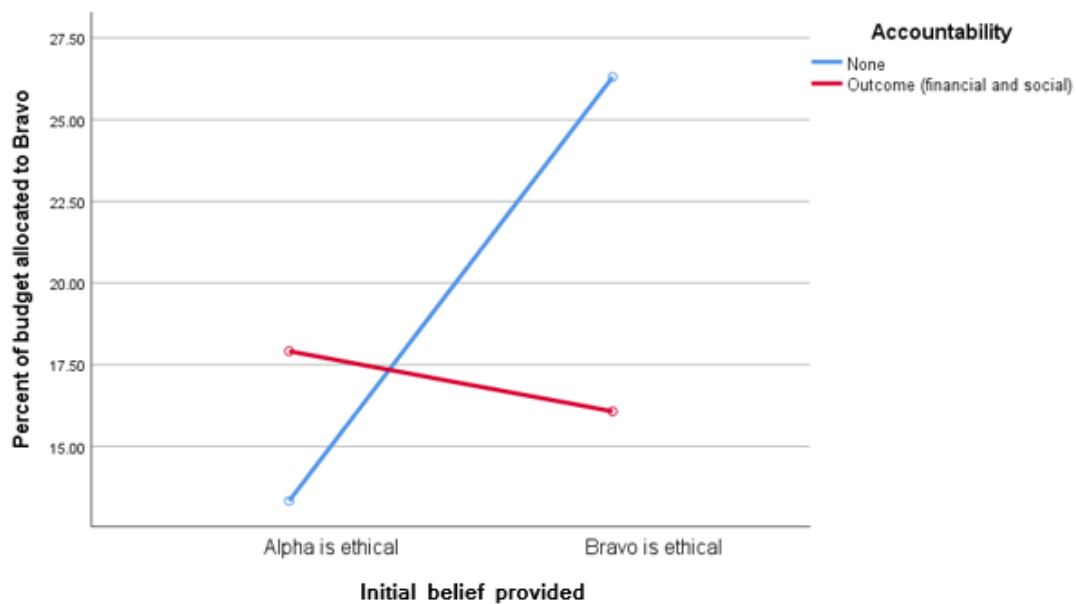
**Additional analyses.** Although not hypothesized in the model, means within the sample that received no accountability manipulation ( $n = 38$ ) were examined in order to test the effect of initial belief on individual behavior without confounding the results with the accountability manipulation. Participants who were assigned to favor Bravo ( $n = 20$ ) awarded the company a higher percentage ( $M = 26.3\%$ ;  $SD = 21.83$ ) than did those in the Alpha group ( $n = 18$ ;  $M = 13.33\%$ ;  $SD = 13.83$ ).

The effect of accountability as a moderator on the relationship between initial belief and behavior was tested with a univariate linear model. Although this model is not



significant ( $p > .10$ ), the results suggest with a more careful experimental design, support for the hypotheses may exist. In particular, the experimental conditions for initial belief and accountability are in line with an interaction effect even though the model itself is not statistically significant. Those in the Bravo x Accountability condition awarded Bravo roughly the same percentage as the Alpha groups (16.07%) and those in the Bravo x No accountability condition gave Bravo the highest percentage of any group (26.3%). See Figure 2.

**Figure 2. Pre-test. Effect of initial belief and accountability on percent of budget allocated to Bravo.**



$p = n.s.$

## Discussion

The study results are directionally in line with the theoretical model. In particular, individuals were less likely to act upon information that conflicts with their present

beliefs (supported at the  $p < .05$  level). Although the accountability moderator was not statistically significant, the results were also directionally in line with the prediction. It is important to note that while participants do not have an initial belief about the company's ethicality, they do have their own pre-existing beliefs regarding both the ethicality of supply chain human rights violations, and the importance of financial cost in any business decision, which may cause noise in the study results.

By examining only those participants in the accountability control group, there is some evidence that the negative Google results were discounted when they conflicted with the study participant's initial belief. The differences in behavior between the two groups, who only differed in the initial belief given at the start of the experiment, suggest that the study participants evaluated the negative information regarding Bravo differently. Compared to those with an initial preference for Alpha, the Bravo group awarded a higher percentage to Bravo? despite seeing the same negative search results regarding Bravo.

Second, as seen in Figure 2, the largest effect occurred within the group told that Bravo was a familiar and ethical company. Those without accountability awarded Bravo approximately 63% more than did those in the no accountability conditions.

Although this pre-test had some design flaws which needed adjustments and the results were not statistically significant, this pre-test allowed for the identification of areas for improvement. Participants were asked to give an explanation for their choices, and this information provided some insight into the ways they interpreted the materials. One issue identified within the materials was that the table of estimated delivery dates and unit costs from each supplier was interpreted differently by different participants.

Although participants seemed to recognize that the estimated overall cost was equivalent, some based their decision on delivery date alone, others preferred the lowest cost per unit, and others explained that the company with the higher cost per unit likely had a better product. In the next two experiments, this information is balanced. Similarly, participants made unexpected value judgments between Alpha and Delta, the two companies who were designed to be equally attractive. For example, some participants responded to particular news items as a positive reason to invest in that supplier, whereas other participants viewed those same news items as indicators of risk.

Finally, the manipulation check for accountability was non-significant, although there does seem to be some evidence of an effect. In Studies 1a and 1b, the accountability manipulations give participants the expectation that their decisions will actually be evaluated, and accountability for more than one outcome will be examined.

## **CHAPTER 6: STUDY 1A AND 1B**

### **Study 1a**

Study 1a is based on the pre-test presented in the previous chapter. The aim of Study 1a is to examine the proposed model with an ethical decision-making scenario in an organizational context, using fictitious companies such that no previous beliefs exist. The substantial differences over the pre-test include a change in the initial belief conditions, removal of the distractor company, and revised prompts for the accountability conditions. (For full scenarios and measures, see Appendix D).

### **Participants and Design**

Study 1a is a 2 (initial belief: believes Beta is ethical/no belief) by 2 (accountability: financial outcome/social outcome) between subjects design, which was conducted with 134 adults (51% female, mean age = 35 with mean full-time work experience = 13.19 years). The study was conducted using the Amazon Mechanical Turks platform and a Qualtrics questionnaire.

### **Procedure**

Participants were instructed, *“Imagine that you are a Procurement Analyst for Nova Inc., a United States based consumer electronics firm. Your manager, the Vice President of Procurement, has assigned you the job of identifying and recommending suppliers among those who have bid for production of a chipset in Nova’s latest smart phone offering, and making a recommendation to your manager.”*

Participants were randomly divided into two initial belief groups. Participants in the initial ethical belief group read, *“You are really happy to see that Beta submitted a bid for the new project. Beta is a well-known company and the other firms are not familiar to you. You believe Beta is an ethical company.”* Participants in the control group received no comparable message.

Next, accountability was manipulated. Participants in the social outcome accountability group were instructed, *“Your employer values its status as a socially responsible company. When you choose a supplier, you are accountable for the social performance (i.e., the harms or benefits to society, the community, the environment, etc.) of your decisions, rather than the processes or financial outcome. Your decisions will be evaluated by managers based on the likely social performance of your decisions. After the study, you will be asked to write a short explanation to justify the social outcomes of your decision.”* Participants in the financial outcome accountability group read, *“Your employer values its status as a profitable company. When you choose a supplier, you are accountable for the financial outcomes of your decisions, rather than the processes or any other outcomes. Your decisions will be evaluated by managers based on the likely financial outcomes of your decisions. After the study, you will be asked to write a short explanation to justify the financial outcomes of your decision.”*

All participants then received the fictitious results of a Google news search on each supplier company Alpha and Beta in random order to control for order effects (see Appendix D: News search results). The news results for Alpha were ethically neutral while the news results for Beta indicated sweatshop conditions and mistreatment of employees.

Participants were then presented with a table listing both supplier companies' price per unit, estimated delivery date, and approximate cost to the participant's employing company; Beta's cost was considerably less than Alpha's. Participants were then asked to allocate a percentage of their supply budget across one or both of the companies. Finally, participants evaluated the news information they reviewed on a series of slider scale items including, "*The information in the Google search was informative*" and "*The information in the Google search was reliable*" (see Appendix D: Evaluation of information). Participants also responded to a series of 7-point Likert scale items (1=strongly disagree) containing manipulation check questions (see Appendix D: Manipulation checks), reading comprehension questions regarding the Google search results, and a series of demographic items.

## Measures

**Evaluation of information.** This was measured with two 5 item slider scales ( 1 = strongly disagree; 100 = strongly agree), for usefulness (e.g., "*The information in the Google search was informative*") and credibility (e.g., "*The news briefs I reviewed contained true information,*" see Appendix D: Evaluation of information).

**Budget allocation.** The percentage of the budget awarded to Beta was used to gauge study participants' willingness to act on information.

## Results

**Manipulation checks.** A chi-square test found a significant difference between accountability groups in response to the question "In this task, which of the following

were you primarily accountable for?”  $X^2(2, n = 133) = 77.61, p < .01$ . In response to the question “How ethical do you believe the following companies to be? (Beta),” there was a significant difference between groups,  $t(132) = 6.51, p < .001$ , such that participants assigned an initial ethical belief regarding Beta rated Beta as more ethical ( $M = 85.40; SD = 14.99$  on a scale of 1 to 100) than participants in the control group ( $M = 61.58; SD = 19.81$ ).

**Reading comprehension checks.** Two questions asked participants to recall information that was presented in the Google search results about the two companies. 92.5% of participants correctly answered the question, “Which company recently promoted Thompson to the position of Managing Director?” and 88.9% of participants correctly answered, “Which company had a riot at one of their factories?”

**Evaluation of information.** A principal axis factor analysis (see Table 1) with varimax rotation indicates two distinct factors, credibility (Cronbach’s  $\alpha = .96$ ) and usefulness (Cronbach’s  $\alpha = .94$ ). The statement “The news briefs I reviewed are not trustworthy. (reverse coded)” was removed as it did not map onto the scale.

**Table 1. Study 1a. Factor analysis for evaluation of information scales**

	Information Usefulness	Information Credibility
The information in the Google search was useful.	<b>.859</b>	.291
The information in the Google search was informative.	<b>.838</b>	.261
The news briefs I reviewed helped me choose the best supplier.	<b>.893</b>	.133
The news briefs I reviewed contained valuable information.	<b>.844</b>	.337
The Google information was of use to me.	<b>.885</b>	.303
The information in the Google search was accurate.	.330	<b>.878</b>
The information in the Google search was reliable.	.337	<b>.892</b>
The news briefs I reviewed contained credible information.	.344	<b>.876</b>
The news briefs I reviewed are not trustworthy. (reverse coded)	.035	.484

The information in the Google search was dependable.	.346	<b>.863</b>
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Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization.  
Rotation converged in 3 iterations.

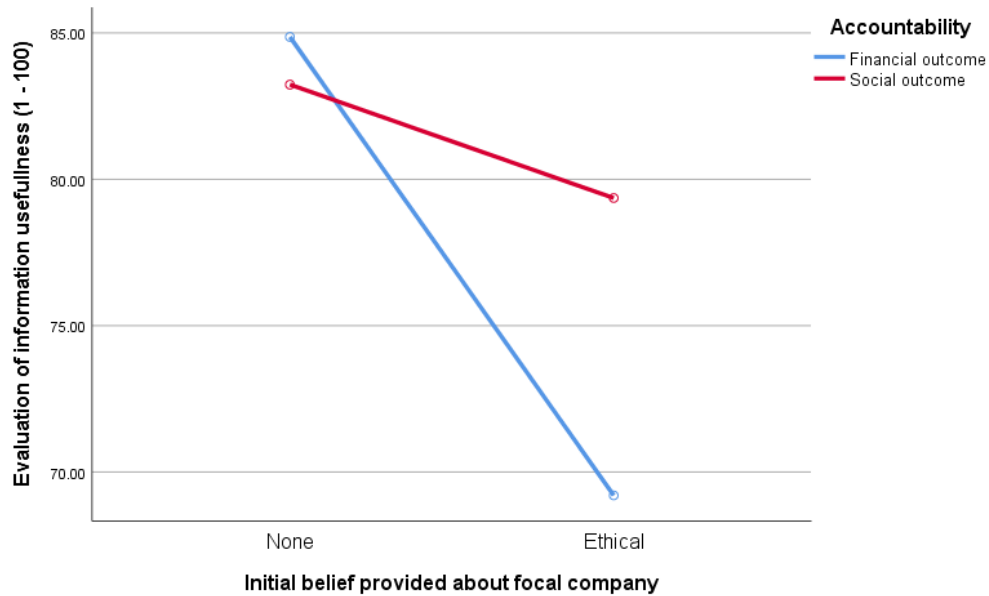
**Hypothesis Testing.** H1 predicted a relationship between initial belief and evaluation of information, and H4b predicted that this relationship would be moderated by accountability. A general linear model shows that when evaluating information *usefulness*, there is a significant difference,  $F(1,133) = 10.42, p < .01$ , between those with an initial belief that Beta is ethical ( $M = 74.14, SD = 19.32$ ; scale = 1 to 100) and those with no initial belief ( $M = 83.97, SD = 15.60$ ). Results also indicate a non-statistically significant moderation interaction between initial belief and accountability,  $F(1,133) = 3.79, p = .054$ . Figure 3 demonstrates that when there is no initial belief about the supplier company, participants rate the information as fairly useful, and there is no effect of accountability. However, when the initial belief is present, there is a significant difference between the accountability groups, such that the participants who are accountable for social performance find the information more useful than those who are accountable for financial outcomes.

In a separate general linear model evaluating information *credibility*, a significant difference emerges,  $F(1,133) = 8.78, p < .01$ , between those with an initial belief that Beta is ethical ( $M = 69.73, SD = 15.77$ ; scale = 1 to 100) and those with no initial belief ( $M = 77.44, SD = 16.03$ ), and a significant moderation interaction between initial belief and accountability ( $F = 9.46, p < .01$ ). See Figure 4. One might expect that a financially accountable employee would find the information about a supplier's unethical behavior to be equally useless regardless of initial belief. However, the study results demonstrate that when individuals believe the company is ethical, those with financial accountability



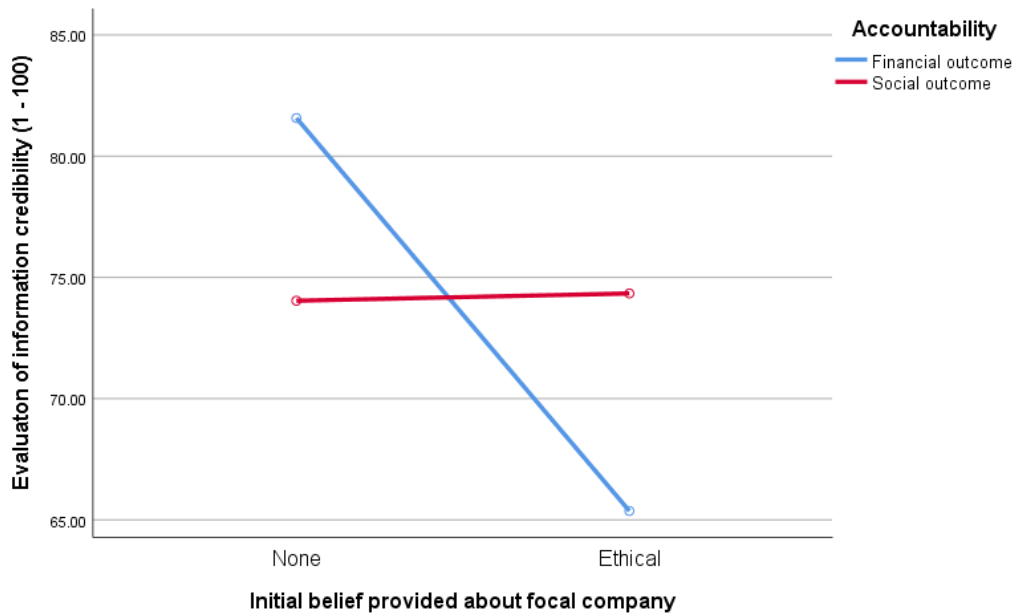
find the information to be less useful and less credible. This may be due to a form of reactance, which results in participants more strongly rejecting any information about the supplier's unethical behavior.

**Figure 3. Study 1a. Effect of initial belief and accountability on the evaluation of information usefulness.**



*p* < .01 (initial belief) *p* = .054 (accountability moderator)

**Figure 4. Study 1a. Effect of initial belief and accountability on the evaluation of information credibility.**



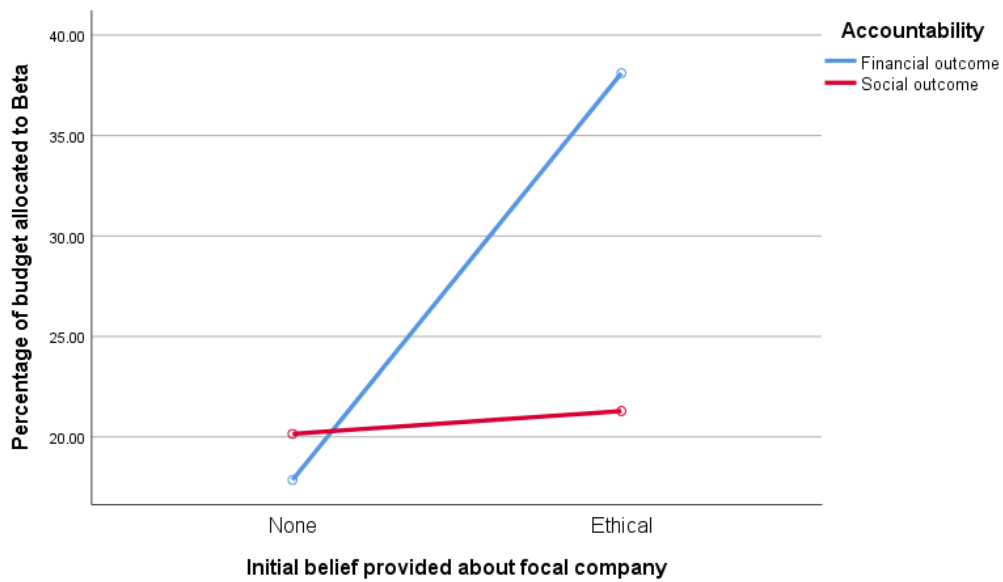
*p < .01 (initial belief); p < .01 (accountability moderator)*

H2a predicts that evaluation of information quality will be positively related to behavior. Results of independent general linear models show that information usefulness,  $F(1,133) = 40.03$ ,  $p < .01$ , but not information credibility,  $F(1,133) = .11$ ,  $p > .05$ , predicts the percent of the budget allocated to Beta company.

H3 suggests that evaluation of information mediates the relationship between initial belief and behavior. The full moderated mediation model was analyzed using the bootstrapping technique in Hayes' (2013), PROCESS macro model 7. The model explained a significant proportion of variance in the percentage of the supply contract allocated to Beta,  $R^2 = .34$ ,  $F(2, 130) = 33.82$ ,  $p < .001$ . Although no direct effect of initial belief was found on behavior, there was a significant indirect effect between the interaction of accountability and initial belief on behavior, through the mediator,

evaluation of information usefulness as the 95% confidence intervals did not contain zero (Index = -11.3453; BootSE = 5.6707; BootLLCI = -23.0708; BootULCI = -.4771), supporting H4b. See Figure 5.

**Figure 5. Study 1a. Effect of initial belief and accountability on the percentage of budget allocated to Beta.**



*p* = n.s. (initial belief - direct); *p* < .01 (accountability moderator)  
*P* < .001 (initial belief – indirect)

## Discussion

Study 1a provides general support for the proposed model and demonstrates that evaluating information as useful mediates the relationship between initial belief and behavior. That is, participants who initially believed Beta to be an ethical company were less likely to find the negative news results useful and less likely to evaluate the results as credible compared to participants with no initial belief. However, in this study, only information usefulness predicted behavior and mediated the relationship between initial

belief and behavior. Further, while not a statistically significant finding ( $p = .054$ ) the evidence trends in the predicted direction that accountability moderates the relationship between initial belief and evaluation of information such that individuals in the financial outcome accountability condition who had an initial belief that Beta was ethical were least likely to find the information to be useful.

Financially accountable individuals rated information on Beta's social irresponsibility as less useful than socially accountable individuals, but what is interesting is the difference that initial beliefs have on those ratings. That is, participants with no initial belief rated the information equally, regardless of accountability. It is only among those who initially believed the company was ethical, that type of accountability has an effect on evaluation the information. We might expect that a financially accountable employee would find the information about a supplier's unethical behavior to be equally useless regardless of initial belief, since the employee is accountable for maximizing profits. However, the evidence suggests that when an initial belief regarding the company's ethical nature is paired with accountability for financial outcomes, receiving negative information about the company's unethical behavior causes that information's usefulness to be significantly devalued (Figure 3). This pattern also occurs with information credibility; however, the relationship is not statistically significant (Figure 4).

Accountability alone does not affect the evaluation of information or the percentage of the budget awarded, but the interaction of accountability and initial belief does affect these outcomes. This may occur because employees with an initial belief that the company is ethical are more committed to their position than those who are not, and they are looking for reasons to devalue the information. Among the financially

accountable group, the motivation to increase profitability may exacerbate the tendency of employees to devalue the information and award the budget. In contrast, social outcome accountability may cause employees to more strongly consider information about negative social effects despite a pre-existing belief that the company is ethical.

One might argue that financially accountable employees make the decision to intentionally ignore the new information award a larger percentage of the budget because they have been directed to prioritize finance alone (rather than social effects). However, the lower evaluation of both information usefulness and credibility indicates that employees devalue the information itself. This is an important finding because it suggests that individuals do not make a calculated decision to ignore information. Rather, they actually process the information differently and regard it as less credible and useful when they are held financially accountable.

### **Study1b**

In Study 1b, the hypotheses are further tested by providing a full comparison of all accountability conditions that were proposed (social outcome, financial outcome, process and no accountability). Study 1b used the same materials and procedures as Study 1a but consists of a 2 (initial belief: believes Beta is ethical/no belief) x 4 (accountability: process/financial outcome/social outcome/none) design, 230 adults located in the United States were recruited via the Amazon Mechanical Turks platform.<sup>2</sup> (49% female, mean age = 35.69, mean full time work experience = 13.11 years) The

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<sup>2</sup> Five outliers were removed from the sample because they were more than 1.5 interquartile ranges above the third quartile.

procedure and measures were identical to those described in Study 1a with the addition of two accountability conditions. Participants in the process accountability group read, *“For this task, you are accountable for the process you use to make decisions, rather than the outcomes of those decisions. Under process accountability, employees are evaluated on the processes, procedures, or judgment strategies (e.g., adopting best practices), but are not evaluated on the outcomes (results) because work outcomes may fall outside the employee’s control. After the study, you will be asked to write a short explanation of the process you used to make your decisions.”* Participants in the control (no accountability group) did not receive a comparable message.

## **Results**

**Manipulation checks.** A chi-square test found a significant difference between accountability groups in response to the question “In this task, which of the following were you primarily accountable for?”  $X^2(9, n = 225) = 253.78, p < .01$ . An independent samples t-test demonstrates a significant difference,  $t(223) = -8.63, p < .01$ , in response to the question “How ethical do you believe the following companies to be? (Beta),” between participants assigned an initial ethical belief regarding Beta ( $M = 83.98, SD = 16.74$  on a scale of 1 to 100) and the control group ( $M = 64.57; SD = 16.98$ ).

**Evaluation of information.** A four-item scale for evaluation of information-usefulness was measured at the end of the study with a reliability of Cronbach’s  $\alpha = .954$ . The evaluation of information-credibility scale had a Cronbach’s  $\alpha = .953$ .

**Hypothesis Testing.** H1 predicted a relationship between initial belief and evaluation of information. General linear models show no significant difference when evaluating information *usefulness*,  $F(1, 224) = 0.092$ ,  $p > .05$ , between those with an initial belief that Beta is ethical ( $M = 83.26$ ,  $SD = 17.66$ , scale = 1 to 100) and those with no initial belief ( $M = 1.81$ ,  $SD = 12.96$ ). There was also no significant difference in evaluating information *credibility*,  $F(1, 224) = 0.59$ ,  $p > .05$ , between those with an initial belief that Beta is ethical ( $M = 74.03$ ,  $SD = 16.77$ , scale = 1 to 100) and those with no initial belief ( $M = 74.32$ ,  $SD = 15.59$ ). Due to the fact that the data is non-normal (both evaluation of information scales are negatively skewed, and budget allocation is positively skewed), all variables were transformed arithmetically, but the transformed variables remained skewed. Nonparametric Kruskal-Wallis tests were also performed to examine differences between groups on the evaluation of information, but all tests were non-significant. See Table 2 for study correlations.

**Table 2. Study 1b. Primary variable correlations**

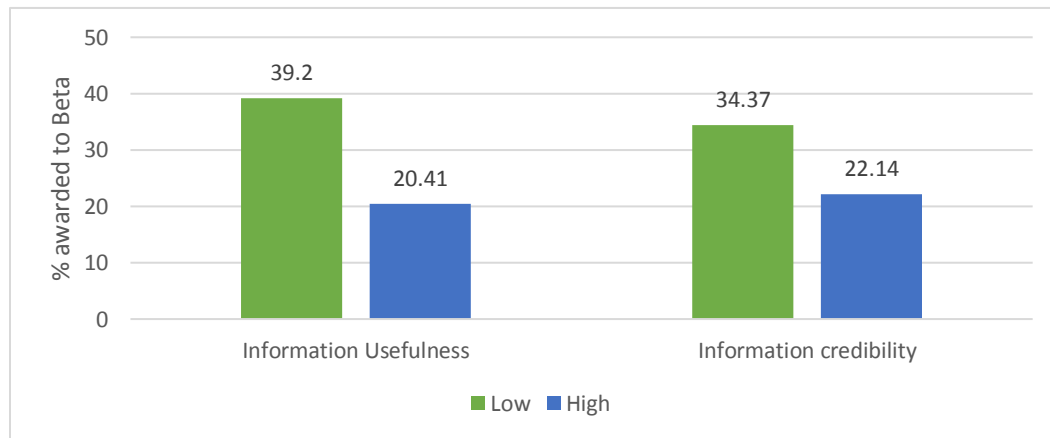
	Initial belief	Accountability	Evaluation of information usefulness	Evaluation of Information Credibility
Accountability	0.010			
Evaluation of information usefulness	0.028	0.095		
Evaluation of Information Credibility	-0.009	0.103	.678**	
% Awarded to Beta	0.061	0.022	-.362**	-.214**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

H2a predicts that evaluation of information will be positively related to using that information in decision-making. Results of general linear models show that information

usefulness,  $F(1,224) = 22.25, p < .01$ , but not information credibility,  $F(1,224) = .47, p > .05$ , predicts the percent of the budget allocated to Beta company. However, an independent model examining only credibility judgments (without usefulness) shows that evaluations of information credibility do have an effect on the percent of the budget allocated to Beta,  $F(1,224) = 10.68, p < .01$ . For the purpose of visualizing this information, Figure 6 shows two high/low dichotomous variables, created by splitting the evaluation of information scales at the respective means. The mean for information usefulness was 82.22 and for information credibility, the median was 74.18.

**Figure 6. Study 1b. Effect of Evaluation of information on percent awarded to Beta.**



$p < .01$  (usefulness);  $p < .01$  (credibility)

H3 theorizes that evaluation of information mediates the relationship between initial belief that Beta is ethical and percentage awarded to Beta. The mediation model was analyzed using the bootstrapping technique in Hayes' (2018) PROCESS macro model 4, using evaluation of information usefulness as the moderator. The model confirms the results of previous tests for H1 and H2, i.e. the direct effect of initial belief on information usefulness,  $R^2 < .03, F(1,223) = .17, p > .05$ , is not significant. The effect



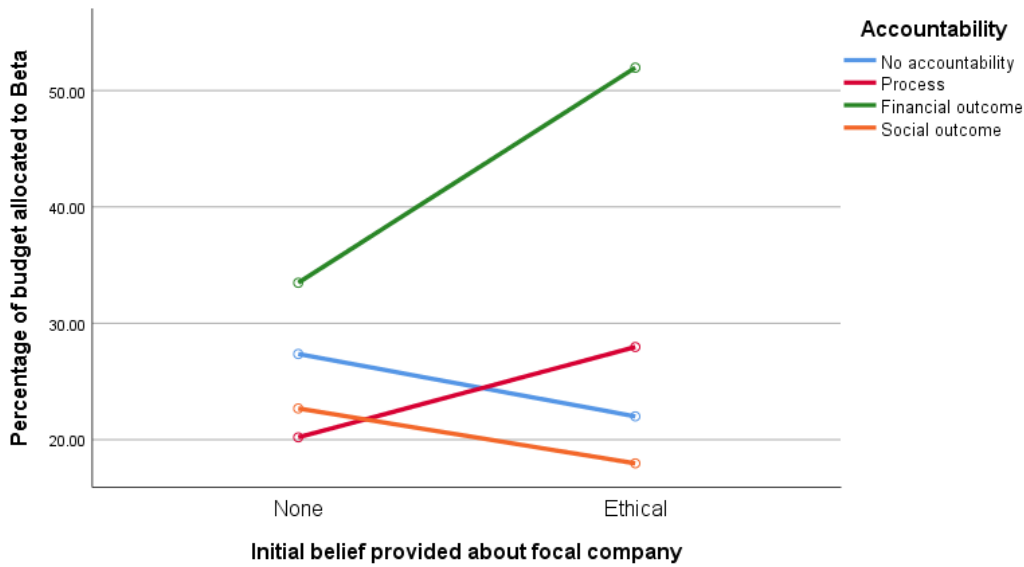
of information usefulness on the budget allocation,  $R^2 = .14$ ,  $F(2,222) = 17.45$ ,  $p < .01$ , is significant as the 95% confidence level does not include zero (LLCI:-1.05; ULCI:-.52).

However, there is no significant effect of mediation.

H4a (process versus outcome accountability) and H4b (financial versus nonfinancial outcome accountability) predict that the relationship between initial belief and evaluation of information will be moderated by accountability. Two separate moderation analyses with Hayes' (2018) PROCESS macro model 1 were used to test these hypotheses for both information usefulness and information credibility, and found the models were non-significant,  $R^2 = .028$ ,  $F(7,217) = .91$ ,  $p > .05$  (usefulness),  $R^2 = .022$ ,  $F(7,217) = .69$ ,  $p > .05$  (credibility).

**Post Hoc Analyses.** Although it was not hypothesized, a regression model demonstrates there is a significant direct effect of accountability on the percent of the budget allocated to Beta,  $F(3, 224) = 5.92$ ,  $p < .01$ , but no moderation effect,  $F(3, 224) = 1.95$ ,  $p = .12$ . A post hoc Tukey HSD indicates a significant difference between financial outcome accountability and all other accountability conditions. Figure 7 demonstrates that when participants were accountable for financial outcomes, they were significantly more likely to award a higher percentage of the budget to Beta than those under other accountability conditions for both belief conditions. Figure 7 also suggests that under financial outcome accountability, those with an initial belief that Beta is ethical allocated a higher percentage of the budget than those with no initial belief although not a significant finding.

**Figure 7. Study 1b. Effect of initial belief and accountability on budget allocation.**



*p = n.s. (initial belief); p < .01 (accountability direct); p = .12 (accountability moderator)*

An informal examination of the responses to the open-ended question, “Please explain why you chose these percentages,” gives additional insight into the relationship between financial accountability and the budget allocation decision. For example:

- “If I am doing this for the money I have to choose Beta even though they are a sweatshop. But I don't like it. I don't like the way they do business or treat their workers.”
- “Lower cost per unit. It is my job to obtain supplies at lowest cost not based on how ethical the supplier actually is.”
- I chose to allocate 100% to Beta because they were the cheapest option. Although their business practices are unethical, I am responsible for solely finances.”

The Study 1b analyses reported above include participants that incorrectly responded to an attention check question (*“For this statement, please choose seventy percent”*) and two reading comprehension questions (*“Which company recently promoted Thompson to the position of Managing Director?”* and *“Which company had a riot at one of their factories?”*). In order to examine whether the lack of significant findings is due to participants who are not paying attention to the materials, hypotheses tests were run with only participants who answered all three questions correctly,<sup>3</sup> and removed nine outliers ( $n = 163$ ). There was no support for H1 which theorizes that initial belief predicts the evaluation of information. There was support for H2, which hypothesizes that evaluation of information predicts the budget allocation to Beta, for both information usefulness,  $F(1,162) = 21.61, p < .01$ , and in a separate model, for information credibility,  $F(1,162) = 5.86, p = .017$ .

In order to test H3 which predicts that evaluation of information moderates the relationship between initial belief and budget allocation, Hayes’ (2018) PROCESS macro model 4 was used, with evaluation of information usefulness as the moderator. The model finds an significant indirect effect of initial belief on budget allocation through the moderator, evaluation of information usefulness,  $R^2 = .13, F(2,160) = 11.97, p < .01$ .

In this subset, there are no statistically significant findings for accountability.

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<sup>3</sup> Because the attention check question which asked participants to choose 70% used a slider which is less precise on smaller screens, I included all participants who answered between 65% and 75%.

## Discussion

Study 1b finds additional support for the idea that evaluation of information's usefulness and credibility both have an effect on the choice to use that information in decision-making. Study 1b also finds that financial accountability has a direct relationship on allocation of the budget, such that study participants are willing to be indirectly complicit to human rights violations in exchange for low costs, regardless of their initial belief. Participants' explanations for their decisions give some insight into this process. Some employees who are accountable for financial outcomes recognize the value of the conflicting information, yet their motivation is to prioritize cost-cutting regardless of any negative social or financial consequences.

Study 1b does not replicate the support for the full model as does Study 1a, despite using the same design. This may be due to less attentive, or more confused participants. For example, a brief review of responses to the open ended question, *"Please explain why you chose those percentages,"* (presented immediately after the dependent variable) reveals that multiple participants who awarded Beta 100% of the contract gave explanations that were in direct contradiction to the material presented, e.g., "I chose to go with Beta 100% because of their prices and they do not use sweatshops," "Beta seems to be superior in all aspects I have read about. Both in treatment of their employees and their costs for their product." Other participants responded as expected qualitatively but still awarded Beta 100% of the contract. E.g., "Our company is focused on being ethical. The beta company does not have the same core values at all." And "I don't like what I learned about Beta's 'sweat shop conditions' so I don't want to support them at all."

## CHAPTER 7: STUDY 2A AND STUDY 2B

### Study 2a

In Study 2a, the model is tested in a different organizational context – human resources management. The topic of affirmative action effectiveness is used as the subject of participants’ moral beliefs and collected participants’ actual beliefs several weeks before introducing the experimental manipulation. The topic of affirmative action was chosen because Americans remain divided on whether they believe it is more beneficial or harmful to fairness in employment and education. For example, in a 2018 poll, Gallup found that roughly 60% of Americans polled support affirmative action programs for minorities (Norman, 2019). Affirmative action is a divisive issue in both academic and business organizations because individuals hold differing perceptions of equality and the morally appropriate way to resolve inequality (DeBell, 2017; Kravitz & Platania, 1993). This study also uses a dependent variable that involves not only decision-making, as in Studies 1a and 1b, but also sharing of information with management.

### Participants and Design

Study 2a was a two-part, 2 (initial belief: confirmed by evidence/conflicting with evidence) x 2 (accountability: social outcome/none) between-subjects design conducted in a classroom setting with 50<sup>4</sup> MBA students (44% female, mean age = 33.64, mean

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<sup>4</sup> 11 participants were removed for failing to respond correctly to an attention check item (“For this statement please check ‘Somewhat disagree’”), leaving n = 39 for analysis).

full-time work experience = 10.4 years, mean management experience = 3.83 years) from a large public U.S. university.

This study design adapts the work of Lord and colleagues (1979) who studied biased information processing and attitude polarization. Part 1 assesses participants' initial beliefs and attitudes regarding affirmative action hiring policies. In part 2, the same participants were assigned to accountability conditions, and then read, evaluated, and reported on a research article regarding the efficacy of affirmative action hiring programs.

## **Procedure**

For part 1, participants completed a Qualtrics questionnaire which assessed initial beliefs regarding affirmative action in the workplace (a definition of affirmative action was provided, full scenarios and measures are included in Appendix E), and assessed participants' perceptions of the importance of several aspects of academic research (e.g., generalizability, peer review). Participants also completed demographic items at this time.

Approximately four weeks later in part 2, participants read a task overview explaining that they would assess the quality of academic management research as an HR manager for their company (see Appendix E: Introduction/cover story). Participants were randomly assigned to one of two conditions: social outcome accountability or no accountability (control). Participants in the social outcome accountability group read, *"Your employer values its status as a socially responsible company. When you choose a supplier, you are accountable for the social performance (i.e., the harms or benefits to*

*society, the community, the environment, etc.) of your decisions, rather than the processes or financial outcome. Your decisions will be evaluated by managers based on the likely social performance of your decisions. After the study, you will be asked to write a short explanation to justify the social outcomes of your decision.*” Participants in the control group received no comparable message.

Next participants viewed one of two newspaper articles which reviews a fictional academic research study providing evidence of the performance effects of affirmative action (see Appendix E: Newspaper article). In one version of the article, the study purports affirmative action had a positive influence on employee satisfaction and team success, and in the other, affirmative action had a negative influence on the same factors. Each article provided identical reviews of research methodology, including strengths and weaknesses which participants rated as equally important in Part 1 of the study. After reading the article, participants provided their evaluations via a series of Likert scale regarding the quality of the research (see Appendix E: Evaluation of research). A separate series of Likert scale agreement items assessed participants’ belief in the efficacy of affirmative action (Appendix E: Beliefs about affirmative action).

Next, participants were asked to complete a recommendation form for the Vice President of Human Resources, including a recommendation regarding use of the research and a message containing their assessment of the research with an option to attach the news item (see Appendix E: Recommendation form). Finally, participants answered a series of manipulation check questions.

## Measures

**Initial belief.** Belief regarding affirmative action was measured with a seven item scale created for this study, which contains items relating to factual beliefs regarding affirmative action such as “*Affirmative action is an effective way to make up for past discrimination*” and “*Affirmative action is ineffective because everyone has equal opportunities in the workplace regardless of race or gender*” (reverse coded). (See Appendix E: Beliefs about affirmative action.) The items for this scale were pre-tested with approximately 50 undergraduate business students. The Chronbach’s alpha for this study was .839.

**Evaluation of Research.** This was measured using a seven item Likert scale (1 to 7, 1 = strongly disagree) created for this study. This scale contains items such as “*The research methodology was effectively designed*” and “*The evidence presented in the research is very convincing.*” (Appendix E: Evaluation of research). The Cronbach’s alpha = .863.

**Recommendation.** This is a dependent variable measured by the response to the question “*Should the VP of Human Resources consider this research in determining hiring policy?*” on a scale of 1 to 100 with endpoints ranging from “definitely no” to “definitely yes”.

**Upload article.** This is a dichotomous dependent variable coded 1 if the participant chose to add the newspaper article to the message to the HR Director, and coded 0 if s/he does not.



## Results

**Manipulation checks and scale reliability.** A chi-square test found a significant difference between accountability groups in response to the question “*In this task, which of the following were you primarily accountable for?*”  $X^2(2, n = 39) = 10.20, p < .01$ .

**Hypothesis testing.** H1 predicted a relationship between initial belief and evaluation of information, and H4 predicted that this relationship would be moderated by accountability. In this study, initial belief was not manipulated, but rather measured. Additionally, participants were randomly given an article that purportedly provides evidence either supporting or rejecting the effectiveness of affirmative action, regardless of their initial beliefs. Therefore, a binary categorical variable (type of evidence) was created to indicate whether a participant received evidence that was belief-confirming or belief-conflicting (see Table 3 for a full explanation of these categories).

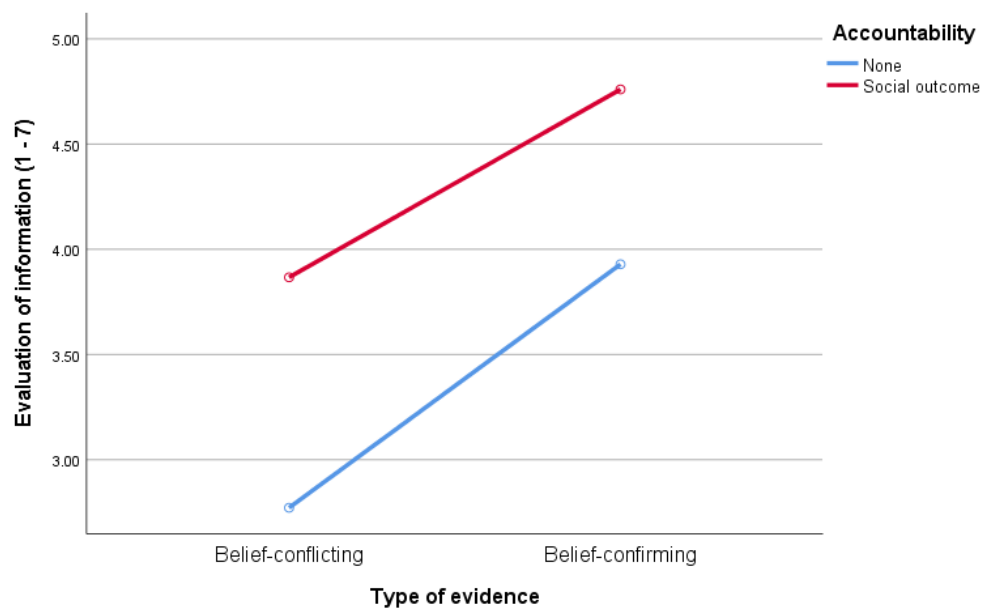
**Table 3. Study 2a. Type of Evidence Received**

Condition	Initial belief	Article received
Belief <u>Confirming</u> evidence	High on AA belief scale	AA is <i>effective</i> article
Belief <u>Confirming</u> evidence	Low on AA belief scale	AA is <i>ineffective</i> article
Belief <u>Conflicting</u> evidence	High on AA belief scale	AA is <i>ineffective</i> article
Belief <u>Conflicting</u> evidence	Low on AA belief scale	AA is <i>effective</i> article

A general linear model regression analysis shows support for H1, a direct relationship between the type of evidence received (belief-confirming or belief-conflicting) and the evaluation of research,  $F(1,38) = 6.66, p = .014$ . Participants who received belief-confirming evidence rated the news article more highly than did those who received belief-conflicting evidence. Although not hypothesized, there was a direct

effect of accountability on the evaluation of information,  $F(1,38) = 5.47, p = .025$ , such that individuals who were accountable rated the information as higher quality ( $M = 4.09, SD = 1.13$ ) than those who were not accountable ( $M = 3.54, SD = 1.24$ ). Figure 8 demonstrates these relationships.

**Figure 8. Study 2a. Effect of type of evidence and accountability on evaluation of research**



$p = .014$  (type of evidence)  $p = .025$  (accountability – direct);  $p = n.s.$  (accountability moderator)

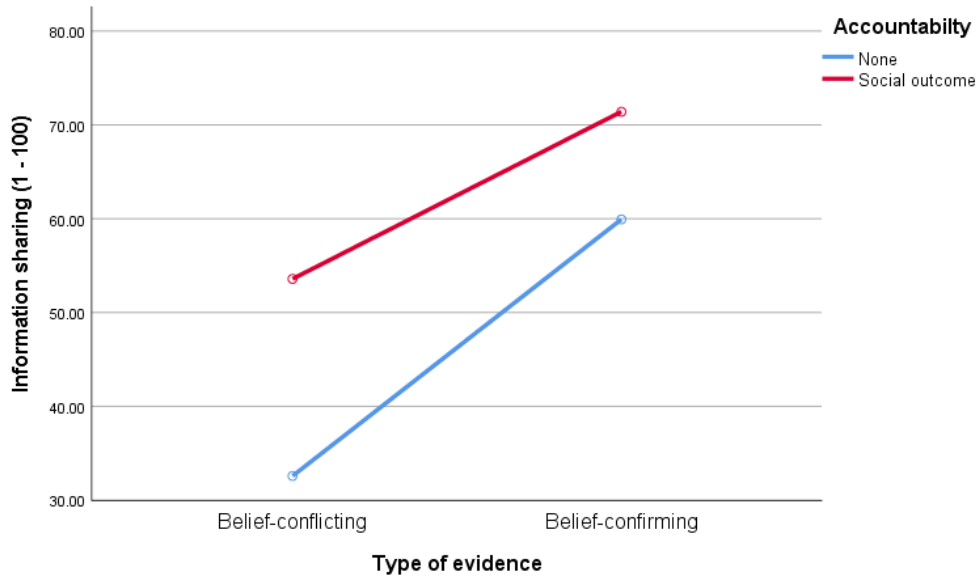
H2b predicted that evaluation of information will be positively related to information sharing. Two measures of information sharing were used: the strength of the recommendation that the VP of human resources ought to consider this information in creating company policy, and whether the article itself was attached to the recommendation form. Univariate regression analysis shows that participants who evaluated the research more highly were also more likely to strongly recommend the use

of the research in policy making,  $F(1,38) = 74.08, p < .001$ ). Participants who rated the information more highly were also 1.65 times more likely to attach the information to their recommendation, however this result is not statistically significant ( $p = .083$ ).

H3 suggests that evaluation of information mediates the relationship between initial belief and behavior. A moderated mediation analysis using bootstrapping was run using Hayes' (2013) PROCESS model 7, with recommendation as the dependent variable, type of evidence as the categorical independent variable, research evaluation as the mediator, and accountability as a categorical moderator. Results confirmed the individual linear models reported above, such that type of evidence had a significant effect on evaluation of research,  $F(3,35) = 3.07, p = .04 (R^2 = .21)$ , and evaluation of research had a direct effect on recommendation  $F(2,36) = 39.96, p < .01 (R^2 = .69)$ .

Although not significant, there was some evidence in line with the finding above of a direct effect of social outcome accountability on evaluation of evidence,  $B = 1.1, SE = .56, t(35) = 1.97, p = .057$ , but no support for accountability as a moderator,  $B = -.26, SE = .82, t(35) = -.32, p = .75$ . Figure 9 demonstrates the mean differences between groups on the dependent variable, recommendation, which measures information sharing.

**Figure 9. Study 2a. Effect of type of evidence and accountability on information sharing** (“Should the VP of Human Resources consider this research in determining hiring policy?”).



$p = .04$  (type of evidence)  $p = .057$  (accountability – direct);  $p = n.s.$  (accountability moderator)

**Post hoc analysis.** The open-ended responses to the prompt “Please explain your reasoning” which followed the dependent variable prompt, were coded to determine whether they contained mentions of either the fictitious study’s strengths or weaknesses. Most participants, regardless of condition, named the study’s weakness but did not mention the study’s strengths. There was no difference between groups on these factors.

## Discussion

In Study 2a, initial beliefs were measured rather than manipulated, and overall this study confirms the findings of Study 1a with respect to the relationships between initial beliefs and evaluation of evidence, and evaluation of evidence and sharing

information. This provides additional evidence that employees do not intentionally reject, or refuse to share, information that conflicts with their previous beliefs. Rather in evaluating the information, employees consider it to be less accurate, reliable and convincing when it conflicts with their beliefs than when it confirms beliefs. Study 2a also provides evidence that social outcome accountability directly increases positive evaluation of evidence compared to no accountability, in the presence of both belief-conflicting and belief-confirming evidence. This may occur because study participants recognize that diversity policies in hiring are relevant to a company's social performance and social responsibility. In accepting accountability for social outcomes, employees may consider any information regarding social performance to be more worthy of sharing with policy makers compared to those with no accountability.

Due to a limited sample, only two types of accountability were compared (social outcome accountability and no accountability). Also, likely due to small sample size, results were weaker than expected. Additionally, the strengths and weaknesses of the fictitious study were not balanced well enough such that the weakness seemed more important to study participants than the strengths. In response to these weaknesses, Study 2b was conducted.

## **Study 2b**

### **Participants and Design**

Study 2b was a two-part, 2 (initial belief: confirmed by evidence/conflicting with evidence) x 4 (accountability: process/financial outcome/social outcome/none ) between-subjects design using the same materials and procedure as in Study 2a, but including all

four previously defined accountability conditions (see Study1b), and was conducted online with 459 adults (who completed both parts) using the MTurk platform (48.6% female, mean age = 36.37 years, mean full-time work experience = 14 years, mean management experience = 3.87 years). Recent research has indicated that attention check questions (such as, “For this item please select ‘somewhat agree’”) in online surveys may actually reduce data quality (Vannette, 2017), therefore this type of attention check was not used in this study. Instead, an open-ended question (“*Please write a one or two sentence evaluation of this research.*”) was used to confirm that a large majority of respondents had accurately read the information provided to them. 98.5% of answers to this prompt reflected a thoughtful response to information presented in the study (E.g., “It says that affirmative action doesn't work well. But the statistics are not reliable because taken from one small sample”)

In order to better balance the fictitious study’s strengths and weaknesses, several versions were pre-tested on 75 undergraduate business students. For final language and changes, see Appendix E.

## **Measures**

**Initial belief.** Belief regarding affirmative action was measured with a seven item scale created for this study, which contains items relating to factual beliefs regarding affirmative action such as “*Affirmative action is an effective way to make up for past discrimination*” and “*Affirmative action is ineffective because everyone has equal opportunities in the workplace regardless of race or gender*” (reverse coded). (See

Appendix E: Beliefs about affirmative action.). The Cronbach's alpha for this study was .92.

**Evaluation of Research.** This was measured using a seven item Likert scale (1 to 7, 1 = strongly disagree) created for this study. This scale contains items such as "*The research methodology was effectively designed*" and "*The evidence presented in the research is very convincing.*" (Appendix E: Evaluation of research). The Cronbach's alpha = .91.

**Recommendation.** This is a dependent variable measured by the response to the question "*Should the VP of Human Resources consider this research in determining hiring policy?*" on a scale of 1 to 100 with endpoints ranging from "definitely no" to "definitely yes".

**Upload article.** This is a dichotomous dependent variable coded 1 if the participant chose to add the newspaper article to the message to the HR Director, and coded 0 if s/he does not.

## Results

**Manipulation checks.** A chi-square test found a significant difference between accountability groups in response to the question "In this task, which of the following were you primarily accountable for?"  $X^2(9, n = 460) = 676.78, p < .001$ .

**Hypothesis testing.** H1 predicted a relationship between initial belief and evaluation of information, and H4a and H4b predicted that this relationship would be moderated by accountability. As in Study 2a, a binary categorical variable (type of evidence) was created to indicate whether a participant received evidence that was belief-

confirming or belief-conflicting. As 4 is the midpoint of the scale items measuring whether respondents believe that affirmative action is effective or ineffective (i.e., 4 = “*neither agree nor disagree*” on the individual scale items, cutoff points of greater than 3.00 and less than 5.00 on the initial belief scale were used to eliminate those participants who did not have a clear belief regarding the effectiveness of affirmative action ( $n = 202$ ). The remaining participants were divided into two groups, those who believe affirmative action is effective ( $n = 166$ ) and those who believe it is not effective ( $n = 91$ ) for a total sample of 257. As in Study 2a, the type of evidence variable was created to reflect individuals who received an article that confirmed or disconfirmed their initial beliefs (regardless of whether they believed that affirmative action is effective or not effective).

A general linear model regression analysis shows support for H1, a direct relationship between the type of evidence received (belief-confirming or belief-conflicting) and the evaluation of research,  $F(1,256) = 37.68, p < .001$ ). Participants who received belief-confirming evidence rated the news article more highly ( $M = 4.52, SD = 1.41$ ) than did those who received belief-conflicting evidence ( $M = 3.28, SD = 1.65$ ).

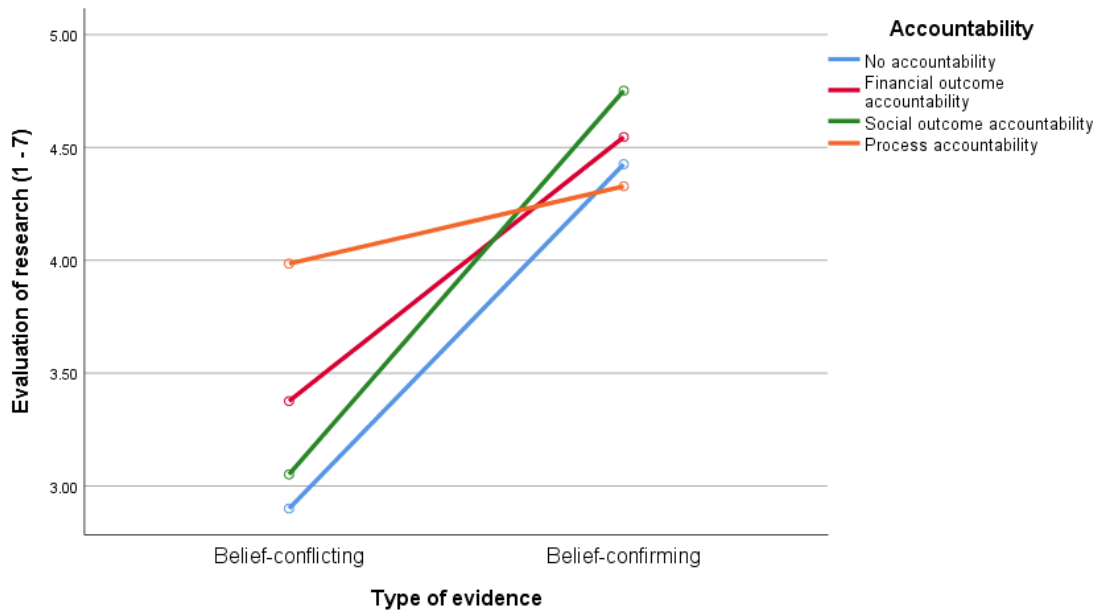
H2b predicted that evaluation of information will be positively related to information sharing. Two measures of information sharing were used: the strength of the recommendation that the VP of human resources ought to consider this information in creating company policy, and whether the article itself was attached to the recommendation form. Univariate regression analysis shows that participants who evaluated the research more highly were also more likely to recommend the use of the research in policy making,  $F(1,256) = 180.45, p < .001$ ). Results of a binary logistic



regression indicate that participants who rated the information more highly were also 1.38 times more likely to attach the information to their recommendation ( $p < .01$ ).

H3 suggests that evaluation of information mediates the relationship between initial belief and behavior. H4a and H4b predict that accountability will moderate the relationship between initial belief and evaluation of information. These hypotheses were tested together using Hayes' (2013) PROCESS model 7, with recommendation as the dependent variable, type of evidence as the categorical independent variable, research evaluation as the mediator, and accountability as a categorical moderator. The model shows support for H3 ( $R^2 = .17$ ,  $F(7,249) = 7.49$ ,  $p < .01$ ). The model also indicates partial support for H4a. Process accountability has a statistically significant effect as a moderator on the relationship between initial belief and evaluation of evidence compared to social outcome accountability ( $B = 1.36$ ,  $SE = .56$ ,  $t(249) = 2.44$ ,  $p = .015$ ) and no accountability ( $B = 1.18$ ,  $SE = .56$ ,  $t(249) = 2.12$ ,  $p = .035$ ), but not financial outcome accountability ( $B = .83$ ,  $SE = .58$ ,  $t(249) = 1.43$ ,  $p = .15$ ). There is no support for H4b which states that non-financial accountability will have an increased effect over financial accountability as a moderator, ( $B = -.53$ ,  $SE = .53$ ,  $t(249) = .99$ ,  $p = .32$ ), Figure 10 demonstrates these relationships. It may be that financial accountability is less relevant to participants in this context, in which there is no direct link made between outcomes and financial performance.

**Figure 10. Study 2b. The effect of type of evidence and accountability on evaluation of information.**



$p < .001$  (type of evidence)  $p = .015$  (accountability: process v. social, control);  
 $p = n.s.$  (accountability: financial v. social)

**Post hoc analysis.** The open-ended responses to the prompt “*Please explain your reasoning*” were coded for whether they mentioned either the fictitious study’s strengths or weaknesses. While 44.7% ( $n = 194$ ) of respondents indicated that the small sample size was a prohibitive factor in their decision, only 3% of participants ( $n = 14$ ) indicated that a “real world” study was a supportive factor. This group is not large enough for powerful statistical analyses. Therefore, a binary variable was created to measure whether a response contained sample size as a prohibitive weakness. For example, the response, “The study was so small that it cannot be scientifically authenticated or useful” was coded as one.) Examining one accountability category at a time, results of independent binary logistic regressions indicate that in the control group, with no accountability,

individuals who read belief-conflicting evidence are 3.25 times more likely ( $p = .003$ ) than those who receive belief-confirming evidence to explain that sample size was a major weakness in this study. Within the social outcome accountability group, individuals who read belief-conflicting evidence were 2.49 times more likely to name sample size as a study weakness than individuals who read belief-confirming information ( $p = .022$ ). Although not significant, there were also differences in the likelihood of mentioning sample size as a reason to devalue the research between the belief-conflicting and belief-confirming groups under both financial outcome and process accountability. This suggests that under certain types of accountability, employees may be less likely to rely on rationalizations to justify why they ignore or devalue evidence that conflicts with their initial beliefs.

## **Discussion**

Study 2b provides support for the general model, namely evaluation of information mediates the relationship between belief-conflicting/belief-confirming evidence and sharing that information. Further, process accountability significantly attenuates the effect of belief-conflicting information on the evaluation and sharing of that information, compared to social outcome accountability and no accountability. In other words, under process accountability, participants were more likely to positively evaluate information that conflicted with their beliefs compared to those under social outcome accountability or no accountability. Under process accountability, employees are informed that they will be judged for good decision making, which includes careful consideration of all evidence, regardless of the result. They may expect that a careful

consideration of the evidence will enable them to justify their decision, therefore being successful at their task. By contrast, employees accountable for outcomes, even social outcomes, may expect that failure is a greater possibility and potentially out of their own control. (For example, an employee accountable for sales revenue may have influence over customers, but not control over their purchasing decisions.) With this concern, employees may be less likely to thoroughly consider the evidence, because their primary focus is on achieving an end.

There is no support for the hypothesis which states that non-financial outcome accountability has a stronger effect than financial outcome accountability on positively evaluating information that conflicts with initial beliefs.

In addition, post hoc analysis of the open-ended responses indicates that types of accountability may affect the criteria that individuals use to justify their decisions. For a summary of all study findings, see Appendix A.

## **CHAPTER 8: GENERAL DISCUSSION**

In organizations, we expect employees to accurately evaluate information and to share credible and useful knowledge with each other, thereby improving organizational and strategic decisions. However, the studies reviewed in this dissertation suggest that employees are biased by their moral beliefs, even in organizational situations and devalue information that conflicts with their beliefs. By understanding the role that information evaluation plays in employees' decisions to use and share information, organizations can consider techniques, such as promoting accountability, to encourage employees to fully consider new information.

While previous literature regarding confirmation bias (e.g., Nickerson, 1998) has demonstrated that individuals are more likely to seek out, attend to, and base their decisions and behaviors on information that is congruent with their present beliefs, the present studies identify a mediator – the evaluation of information quality – in that relationship. The evidence for this mediator suggests that employees do not simply reject, or refuse to share, information that disagrees with their previous moral beliefs, but rather exhibit unconscious bias in processing information. Identifying this mediator is an important step in developing organizational interventions to combat the effect of moral beliefs on workplace decisions.

Across five experiments, several notable findings were identified. Namely, when employees receive information that conflicts with their moral beliefs, they are more likely to negatively evaluate that information, and in turn, less likely to use that information in their decision making or to share it with others. There is also some evidence to suggest that accountability for strategies and process is more likely than accountability for

outcomes to interrupt this pattern. In other words, when employees are accountable for the strategies used in decision making, they seem to be more accepting of information that contradicts their original moral beliefs. Importantly, similar relationships occur across two study designs that entailed different organizational research contexts--supply chain management and human resources management.

### **Theoretical Implications and Future Directions**

In this section, I will discuss the relevance of the present studies to related areas of research, specifically, the stickiness of moral beliefs, the appropriateness of managers' accountability for non-financial outcomes, additional interventions in biased information processing, and the reliance on justifications in biased decision making.

**Sticky moral beliefs.** Once individuals believe information is true, it can be very difficult to correct these beliefs, even when the information is not personally relevant (Lewandowsky et al., 2012). I propose that when beliefs incorporate personal or social ethical norms, they become particularly sticky, and resistant to revision. While I do not compare moral beliefs to other types of beliefs, I show that moral beliefs cause employees to more negatively evaluate information that conflicts with their beliefs across three experiments. While other research has addressed the fact that individuals devalue information that conflicts with belief systems, in four of the experiments I show that when employees receive belief-conflicting evidence, they are less likely to incorporate that information into their organizational decision-making and less likely to share it with others. This novel research is important because employees have different roles and responsibilities at work than in other aspects of their lives; they are expected to make

decisions in the best interest of the organization. These effects were present in both supply chain and human resources settings.

Research shows that even retractions of false information often do not have a strong effect on individuals' likelihood of updating their beliefs (Lewandowsky et al., 2012; Schwarz, Ecker, Seifert, Lewandowsky, & Cook, 2012). For example, several different studies have presented participants with misinformation, (e.g., that a fire was caused by a leaky gas can), followed by a retraction (actually, there was no gas can), and it is common for participants to respond to questions regarding the cause of the fire as the gas can (Lewandowsky et al., 2012). If individuals are resistant to accept new information in place of previous information that they believed to be true about something as simple and non-personal as the cause of a fire, then how much more challenging is it for individuals to accept new information as true when it challenges their beliefs about moral choices? If beliefs have a type of stickiness which makes them hard to revise, I propose that beliefs which are central to individual and social identity, such as beliefs about morality, will be even stickier. While research on revising moral beliefs is very limited, there is some evidence to suggest that religious beliefs are, in fact, sticky. In one early study seeking to find evidence for cognitive dissonance, members of a high school Christian youth group were presented with information alleging that Jesus's resurrection had been fraudulent. Students who accepted the information as true indicated a significant increase in their religious beliefs after reading the information. Comparatively, students who rejected the information as false maintained the same level of belief both before and after reading the information (Batson, 1975). It is important to note that in this study, students made a public commitment to their religious beliefs at the

start of the study and were seated in a group with other believers in an attempt to prime social identity.

Research related to individuals' self-perceptions also shows a stickiness of beliefs related to individual identity. For example, research shows that individuals weigh prior information about their own performance on an intelligence test more heavily than new information, particularly when the prior information is positive. In one study, individuals were less likely to update their beliefs than economic models predicted, regardless of positive or negative feedback about their performance (Möbius, Niederle, Niehaus, & Rosenblat, 2011). This suggests that beliefs that are based on positive information about the self (thus enhancing self-identity) are stickier than other types of beliefs. Moral beliefs are also one of the factors that contributes most to identity and self-definition (Strohming & Nichols, 2014). For example, research has shown that individuals anticipate that if their moral beliefs were to change, their personal identities would also change (Heiphetz, Strohming, & Young, 2017). Individually, moral beliefs help to shape one's worldview, and through the process of social identification, individuals adopt and maintain beliefs and attitudes shared by the groups that are most central and most salient in their lives, e.g., religious organizations, ethnic backgrounds (Hogg & Terry, 2000). Information that challenges these beliefs is likely to pose identity threat and ultimately result in a rejection of information that threatens beliefs about what is right and what is wrong. Individuals tend to dismiss or devalue information that contradicts prior beliefs, and as I have argued, do so particularly when those beliefs are moral or otherwise central to one's personal or social identity. Therefore framing information such that it is belief-congruent rather than belief-incongruent decreases the psychological costs of



behavior that is inconsistent with one's identity (Cohen et al., 2007) and increases openness to the information.

Future work should examine the differences in belief updating in response to new information by directly comparing types of beliefs that differ in their relation to the self, for example moral and non-moral beliefs, beliefs that relate to different levels of identity and those that are not relevant to self-concept. It may be the case that different forms of beliefs require different organizational interventions that will promote the acceptance of new information.

**Accountability and bias.** Even though there is ample evidence that under many circumstances accountability decreases cognitive bias (see Lerner & Tetlock, 1999 for a review), other research reveals situations in which cognitive bias is amplified by accountability. Accountability has been shown to increase consistency in decision making (Siegel-Jacobs et al., 1996), increase polarity in attitudes when expressed publicly (Lambert, Cronen, Chasteen, & Lickel, 1996), and increase reliance on stereotypes, rather than seeking additional information (Hatrup & Ford, 1995). For example, in one study, participants were asked to judge the attitudes of jurors based on a profile. Despite feedback regarding their errors, participants became more consistent in their decision making (Siegel-Jacobs et al., 1996). In another study, participants who were accountable were more likely to rely on stereotypes regarding a person's occupation in making judgments about that person, seeking less information about individual attributes, and spending less time reviewing that information, compared to participants with no accountability (Hatrup & Ford, 1995).

In the present studies, I contribute to this research by examining the effect of accountability on minimizing cognitive bias which may cause employees to devalue information and therefore make poorer decisions at work. In these studies, I find that financial accountability may cause participants to evaluate information as not only less useful, but also less credible. In Study 1a, I find that when employees have an initial belief that a supplier is ethical, *and* they are accountable for financial outcomes, they are more likely to devalue information that accuses the supplier of unethical behavior. Among the financially accountable group, the motivation to cut costs may exacerbate the tendency of employees to devalue the information and award the budget. Employees with social outcome accountability, on the other hand, may be more likely to consider the negative social effects of partnering with a supplier accused of human rights violations, despite the pre-existing moral belief.

Financial outcome accountability also seems to increase participants' willingness to condone unethical company behavior in favor of cutting costs regardless of their initial belief. In Study 1b, employees who are financially accountable are more likely to allocate a greater percentage of the budget to the unethical supplier, regardless of their initial belief about the supplier. When employees are accountable for financial outcomes, the study findings suggest that they are likely to be motivated solely to increase profits and ignore other negative effects.

There is also evidence from one experiment that accountability for strategic process (rather than for outcomes) may diminish the cognitive bias in evaluating information such that individuals were more open to considering it in their decision-making and sharing that information with other organizational decision-makers.

Employees who are accountable for outcomes may question their ability to successfully achieve desired outcomes. There may be aspects of desired outcomes that are out of their control. However, employees who are accountable for process are evaluated on their decision making, and not for the outcomes of those decisions. These employees may expect that by thoroughly examining all evidence available, and giving it equal weight, they will be able to more successfully justify their choices, and therefore be evaluated positively by managers.

**Financial versus social outcome accountability.** As discussed in the literature review, corporate social responsibility continues to become a global expectation, and stakeholders are more likely to demand that a firm focus on social as well as financial performance (Mun & Jung, 2018). One recent study of Japanese firms shows that, despite cultural norms which typically prohibit women from long-term employment or high-level positions, the number of women in management positions and on boards of directors has been increasing (Mun and Jung 2018). The study finds that women are more likely to be in these positions when a firm has a high level of foreign investment, and/or an internal director of CSR or investor relations, because these investors and directors are aware of the global demand for CSR, including gender diversity. The authors warn, however, that as yet, these changes only occur at the visible level of management and boards of directors – they find no increase in gender diversity at other levels of employment (Mun & Jung, 2018). This suggests that these firms are adopting social performance outcome goals solely to seek legitimization rather than implementing socially responsible practices in a substantial way.

The present studies find that types of outcome accountability—for financial and social outcomes—affect organizational decision makers differently across situations. In Study 2b, social outcome accountability resulted in more negative evaluation of information quality when information conflicted with moral beliefs, compared to process accountability. In Study 1a, participants who were accountable for financial outcomes evaluated information regarding unethical corporate behavior as both less credible and less useful than individuals who were accountable for social outcomes, and therefore awarded a larger contract to the supplier despite evidence of human rights violations. While it seems clear that social information would be more useful to individuals accountable for social rather than financial outcomes, the more interesting finding is that under financial outcome accountability, individuals seem to find negative information less credible than individuals accountable for social outcomes, particularly when that information conflicts with their moral beliefs. This may suggest that the financial mindset causes employees to be even more resistant to information that is at odds with the goal of maximizing financial performance.

This finding is in alignment with previous research on goal-setting and unethical behavior. Managers frequently set goals and evaluate employees by measuring outcomes related to those goals as a form of accountability (den Nieuwenboer, Cunha, & Treviño, 2017). Despite a large body of research demonstrating the effectiveness of goals on performance (e.g., Locke & Latham, 2009), other research has focused on the negative consequences of goal-setting (Barsky, 2008; Budiman, Roan, & Callan, 2013; Niven & Healy, 2016; Ordóñez, Schweitzer, Galinsky, & Bazerman, 2009; Schweitzer, Ordóñez, & Douma, 2004; Schweitzer, Ordóñez, Douma, & Ordóñez, 2014; Welsh, Bush, Thiel, &

Bonner, 2019; Wright, George, Farnsworth, & McMahan, 1993). Scholars have argued that goal setting can decrease performance by increasing unethical behaviors, such as cheating (Schweitzer et al., 2004), and by narrowing employees' focus such that they neglect other aspects of a task (Ordóñez et al., 2009). Further research has found that narrowly focusing employee attention on outcomes has negative consequences for pro-social behavior (Wright et al., 1993). These findings may help explain that in Study 1a and 1b, participants who were financially accountable were so narrowly focused on the goal of financial performance, they neglected to consider the other effects of partnering with a supplier accused of human rights violations.

It is likely that the research on goals is more applicable to financial outcome accountability than it is to social outcome accountability since social outcomes are typically broader and more inclusive than financial outcomes. For example, in Study 2a, there is evidence of a direct relationship between social outcome accountability and sharing of information such that socially accountable employees more highly evaluate, and are more likely to share, the fictitious research regarding an affirmative action program. This occurs regardless of whether the article conflicted with their pre-existing beliefs regarding affirmative action, and regardless of whether the fictitious study supported or undermined the effectiveness of such a program. This may occur because employees who are accountable for social outcomes are more cognizant of the importance of ethical hiring practices to a firm's social performance (defined as "the harms or benefits to society, the community, the environment, etc."). However, these employees also evaluated the research as more credible, accurate and reliable than those

with no accountability, which suggests that social outcome accountability also encouraged employees to be more open to the information itself.

**Financial versus social performance.** When managers consider only the short-term financial gains from a business decision, failing to consider all of the consequences to all of the stakeholders involved, poorer decisions are made, and opportunities for moral imagination are lost. The focus of much business and management research has traditionally addressed, or relied on data from, large publicly held corporations. While scholars and practitioners have debated the best way to define successful financial performance (e.g. long- or short-term returns, stock price, revenue, etc.) there is no doubt that publicly held corporations have at least a primary goal of generating profit for shareholders. However, recent work in the field of entrepreneurship has begun to focus on different types of success measures, some are financial, and others are personal or social. For example, in a qualitative analysis of entrepreneurs, Fauchart and Gruber (2011) identified three distinct types of business founder based, in part, on their definitions of success which include financial performance, community contributions, and promoting social justice. In an unrelated qualitative analysis of African American women business founders, Robinson and colleagues (2007) find that entrepreneurs define success at multiple levels: at the individual level, success may include overcoming adversity such as racism or sexism, or success may incorporate economic growth and the pursuit of a passion. At the family level, success could incorporate the balance between growing a business and providing (and receiving) support from family. At the social level, success included fulfilling a calling and contributing to one's community (Robinson, Blockson, & Robinson, 2007).

In addition to private companies that choose non-financial success measures, the recent development of the benefit corporation indicates a desire to redefine the goal of at least some businesses. The term benefit corporation has two primary definitions. It may refer to a corporation which is legally obligated to provide a benefit to the public in addition to its legal obligation to generate a profit for shareholders. “It is legally a for-profit, socially obligated, corporate form of business, with all of the traditional corporate characteristics but with required societal responsibilities,” (Hiller, 2013: 287). The term benefit corporation may also refer to a corporation that has been certified by the nonprofit organization B Lab for meeting guidelines such as having an explicit social or environmental mission, and regularly reporting on the status of this mission. For example, Patagonia is a profitable clothing company which is dedicated not only to improving the ethical conditions of its own supply chain, but also participates in environmental activism and encourages both employee and customer activism in multiple areas (“Patagonia, Inc. | Certified B Corporation,” n.d.). For these companies, social responsibility in addition to fiscal responsibility are both essential firm goals.

It may be that the use of non-financial key performance indicators is driven only by their relevance to financial objectives. However, their use certainly demonstrates that managers are asked to balance multiple types of objectives and may be held accountable for multiple types of outcomes.

It is in the organization’s best interest to be very clear with employees and managers regarding the organization’s strategic social performance goals. In the first human resources experiment (Study 2a), results show that social outcome accountability has a direct effect on information evaluation such that participants who were accountable

for social outcomes more positively evaluated information both when it confirmed and when it conflicted with their initial beliefs, compared to the control group. As discussed earlier, this suggests that regardless of one's beliefs about the effectiveness of affirmative action, those who were accountable for social performance were more likely to be open to information that could clearly affect a firm's social performance, even when that evidence conflicted with their initial moral beliefs. Thus, organizations may be able to make employees more receptive to new information by emphasizing social performance goals.

In the management context, attention should also be given to the finding (Study 2b) that under process accountability, individuals exhibit more equal evaluations of information quality regardless of receiving belief-confirming or belief-conflicting evidence. This may be explained by the fact that process accountability causes employees to focus on their decision-making processes rather than the success of their outcomes. In doing so, employees may be more likely to carefully and thoroughly consider all of the available evidence in order to justify their decision-making processes to supervisors. While social outcome accountability may be appropriate in employment contexts in which managers want to directly focus employee attention on outcomes related to social performance, process accountability may be overall more likely to decrease cognitive bias in information processing and decision-making.

**Implementing process accountability in organizations.** Experimental research comparing process and outcome accountability is typically designed so that study participants are accountable to study researchers. That is, to manipulate accountability, researchers often inform study participants that they will be asked to justify their



decisions to researchers (e.g., Brtek & Motowidlo, 2002) or that they may be contacted by researchers in the future to follow up on their decisions (e.g., Scholten et al., 2007). Unfortunately, there is a lack of research that discusses the actual implementation of accountability in the workplace.

In one study with MBA students and executives who had real world managerial experience, researchers asked about the managers' preferences regarding process and outcome accountability in their capacity as managers. They defined process accountability as systems in which "employees are evaluated on the processes, procedures, or means they used to obtain bottom-line results (e.g., adopting best practices), but are not evaluated on whether they actually achieve the bottom-line results" (Tetlock et al., 2013: 27). Outcome accountability was defined as systems in which "employees are evaluated on their ability to obtain bottom-line results (e.g., profits in business; other bottom-line indicators in other pursuits), but are not evaluated on the processes, procedures, or means they used to obtain these bottom-line results" (Tetlock et al., 2013: 27). Managers were able to make these distinctions, and had different preferences, which implies that both process and outcome accountability are used in organizations. Assuming that managers typically hold employees accountable for outcomes, the definition of process accountability given above provides some guidance for how managers may be able to implement process accountability in the workplace. Managers ought to choose aspects of the decision-making process that are appropriate to the industry or position of the employee. Because these aspects will vary so widely between industries and employment positions, best practices will need to be identified at the organizational level. These best practices should be clearly identified, and employees

must be made aware that they will be asked to justify decisions based on these best practices. Managers then must ask employees to justify their decisions in terms of best practices both at formal performance reviews and informally, on an ongoing basis. For one example of a global shift to include process accountability at the organizational level, the Global Reporting Initiative (GRI) encourages firms to disclose not only sustainability outcomes, but also “a description of the process, such as due diligence, that the organization used to identify the impacts related to the topic”(GRI 103: MANAGEMENT APPROACH, 2016: 6).

In sum, the results contribute to the accountability literature by introducing the concept that accountability for different types of outcomes may improve employee decision-making and behavior in different business contexts. Organizations may need to think more strategically about what they are holding employees accountable for. As demonstrated in Study 1a, the standard of holding employees accountable for financial outcomes may encourage employees to take an “ends justify the means” perspective which can result in devaluing evidence regarding social responsibility, whereas holding employees accountable for process and strategic thinking may encourage less biased evaluation of information.

**Justifications in biased decision making.** In the final experiment of this dissertation, there was some evidence to support the concept of constructed criteria (Uhlmann & Cohen, 2005) in which individuals determine which factors are most important in a decision such that it allows them to justify a biased decision. For example, previous research has shown that participants make stereotypical hiring decisions based on applicants’ genders. In that study, the most interesting finding was that participants

identified the most important criteria for success in each job (e.g., streetwise vs. formally educated) such that it matched the trait of the stereotypically preferred candidate. For example, when a streetwise female applicant for Police Chief was compared to a formally educated male candidate, participants judged formal education to be more important to the selection than being streetwise. However, when the male candidate was described as streetwise and the female candidate was formally educated, study participants judged being streetwise as more important than formal education (Uhlmann & Cohen, 2005). In the present Study 2b analysis of the reasons that participants gave to support their recommendation of the research article to the VP of Human Resources, there is evidence that types of accountability affected participants' reliance on the weakness of the study that was provided to them. This may indicate that a tendency to construct criteria in order to justify a biased decision is present in the evaluation of belief-conflicting information, and further, that accountability, particularly process accountability, can mitigate such a tendency. Future research should more carefully examine this possibility.

**Self-affirmation.** It is not enough to understand the drivers and factors involved in biased information processing and other poor decision making. It is also essential to identify interventions or moderators that can improve managerial and/or ethical decision making. In addition to accountability, there may be other interventions that will moderate the relationship between belief-conflicting information and lower evaluation of information quality that improves ethical decision-making. Recent research has pointed to self-affirmation as a technique to increase openness to information (e.g., Cohen et al., 2007; McQueen & Klein, 2006; Reed & Aspinwall, 1998).

In one study examining the effect of self-affirmation on reaction to partisan information, self-described patriotic Americans were given a report to read which challenged American foreign policy. Self-affirmation was induced by asking participants to “describe a time when your #1 personal characteristic or life domain [e.g., sense of humor, creativity, relations with friends/family, which was selected previously] was important to you, and explain why this characteristic or life domain is meaningful to you.” (Cohen et al., 2007: 419) Participants who completed this self-affirmation exercise (compared to participants who completed a similar identity threat exercise) were more open to considering the information provided in the report. In another experiment, participants who had strong pro-choice views completed the same affirmation and threat processes and then engaged in a negotiation about abortion policy with a confederate purporting to hold anti-abortion views. Those in the affirmation condition were more likely to make concessions in the negotiation and to rate the confederate more favorably than those in the threat condition (Cohen et al., 2007). This suggests that when individuals are more aware of their positive qualities, they are less defensive and more tolerant of opposing viewpoints. In the organization, encouraging employees to self-affirm may also help them to become more tolerant of opposing viewpoints.

In an unrelated study, women who were frequent caffeine drinkers were given information about the increased risk of fibrocystic breast disease due to caffeine consumption. Before receiving the information, participants in the self-affirmation condition responded to a questionnaire which was designed to elicit positive responses regarding participants' kind and compassionate behavior. Compared to the control group,

these participants were more likely to find the (factual) information convincing (Reed & Aspinwall, 1998).

Given this research which suggests that self-affirmation can decrease identity threat and reduce cognitive bias, future research ought to examine the moderating effect that self-affirmation may have on the relationship between moral beliefs, evaluation of information and use of that information.

### **Limitations**

While the experimental format allowed for control over the information that study participants read, it may be argued that the context does not represent the reality of organizational decision-making and information processing for several reasons. In real organizational settings, individuals make multiple decisions on a variety of topics, and process multiple pieces of information at once. Extraneous information and accountability for a number of different tasks and projects occurring simultaneously are likely to influence the processes discussed in these studies. Many other situational factors and individual differences are involved in decision making which cannot be addressed in experimental, online studies. Additionally, sharing of information in organizations likely depends on the nature of the relationship between individuals. Individuals in the present studies are aware that they are participating in academic research and are not likely to necessarily respond to study prompts the way they would in their own organizations. Further, accountability to a hypothetical manager or to the researcher cannot mirror a situation in which an individual is accountable to his/her employer. Future research should extend the present study findings in a true organizational setting.

Additionally, the experimental format cannot control for all pre-existing, directly or indirectly, relevant beliefs. In Studies 2a and 2b, participants have no belief about the fictitious company in the study; however, they are likely to hold beliefs about the ethical nature of human rights violations, and more importantly, the ethical obligations of firms to monitor their supply chains. Further, while the studies' accountability prompts for social outcomes and for process instruct study participants *not* to focus on financial outcomes, it is very likely that study participants have pre-existing beliefs about the implied financial accountability inherent in business. That is, most people will not choose to simply ignore the bottom line in business decision making. Thus, even though study participants may possess pre-existing beliefs regarding sweatshops or financial accountability in business situations, study participants were randomly assigned to conditions in my studies, which should control for any extraneous effects.

A second limitation of the studies is the underlying assumption that the information provided to participants, which is designed to either conflict with or confirm initial moral beliefs, is of objectively high quality and therefore participants ought to be open to it. This raises two concerns which ought to be addressed in future studies. First, the information provided could be pre-established as high quality by a pre-test of other participants who are not influenced by particular moral beliefs or accountabilities. Second, future studies should contrast high- and low-quality information, because the goal of an intervention to improve information processing ought not to increase openness to information of poor quality.

Several limitations of the studies involve scope. For example, the present research does not directly address the cognitive processes that result in biased information

processing and information distortion. Similarly, the present research examines outcomes which include decision making and information sharing but does not measure post-intervention beliefs to determine whether accountability has had an effect on employees updating their moral beliefs.

## **Conclusion**

In this dissertation, I proposed and tested a model based on psychological and management theories regarding belief formation and change in order to understand the process by which individuals believe, and share, information that contradicts their current moral beliefs. In two study designs that use real world management decision making contexts (supply chain management and human resources management), I find some evidence that evaluation of information mediates the relationship between belief-conflicting information and decision making, including sharing that information. In the case of a corporate ethical violation (human rights violation), accountability for social outcomes may encourage employees to more highly value and rely on information that contradicts their moral beliefs. In the case of a diversity hiring program, evidence suggests that accountability for strategic thinking and process positively affects employees' evaluation of, and willingness to share, information that contradicts their beliefs.

This research contributes to the literature in three ways. First, I find some evidence that evaluation of information mediates the relationship between belief-conflicting information and decisions, including the likelihood of sharing that information with others in the organization. The evidence suggests that those who receive

information that conflicts with their moral beliefs will evaluate the information negatively and will not integrate it into their decisions or share it with others. These findings have implications for researchers as well as for managers. Second, I find evidence that explicit accountability for financial outcomes results in individuals' willingness to tolerate unethical firm behavior for the sake of profit. Finally, evidence suggests that process accountability may be the most effective of the forms of accountability studied for decreasing cognitive biases present in information processing.



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1481.



## APPENDIX A: SUMMARY TABLE OF HYPOTHESIS TESTING

	Study 1a	Study 1b	Study 2a	Study 2b
<b>H1</b> <b>Initial belief →</b> <b>evaluation of info</b>	Supported	Not supported	Supported	Supported
<b>H2a</b> <b>Evaluation of info →</b> <b>decision-making</b>	Partially Supported <sup>1</sup>	Supported		
<b>H2b</b> <b>Evaluation of info →</b> <b>info sharing</b>			Supported	Supported
<b>H3</b> <b>Evaluation of info as</b> <b>mediator</b>	Supported	Not supported	Not supported	Supported
<b>H4a</b> <b>Accountability: Process</b> <b>&gt; outcome</b>		Not supported		Partially supported <sup>2</sup>
<b>H4b:</b> <b>Accountability: Non-</b> <b>financial &gt; financial</b>	Supported	Not supported		Not supported
<b>Post hoc:</b> <b>Direct effect of</b> <b>accountability</b>		Evidence <sup>3</sup>	Evidence <sup>4</sup>	

Blank cells indicate hypotheses that were not tested in all studies

<sup>1</sup> Supported for information usefulness, but not credibility

<sup>2</sup> In Study 2b, process accountability had a significantly different moderation effect compared to social outcome accountability and control group

<sup>3</sup> Financial outcome accountability had a direct effect on the allocation of the budget, compared to all other accountability conditions.

<sup>4</sup> Social outcome accountability had a direct effect on evaluation of information, compared to control group.

**APPENDIX B: SUMMARY TABLE OF PSYCHOLOGICAL LITERATURE/THEORY ON BELIEFS**

Year	Authors	Theory name or main construct studied	Beliefs implicitly/explicitly addressed	Relationship between attitudes & beliefs	Factors affecting beliefs (i.e., study findings)
1970	Osterhouse, Robert A and Timothy C Brock	distraction-acceptance hypothesis	implicit	implicit relationship	distraction → decreased counter-arguments & to increased acceptance
1976	Petty, Richard E , Gary L Wells, and Timothy C Brock Brock	distraction-persuasion relationship	implicit	subjects recorded "thoughts and ideas" about the message, coded as counterarguments	distraction → increased persuasion, moderated by poor/good quality arguments
1979	Lord, Charles G , Lee Ross, and Mark R Lepper 1979	biased assimilation; attitude polarization	explicit	implicit relationship	original attitudes → evaluations of study quality & persuasiveness; attitude polarization occurred
1985	Yates, Shelley and Suzanne Chaiken	attitude polarization	explicit	attitudes are assumed to be a product of salient beliefs; individuals strive for affective-cognitive consistency	
1999	Dietz-Uhler, Beth	response to identity threats	explicit	not addressed	group social identity → persuasion, belief of the information
1999	Kruger, Justin	anchoring & adjustment	explicit	not addressed	above-average beliefs about self → below-average estimations of others

2001	Davis, J L and C E Rusbult	balance theory	implicit	attitudes that are central to the self arguably are firmly embedded in the individual's belief system, being linked to other important attitudes, key values, firmly held beliefs, and personal identity	people adjust attitudes on non-salient items to match the partner who finds the issue salient
2003	Bernard, Mark M , Gregory R Maio, and James M Olson Olson	inoculation	explicit	values are the center in cognitive networks of attitudes and beliefs	creating or reading counterarguments → decreased persuasion
2005	Bommer, William H , Gregory A Rich, and Robert S Rubin Rubin	transformational leadership on organizational cynicism	explicit	linked with attitudes and values	Transformational leadership decreases cynical attitudes
2006	Fabrigar, Leandre R , Richard E Petty, Steven M Smith, and Stephen L Smith, and Stephen L Crites Jr Crites Jr	attitude-behavior consistency/attitude-relevant knowledge	explicit	attitude-relevant knowledge = attitude-relevant beliefs + experiences	relevant info → attitude-behavior consistency, moderated by knowledge complexity
2006	Morton, Thomas A , S Alexander Haslam, Tom Postmes, and Michelle K Ryan Ryan	none	explicit	Beliefs, attitudes, and actions are guided by membership in social groups	science that affirms gender identity → favorable ratings (including beliefs)

2007	Bodkin, Charles D and Thomas H Stevenson 2007	compares different educational techniques	explicit	not clear -- mention of both both ethical beliefs and ethical attitudes but not comparatively	educational techniques → updated business ethics beliefs
2007	Bond, Samuel D , Kurt a Carlson, Margaret G Meloy, J Meloy, J	commitment/primacy effects on information distortion	explicit	people want consistency between attitudes, beliefs, behaviors	initial choice → information distortion
2007	Hall, Crystal C , Lynn Ariss, and Alexander Todorov	biased processing	explicit	not addressed	superfluous knowledge → increased confidence in predictions (beliefs) & decreased accuracy
2007	Uhlmann, Eric Luis and Geoffrey L Cohen	none	explicit	implicit relationship	personal objectivity prime → discrimination, esp. when individuals endorsed stereotypic beliefs & when gender stereotypes are accessible
2007	Yaniv, Ilan and Maxim Milyavsky	egocentric trimming	implicit	implicit relationship	initial estimate → seeking info that is consistent with initial estimate
2009	Taber, Charles S , Damon Cann, and Simona Kucsova	disconfirmation bias	explicit	implicit relationship	prior beliefs → disconfirmation of incongruent arguments

2012	Polman, Evan and J Edward Russo	information distortion	explicit	not addressed (subjects recorded "thoughts and ideas" about the message, coded as counterarguments )	increased commitment to belief → information distortion
2013	Arad, Ayala	biased processing	implicit	implicit relationship	initial choice → biased processing (characteristics are more attractive & supporting criteria weighted more heavily)
2013	Tagler, Michael J and Catherine Cozzarelli	affective-cognitive consistency	explicit	attitude-relevant beliefs and feelings predict behavior	affective-cognitive consistency positively moderates attitude → behavior
2014	DeKay, Michael L , Seth A Miller, Dan R Schley, and Breann M Schley, and Breann M Erford Erford	information distortion	not addressed	not addressed	both leading and trailing preferences à information distortion & memory distortion
2014	Slaughter, Jerel E , Daniel M Cable, and Daniel B Turban	belief confidence	explicit	belief confidence and attitude confidence perhaps function similarly	low belief confidence à increased belief changes; positive experiences à decreased belief confidence

2015	Knobloch-Westerwick, Silvia, Cornelia Mothes, Benjamin K Johnson, Axel Westerwick, and Wolfgang Donsbach	confirmation bias	"credibility"	implicit relationship	individuals choose info with source credibility & confirming initial attitude; unlike other studies, attitudes weakened after experiment (exposure to conflicting results)
2015	Raaijmakers, Aafke G M, Patrick A M M Vermeulen, Marius T Vermeulen, Marius T Meeus, and Charlene Zietsma	institutional complexity	explicit	attitudes not addressed	Beliefs → organizational compliance (factors include coercion, time, institutional complexity)

## **APPENDIX C: PRE-TEST SCENARIOS AND MEASURES**

### **Scenario**

Imagine that you are a Procurement Analyst for Nova Inc., a United States based consumer electronics firm. Your manager, the Vice President of Procurement, has assigned you the job of identifying and recommending suppliers among those who have bid for production of a chipset in Nova's latest smart phone offering, and making a recommendation to your manager.

Your manager is new to the department and is not familiar with these suppliers. The three suppliers, Alpha, Bravo and Delta are all Taiwanese based firms that specialize in component production. Your administrative assistant has compiled research on each company including the latest news and an estimate of the real cost to Nova based on each bid's cost per unit and delivery time frame.

### **Initial belief manipulations**

You are really happy to see that Alpha submitted a bid for the new project. Alpha is a well known company and the other firms are not familiar to you. You believe Alpha is an ethical company.

You are really happy to see that Bravo submitted a bid for the new project. Bravo is a well known company and the other firms are not familiar to you. You believe Bravo is an ethical company.

### **Accountability manipulations**

I understand that for this task, my manager will evaluate me based on how well my decision ultimately affects Nova Inc.'s financial performance.

I understand that for this task, my manager will evaluate me based on how well my decision ultimately affects Nova Inc.'s social responsibility


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 **Alpha – Terminal blocks have three convenient spring-lever ...**  
Electropages (blog) – 1 hour ago  
Alpha offers a connector to fit in the tightest of spaces, that redefines wiring convenience, that combines space savings and convenience.

 **Infrastructure, funding hurdles in the way of Alpha building...**  
Yahoo Finance – March 8, 2017  
Taiwan Semiconductor Manufacturing Company and Alpha, two companies who work with KTXF, are teaming up to place a bid for a stake in Toshiba's memory chip unit according to Chinese site Liberty Times.

**Alpha X370 Taichi AMD Ryzen Socket AM4 Motherboard**  
Tom's Hardware – 2 hours ago  
This is the first X370 motherboard in our AM4 review series. Is Alpha's X370 Taichi the answer for those wanting to jump off the deep end?

 **Alpha – Multifunction metering ICs offer acceptable accuracy over large networks.**  
Electropages (blog) – June 24, 2015  
Stocked by Alpha, ADI's ADE77531 features proprietary ADCs and DSP for high accuracy over large variations in environmental conditions.


 **Back2School Social Contest from Alpha Offers Higher Education Students a Chance to Win**  
Business Wire (press release) – September 19, 2016  
The Back2School social media contest being run by Alpha electronics, a global electronics supplier, is offering students a chance to win a Digi-Key InstaLab kit and other prizes. Students with a valid university or college email address can enter by visiting Digi-Key's official [Back2School contest](#) page.


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Bravo


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 **Bravo Imposes Chinese-style sweatshop conditions in Europe**  
Electropages (blog) – November 28, 2016  
In the Czech city of Pardubice, electronics manufacturer Bravo has established harshly exploitative working conditions resembling those prevailing in China.

 **2000 in staff riot at Bravo's factory after guard rails come down**  
Daily Mail – September 24, 2016  
More than 5000 police were reportedly sent to bring the riot at the Bravo factory in the northern city of Taiyuan.

 **Marvell Introduces Groundbreaking Modular Approach to 10GbE**  
Associated Press – May 7, 2016  
"At Bravo, we're seeing an increased demand for flexible solutions that support a variety of port speeds," said Wangson Wang.

 **Bravo suicides highlight China's sweatshop conditions**  
Associated Press – June 17, 2016  
Thirteen suicide attempts since January, half of them during May, inside Bravo's huge plant at Shenzhen, a major manufacturing hub in Southern China.

**Inside Bravo's factory where workers are paid just \$1 per hour**  
Yahoo News – May 11, 2016  
Many of the staff perform monotonous tasks like wiping down screens or shaving aluminum from the edge of the logo for twelve tedious hours at a time.




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Delta


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**Delta Promotes Thompson to MD**  
Yahoo Finance – March 12, 2016  
Delta, a contender in the global computer services industry, announced today that James E. Thompson has been named Managing Director, effective immediately.

 **Delta infuses NT\$4.4B into electric vehicle battery company CATL**  
Taiwan News – March 29, 2017  
CATL Supplier, Delta, announced it will be investing NT\$4.4 billion (US\$1.4 billion) in the Chinese electric vehicle market.

 **ON Semiconductors Honors Delta with 2016 Global High Service Award**  
Associated Press – January 12, 2016  
"I am pleased to announce Delta as our 2016 Global High Service Distributor and recognize their valuable contributions to our ongoing relationship."

 **Delta may open its Chennai SEZ for phone company**  
Economic Times – February 17, 2017  
Taiwanese phone maker, Delta, is considering utilizing its large SEZ (Special Economic Zone) near Chennai to provide infrastructure for component manufacturers who could supply to its phone assembly lines.

**Delta offers to purchase property**  
Business Times – March 12, 2014  
Plans are in motion to expand Delta's electronics facility in Capeville, with the manufacturer offering...

**Dependent Variable**

	<u>Alpha</u>	<u>Bravo</u>	<u>Delta</u>
<b>Cost per unit</b>	\$7.32	\$7.41	\$7.38
<b>Delivery guaranteed by</b>	June 1	May 28	May 30
<b>Estimated cost to Nova</b>	\$74,546,298	\$74,546,345	\$74,546,325

After reviewing the summary chart provided by your assistant, you note that the differences in delivery days and prices make the bids essentially equivalent. Competition has increased among smart phone suppliers in recent years and the prices are very strong. You may choose one or more makers of the component to recommend to your manager. Please indicate the percentage of the chipset budget you recommend be allocated to each supplier.

**Manipulation Checks**

(1 = Strongly Disagree; 7 = Strongly Agree)

Financial accountability

- I am primarily accountable for the net gain or loss that results from my decision.
- My goal on this task was to make the most profitable decision for sourcing the chipset.
- I am not solely accountable for the net loss or gain that results from my decision. (R)

Social outcome accountability

- My goal on this task was to make the best decision for my company's social responsibility.
- I am primarily accountable for maintaining the company's social responsibility.
- I am not solely accountable for my company's social responsibility (R)

Initial Belief

- At the start of the study, Alpha seemed like the most ethical choice.
- At the start of the study, Bravo seemed like the most ethical choice.
- At the start of the study, Delta seemed like the most ethical choice.

- At the start of the study, I did not believe Alpha was the most ethical choice
- At the start of the study, I did not believe Bravo was the most ethical choice
- At the start of the study, I did not believe that Delta was the most ethical choice

Before reviewing the information from your assistant, which company did you believe engages in ethical business practices?

## APPENDIX D: STUDY 1A AND 1B SCENARIOS AND MEASURES

### Scenario

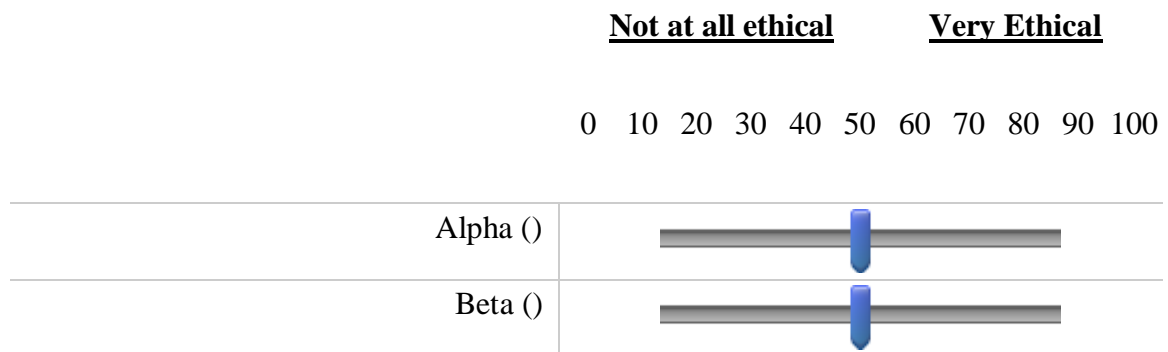
Imagine that you are a Supply Chain Analyst. Your job today is to recommend suppliers for smartphone components to your manager. The two suppliers you will review are called Alpha and Beta.

### Initial belief manipulation & Check

You are really happy to see that **Beta** submitted a bid for the new project. **Beta** is a well known company and the other firm is not familiar to you. **You believe Beta is an ethical company.**

---

How ethical do you believe the following companies to be?



### Accountability manipulations

#### **Financial outcome accountability (Study 1a, 1b)**

Your employer values its status as a **profitable** company. When you choose a supplier, you are accountable for the **financial outcomes** of your decisions, rather than the processes or any other outcomes. Your decisions will be evaluated by managers based on the likely **financial outcomes** of your decisions. After the study, you will be asked to write a short explanation to justify the financial outcomes of your decision.

Please confirm your accountability by typing the following statement:

***"For this task, I am primarily accountable for the financial outcomes of my decisions."***

---

### **Social outcome accountability (Study 1a, 1b)**

Your employer values its status as a **socially responsible** company. When you choose a supplier, you are accountable for the **social performance** (i.e., the harms or benefits to society, the community, the environment, etc.) of your decisions, rather than the processes or financial outcome. Your decisions will be evaluated by managers based on the likely **social performance** of your decisions. After the study, you will be asked to write a short explanation to justify the social outcomes of your decision.

Please confirm your accountability by typing the following statement:

*"For this task, I am primarily accountable for the social performance of my decisions."*

---


### **Process accountability (Study 1b):**


For this task, you are accountable for the **process** you use to make decisions, rather than the outcomes of those decisions. Under **process** accountability, employees are evaluated on the processes, procedures, or judgment strategies (e.g., adopting best practices), but are **not** evaluated on the outcomes (results) because work outcomes may fall outside the employee's control. After the study, you will be asked to write a short explanation of the **process** you used to make your decisions. Please confirm your accountability by typing the following statement:

*"For this task, I am primarily accountable for the process I use to make my decisions."*

---


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**Alpha – Terminal blocks have three convenient spring-lever ...**  
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 Alpha offers a connector to fit in the tightest of spaces, that redefines wiring convenience, that combines space savings and convenience.




**Alpha Promotes Thompson to MD**  
 Yahoo Finance – March 12, 2016  
 Alpha, a contender in the global computer services industry, announced today that James E. Thompson has been named Managing Director, effective immediately.


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 This is the first X370 motherboard in our AM4 review series. Is Alpha's X370 Taichi the answer for those wanting to jump off the deep end?




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 Taiwanese phone maker, Alpha, is considering utilizing its large SEZ (Special Economic Zone) near Chennai to provide infrastructure for component manufacturers who could supply to its phone assembly lines.






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 Electropages (blog) – November 28, 2016  
 In the Czech city of Pardubice, electronics manufacturer Beta has established harshly exploitative working conditions resembling those prevailing in China.



**2000 in staff riot at Beta' factory after guard rails come down**  
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 More than 5000 police were reportedly sent to bring the riot at the Beta factory in the northern city of Taiyuan.



**Beta introduces new Digital Video Port**  
 Associated Press – May 7, 2016  
 "At Beta, we're seeing an increased demand for flexible solutions that support a variety of port speeds," said Jianguo Wang, Engineering Vice President.



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 Thirteen suicide attempts since January, half of them during May, inside Beta' huge plant at Shenzhen, a major manufacturing hub in Southern China.

**Inside Beta factory where workers are paid just \$1 per hour**  
 Yahoo News – May 11, 2016  
 Many of the staff perform monotonous tasks like wiping down screens or shaving aluminum from the edge of the logo for twelve tedious hours at a time.

Which company recently promoted Thompson to the position of Managing Director (MD)?

- ☐ Alpha (1)
  - ☐ Beta (2)
  - ☐ Neither (3)
- 

Which company had a riot at one of their factories?

- ☐ Alpha (1)
- ☐ Beta (2)
- ☐ Neither (3)

**Dependent variable**

**Supplier Bids for 10,000 Units**

	<b><u>Alpha</u></b>	<b><u>Beta</u></b>
<b>Cost per unit</b>	\$8.48	\$6.23

You may choose one or more makers of the component to recommend to your manager. Please indicate the percentage of the budget you recommend be allocated to each supplier.

Alpha : \_\_\_\_\_

Beta : \_\_\_\_\_

Total : \_\_\_\_\_

Please explain why you chose these percentages:

**Evaluation of information**

(0= Strongly Disagree; 100 = Strongly Agree)

- The information in the Google search was useful
- The information in the Google search was informative
- The news briefs I reviewed helped me choose the best supplier
- *For this statement, please choose seventy percent (attention check question)*
- The news briefs I reviewed contained valuable information
- The Google information was of use to me
- The information in the Google search was accurate.
- The information in the Google search was reliable.
- The news briefs I reviewed contained credible information.
- The news briefs I reviewed are not trustworthy. (reverse coded)
- The information in the Google search was dependable.

**Manipulation checks**

In this task, which of the following were you primarily accountable for?



- o The processes used to make my decisions (1)
- o The financial outcomes of my decisions (2)
- o The social performance of my decisions (3)
- o I don't know / none of the above (4)

## APPENDIX E: STUDY 2A AND 2B SCENARIOS AND MEASURES

### Part 1

#### Initial Belief

When a company in the U.S. has an **affirmative action** plan, that company makes an active effort to improve the employment opportunities of members of groups that have historically been discriminated against, for example in the U.S., African-Americans, women and members of other minority groups have been discriminated against in the workplace.

Please indicate your level of agreement with the following statements:

(1 = Strongly disagree; 7 = Strongly agree)

- Affirmative action is an effective way to make up for past discrimination.
- Affirmative action is ineffective because everyone has equal opportunities in the workplace regardless of race or gender. (reverse coded)
- Affirmative action causes too much resentment among employees to be useful (reverse coded)
- Affirmative action creates opportunities for individuals who would not otherwise have them.
- Affirmative action improves employee diversity, which is essential to a creative work environment.
- Affirmative action results in unqualified people taking positions away from others who are more deserving. (reverse coded)
- Affirmative action improves fairness in the workplace.

**Pre-test for research descriptors for Part 2 (Study 2a only)**

How important are each of the following aspects in evaluating academic business research?

(1 = Not at all important; 5 = Extremely important)

- Data is collected in a real company instead of in a lab
- The size of the company is large enough to be statistically significant
- The research can be generalized to other industries
- The research has been peer reviewed by other researchers
- There is a control group in the experiment
- The researcher works at a prestigious university

Are there other aspects of evaluating business research that you would consider even more important than those listed above? If so, what?

**Part 2**

**Introduction/cover story**

Thank you for your continued participation!

For today's survey, imagine yourself as a human resources (HR) manager in a large corporation. One of your responsibilities is to keep your supervisor up to date with the latest news. Today, you will read a Wall Street Journal article reporting on a new study and then fill out an evaluation form.

**Social outcome accountability condition prompt (Studies 2a and 2b):**

Your employer values its status as a **socially responsible** company. For this task, you are accountable for the **social performance** (i.e., the harms or benefits to society, the community, the environment, etc.) of your decisions, rather than the processes or financial outcome. Your decisions will be evaluated by managers based on the likely **social performance** of your decisions. After the study, you will be asked to write a short explanation to justify the social outcomes of your decision.

Please confirm your accountability by typing the following statement:

*"For this task, I am primarily accountable for the social performance of my decisions."*

---

**Financial outcome accountability condition prompt (Study2b):**

Your employer values its status as a **profitable** company. When you choose a supplier, you are accountable for the **financial outcomes** of your decisions, rather than the processes or any other outcomes. Your decisions will be evaluated by managers based on the likely **financial outcomes** of your decisions. After the study, you will be asked to write a short explanation to justify the financial outcomes of your decision.

Please confirm your accountability by typing the following statement:

*"For this task, I am primarily accountable for the financial outcomes of my decisions."*

---

**Process accountability condition prompt (Study 2b):**

For this task, you are accountable for the **process** you use to make decisions, rather than the outcomes of those decisions. Under **process** accountability, employees are evaluated on the processes, procedures, or judgment strategies (e.g., adopting best practices), but are **not** evaluated on the outcomes (results) because work outcomes may fall outside the employee's control. After the study, you will be asked to write a short explanation of the **process** you used to make your decisions. Please confirm your accountability by typing the following statement:

*"For this task, I am primarily accountable for the process I use to make my decisions."*

**Newspaper article**

## THE WALL STREET JOURNAL.

Does Affirmative Action Actually Work?: New Study Says 'Yes' (Alternate version: 'No')



**(Study 2a)**

By Jim Webber

Nov. 22, 2017 5:30 a.m. ET

New research by Michael Jones of the University of Wisconsin at Madison and Danielle Brown of California University is forthcoming in the Academy of Management Journal.

For their study, they examined a group of Research and Development engineers at a large technology company. Although details of the company were not given to protect anonymity, the company was willing to participate in the study in order to determine the effectiveness of its affirmative action program which gives preferential treatment to racial minorities and women on the basis of past discrimination.

The study compared individuals hired for two different research teams, one of which used the affirmative action policy and one of which relied on traditional hiring. The study found that the individuals hired between 2014 and 2015 under the affirmative action policy had **higher employee satisfaction, demonstrated higher levels of competence, and had applied for a larger number of patents** than did those engineers in the traditional hiring group. (Alternate version: The study found that the individuals hired between 2014 and 2015 under the affirmative action policy had **lower employee satisfaction, demonstrated lower levels of competence, and had applied for a smaller number of patents** than did those engineers in the traditional hiring group.)

In reviewing this research, several methodological strengths and weaknesses can be found:

**Strengths:** Much sociological research is conducted in the laboratory or uses surveys to

gain insight into individuals' perceptions. The fact that researchers were able to use real data from an actual company provides a "natural experiment" and this kind of research is generally more applicable than conducting surveys in a laboratory.

**Weaknesses:** It is not possible to generalize these results to other companies. The sample size was very small (only 12 hires in Group A and 14 in Group B) and therefore it is not a statistically significant test.

### **Study 2b**

By Jim Webber

Sept. 12, 2018 5:30 a.m. ET

New research by Michael Jones of the University of Wisconsin at Madison and Danielle Brown of California University is forthcoming in the Academy of Management Journal.

For their study, they examined a group of Research and Development engineers at a large technology company. Although details of the company were not given to protect anonymity, the company was willing to participate in the study in order to determine the effectiveness of its affirmative action program which gives preferential treatment to racial minorities and women on the basis of past discrimination.

The study compared individuals hired for two different research teams, one of which used the affirmative action policy and one of which relied on traditional hiring. The study found that the individuals hired between 2015 and 2016 under the affirmative action policy had **higher employee satisfaction, demonstrated higher levels of competence, and had applied for a larger number of patents** than did those engineers in the traditional hiring group. (Alternate version: The study found that the individuals hired between 2015 and 2016 under the traditional hiring policy had **higher employee satisfaction, demonstrated higher levels of competence, and had applied for a larger number of patents** than did those engineers in the affirmative action group.)

In reviewing this research, several methodological strengths and weaknesses can be found:

**Strengths:** The study uses real data from an actual company which is more valid than conducting surveys in a laboratory.

**Weaknesses:** The sample size was too small and therefore it is not a statistically significant test.

### **Comprehension checks (Study2a only)**

Which group had higher levels of employee satisfaction?

- ☐ Affirmative action hiring group (1)
- ☐ Traditional hiring group (2)
- ☐ Neither (3)

What is a strength of this research?

- ☐ real data from an actual company (1)
- ☐ not enough participants (2)
- ☐ was not very recent (3)

### **Recommendation form**

	Definitely not	Probably not	Maybe	Probably yes	Definitely yes						
	0	10	20	30	40	50	60	70	80	90	100
Should the VP of Human Resources consider this research in determining hiring policy? ()											

Please write a one or two sentence evaluation of this research.

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The VP relies on your assessments and only has time to read the most important articles. Click “upload” only if you wish to attach a copy of this article with your form.

- ☐ Upload (1)

### **Evaluation of research**

**7 points: Strongly disagree – Strongly agree**

1. The research methodology was effectively designed.
2. The evidence presented in the research is very convincing.
3. The results of this study are very accurate.

4. The research methodology for this study is poorly constructed (Reverse coded).
5. The methods used make this study reliable.

**Manipulation check**

In this task, which of the following were you primarily accountable for?

- ☐ The processes used to make my decisions (1)
- ☐ The financial outcomes of my decisions (2)
- ☐ The social performance of my decisions (3)
- ☐ I don't know/none of the above (4)