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THE ROLE OF EMOTIONS AND COGNITIVE BIASES IN ETHICAL DECISIONS

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF PSYCHOLOGY

BY

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Abstract

Ethical sensemaking is a process of gathering and organizing information in a meaningful way to guide understanding of a situation. Ethical situations in organizations are dynamic with new information often emerging over time. How one processes new information and incorporates it into their understanding of a situation can be affected by emotions, decision framing, and the degree to which the new information confirms or conflicts with initial information about the situation. This study examined the impact of the discrete emotions of anger and guilt, ethical framing, and confirmation bias on ethical sensemaking processes and decision ethicality when new information was introduced, information that either conflicted with or was consistent with what participants already knew about a challenging organizational situation. Anger and guilt negatively impacted several sensemaking strategies. Anger led to lower decision ethicality compared to both guilt and neutral conditions. Mediational effects of confirming and conflicting information on emotions and sensemaking processes were also found. Practical and theoretical implications and areas for future research are discussed.

Key words: ethical sensemaking, anger, guilt, decision framing, confirmation bias

Introduction

When faced with an ethical dilemma, individuals are usually confronted with numerous pieces of information. Information can be emotionally charged, incomplete, conflicting, and change over time. For example, the Wells Fargo accounts scandal in 2016 unfolded over several months. In September of 2016, Wells Fargo was fined $185 million because employees were opening accounts without customer authorization. The bank became aware of the issue in 2013 and have since traced the misconduct to have occurred as far back as 2009. The information regarding the misconduct grew over time, resulting in 5,300 employees being terminated due to the misconduct (Blake, 2016). Another major scandal in 2016 was Mylan's EpiPen scandal. The public became outraged about the 400% price increase since 2007 and the U.S. Congress held an investigation by the House Oversight Committee. The information reveled from testimony in the investigation led to the New York state attorneys general to investigate Mylan over antitrust violations and the West Virginia state attorneys general to investigate Mylan for Medicaid fraud (Matthews & Heimer, 2016). As demonstrated by these two scandals, it is common for additional information to unfold over time in ethical dilemmas and this information may impact sensemaking and decision ethicality. Therefore there is a need to understand how individuals integrate information during the sensemaking process and make decisions when faced with ethical dilemmas.

A number of factors are known to influence sensemaking and decision ethicality (Mumford et al., 2008; Ness & Connelly, in press; Thiel, Bagdasarov, Harkrider, Johnson, & Mumford, 2012). Ethical sensemaking is the process of gathering information in order to construct a mental model to help guide understanding of a

situation (Mumford et al., 2008). During ethical sensemaking, the decision maker identifies the causes, potential constraints, and engages in forecasting. Ultimately ethical sensemaking leads to decisions. The process of sensemaking is influenced by various situational and personal factors including emotion and cognitive biases. It is common for emotional reactions to occur when an individual is faced with an ethical dilemma (Gaudine & Thorne, 2001; Mumford et al., 2008; Thiel et al., 2012). Affective events theory maintains that organizational events can trigger affective responses in employees which can impact attitudes, cognition, and behavior (Weiss & Cropanzano, 1996). Specifically, these emotional reactions can impact cognitive processes (Angie, Connelly, Waples & Kligyte, 2011; Lench, Flores, & Bench, 2011; Lerner, Li, Valdesole, & Kassam, 2015) and ethical sensemaking processes (Johnson, 2015). Attitudes, cognition, and behavior are also affected by cognitive biases (Kahneman & Tversky, 1977; 1982; Tversky and Kahneman, 1981). Ethical dilemmas are ambiguous and complex which can lead individuals to apply cognitive shortcuts to their reasoning in order to understand the situation. These shortcuts can increase the likelihood of an individual engaging in cognitive biases (Das & Teng, 1999; Hodgkinson, 2001; Maule & Hodgkinson, 2002; Schwenk, 1995). The use of cognitive biases may impact the ethicality of an individual's decision (Rogerson, Gottlieb, Handelsman, Knapp, & Younggren, 2011). However, there are a number of unresolved questions about how emotions and cognitive biases might influence ethical sensemaking and there are no studies examining their joint influence on sensemaking and decision ethicality.

Since the 1980's the study of emotions in work settings has exploded (Ashkanasy & Humphrey, 2011). Vitell, King, and Singh (2013) emphasized the

importance of looking at the effects of specific emotions (versus general positive or negative affect) on ethical decision making because different discrete emotions may exert influence in different ways. In the current study, two specific emotions are studied - anger and guilt. Anger and guilt were chosen because they share many patterns of appraisal but differ with respect to agency, or who or what caused goal blockage (Roseman, 1996, Smith & Ellsworth, 1985). Only one study has examined and compared anger and guilt using an ethical sensemaking framework (Johnson, 2015).

During the process of sensemaking, an individual creates a mental model and decision frames can influence the creation of that mental model. In fact, Sunstein (2007) states that information can be framed in such a way to shift an individual's ethical assessment in the desired direction. Framing can affect how the ethical dilemma is construed which could impact the nature and extent of the use of various sensemaking processes and overall decision ethicality. Additionally, individuals tend to prefer information that supports their initial understanding of an issue and negate information that conflicts with their initial understanding of the issue (Festinger, 1957; Frey, 1986). Confirmation bias is identified as a potential bias that can affect ethical sensemaking (Hammond, Keeney, & Raiffa, 1998) but there is a lack of experimental studies examining how it impacts ethical decision making. In this study confirmation bias is examined as a mediator between emotions and ethical sensemaking, and framing and ethical sensemaking.

The goals of this study are to extend research on ethical sensemaking by examining the impact of emotions, ethical framing, and confirmation bias on

sensemaking processes and decision ethicality. Specifically, we will examine two discrete emotions with negative valence, anger and guilt and their impact on sensemaking and decision ethicality. While prior research has shown that cognitive biases impact ethical decision making (Rogerson et al., 2011; Medeiros et al., 2014; Messick & Bazerman, 1996), there are none that we know of that examine ethical framing and confirmation bias. This study examines the main effects and joint influences of ethical framing and emotions on ethical sensemaking; the impact of confirmation bias on ethical sensemaking; and the mediational effects of confirmation bias on ethical framing and ethical sensemaking, and emotions and ethical sensemaking.

Ethical Sensemaking

Recent models of ethical decision making account for the affective, intuitive, and impulsive aspects of the ethical decision making process (e.g. Detert, Treviño, & Sweitzer, 2008; Gaudine & Thorne, 2001; Haidt, 2001; Mumford et al., 2008; Sonenshein, 2007). Ethical sensemaking involves a number of cognitive and affective process related to gathering information, interpreting and organizing information, and applying that information to make a decision (Mumford et al., 2008; Sonenshein, 2007). During sensemaking, an individual frames an experience as being meaningful in some specific way by creating a mental model to help guide the ethical decision making process (Brock et al., 2008; Kligyte et al., 2008; Mumford et al., 2008; Sonenshein, 2007). Additionally, cognitive and behavioral actions are taken by the decision maker in order to integrate both situational and personal factors (Weick, 1995). Examining ethical decision making through the lens of sensemaking allows for further exploration into how individuals perceive, evaluate, and make decisions about an ethical dilemma.

Sensemaking processes are the foundational operations underlying mental model construction during ethical sensemaking (Mumford et al., 2008). Sensemaking processes include the identification of key causes, identification of key constraints, and forecasting consequences of various solution alternatives (Brock et al., 2008; Katz, Caplan, & Merz, 2010; Mumford et al., 2008). Causes are objects that are most central to the initiation and subsequent unfolding of the ethical dilemma. When identifying key causes, individuals will also identify the relative importance of the causes (Mumford et al., 2008). Various factors that can limit potential courses of actions in response to the dilemma are called constraints. Examples of possible constraints are limited resources, interpersonal issues, and procedural issues. Constraints can vary in breadth and the severity of their impact (Mumford et al, 2008). Forecasting involves thinking about possible actions and the impact of those actions on individuals, groups, the organization, and other relevant stakeholders. Forecasts can be positive or negative, have a long or short timeframe, and vary in quality (Stenmark et al., 2010). Sensemaking processes allow an individual to construct a mental model of the ethical issues at hand by enabling the evaluation of the plausibility and usefulness of various courses of action with consideration of situational and personal parameters. The use of sensemaking processes increases decision ethicality (Antes et al., 2007; Bagdasarov et al., 2015; Caughron et al., 2011; Kligyte, Connelly, Thiel, & Devenport, 2013; Mumford et al., 2006; 2008; Stenmark et al., 2010; 2011; Thiel et al., 2011). Several studies have established that sensemaking processes play a mediating role to ethical decision making (Bagdasarov et al., 2015; Stenmark et al., 2011; Johnson, 2015). The sensemaking processes and ultimately, decision ethicality can be impacted by various

factors. Next, we provide overviews of the potential roles of decision framing, emotions, and confirmation bias in ethical sensemaking and ethical decisions.

Framing

When engaged in sensemaking, framing guides how a problem is defined initially. Decision frames are cognitive structures used to organize information and expectations about a given situation in order to facilitate understanding of the situation (Gioia, 1992). Within a decision frame, an individual is able to organize all aspects associated with a particular choice including specific acts, possible outcomes, and contingencies (Tversky & Kahneman, 1981). Simply put, frames are "mental structures that simplify and guide our understanding of a complex reality" (Russo & Shoemaker, 2004 p. 21).

The type of decision frame used to anchor sensemaking impacts an individual's final decision by influencing the interpretation of information, events, and people in the situation. Decision frames exert powerful influences on how individuals think about and respond to a situation (Treviño, den Nieuwenboer, & Kish-Gephart, 2014). A decision frame promotes identification and evaluation of specific causes, constraints, and forecasted outcomes (Entman, 1993). Different decision frames could possibly lead to different understandings of the same situation because a decision frame may highlight certain elements and downplay others. In an ethical sensemaking context, when an individual is unable to identify the ethical dimensions of a situation it is called "ethical blindness" (Palazzo, Krings, & Hoffrage, 2012).

Past research has explored the impact of decision frames on ethical intentions and behaviors (for review see Treviño et al., 2014). In a series of studies examining

how sanctioning systems affect cooperative behavior, Tenbrunsel and Messick (1999) found that participants exposed to no sanctions for uncooperative behavior were more likely to use an ethical frame and were more cooperative than those who were exposed to weak sanctions and adopted a business frame. In a study conducted by Kouchaki, Smith-Crow, Brief, and Sousa (2013), participants exposed to money primes, as compared to a control condition, were more likely to have a business decision frame which led to unethical intentions and behaviors. Greenbaum, Mawritz, & Elssa (2012) found that supervisor bottom-line mentality was positively related to employee bottom-line mentality which was positively related to social undermining. In a study by Schweitzer, DeChurch, & Gibson (2005) which also measured decision frames, participants with a win-oriented conflict frame, as compared to individuals with a cooperative conflict frame, were more likely to use deception in a negotiation task. Molinsky, Grant, & Margolis (2012) primed participants with an economic decision frame and those primed participants were less compassionate to others in need compared to a control condition. Kern and Chugh (2009) found participants presented with a loss frame engaged in more unethical behavior than participants presented with a gain frame. In a study examining the influence of reading stories of leadership on ethical decision making performance, participants who read personalized leader stories and were exposed to an ethical salience probe identified more ethical issues, compared with participants who read personalized leader stories with no salience probe (Watts, Ness, & Steele, under review).

In the current study, we propose that inducing an ethical decision frame will affect sensemaking by helping participant to define the scenario in ethical terms and use

ethical sensemaking processes. This will potentially result in better ethical decisions. When faced with an ethical dilemma, individuals able to identify the situation as moral or ethical in nature see an increased moral salience of the situation (Jones, 1991). Individuals who view the situation as involving an ethical issue will be able to identify more critical causes of the ethical dilemma and analyze the impact of those causes on the situation. Individuals with an ethical decision frame will also look for constraints that could hinder their decision making process and will analyze the impact of those constraints. Additionally, individuals using an ethical decision frame are more likely to identify positive, negative, long-term, and short-term consequences, resulting in better forecasts. By using an ethical frame to organize all elements on the situation, individuals will make more ethical decisions. Thus we propose:

> H1: Framing an organizational problem as an ethical dilemma, versus as a neutral problem to be solved, will (a) increase the use of sensemaking processes and (b) result in more ethical decisions.

Emotions and Ethical Sensemaking

Emotions are inherently intertwined with any decision making process (Frijda, 1986; Lazarus 1991; Pfister & Böhm, 2008). This includes ethical sensemaking because what an individual deems relevant to their mental model construction of the situation is guided by their emotions, personal history, and motives (Pfister & Böhm, 2008). It is especially important to study specific emotions because appraisal theories of emotion assert that once a specific emotion is activated, the appraisal dimension or tendency of that emotion will influence subsequent judgement and decision making (Lerner & Keltner 2000; 2001; Vitell et al., 2013).

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Cognitive appraisal theory is the foundation for the appraisal tendency framework. This framework suggests that different emotions are associated with different patterns of situational appraisals. Primary appraisal of emotion is the evaluation of whether an event has occurred that is relevant to an individuals' goals and well-being. If the event is goal relevant, positive events will evoke positively valent emotions and negative events will evoke negative emotions. Next, secondary appraisal occurs related to an individuals evaluation of coping options (Barsade & Gibson, 2007). A specific emotion is evoked based on the selection of a combination of several dimensions such as perceived control, certainty, and agency in the situation (Frijda, 1986; Lazarus, 1991; Roseman, 1996; Smith & Ellsworth; 1985).

Anger and guilt are both negative emotions which are evoked due to goal incongruence in the primary appraisal (Lazarus, 1991; Roseman, 1996). Anger and guilt also share similarities in controllability and certainty. Controllability is whether an individual perceives she can control, change, or modify aspects of the situation (Frijda, 1986; Roseman, 1996). Anger and guilt both occur because an individual believes she has some degree of control over the situation (Frijda, 1986; Tangney, 1995). Certainty is whether the outcomes of an event are known with full probability, and the emotions of anger and guilt share a similar level of certainty (Frijda, 1986; Roseman, Spindel, & Jose, 1990). Anger and guilt differ in the dimension of agency. Agency is the whether the cause of the event is by circumstances beyond anyone's control, by some other person, or by the self. Events caused by some other person elicits anger, whereas, events caused by the self elicits guilt (Frijda, 1986; Roseman, 1996; Smith & Ellsworth, 1985). Using a procedural priming method, Neumann (2000) confirmed that

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participants exposed to neutral events with internal attribution were more likely to experience guilt and participants exposed to neutral events with external attribution were more likely to experience anger.

Anger. The emotion of anger and its relation to ethics has been studied for centuries. Aristotle (1953) stated in his book "Nichomachean ethics" that anger evokes a desire for revenge. Modern psychologists would agree with Aristotle, as the action tendency associated with anger is to attack the agent deemed to be the causes of an offense (Averill, 2012). In fact, what differentiates anger from other negative emotional states is (a) harm or loss is blamed on another agency, (b) a belief that the agent had control over the situation and could have acted differently, and (c) a goal is blocked (Frijda, 1986; Lazarus, 1991). Within work contexts, anger is caused by acts of colleagues, management, or customers (Basch & Fisher, 1998).

Lench et al. (2011) conducted a meta-analysis and found that anger, compared to neutral emotion, influences cognition, judgement, experience, and behavior with moderate effect sizes. Ethical sensemaking processes could be affected in a number of ways. Anger arises when a person is unable to meet their goals and she blames someone (or something) as causing the problem (Van Kleef, 2010). This may limit what a person views are possible causes to the situation since anger arises from the perception of a specific agent causing the issue. Anger may also influence what constraints an individual views as relevant to the situation. Past research examining the impact of anger on ethical sensemaking processes found a trending main effect where anger evocations lead to identification of less-critical constraints than those in the control condition (Johnson, 2015). Anger induces a desire to bring about change so the

blocked goal is attainable and attack is seen as a viable option to restore the goal (Fischer & Roseman, 2007; Lazarus, 1991). Forecasting may be limited by that desire to attack the source of the goal blockage. Johnson (2015) found that participants in a neutral condition engaged in longer-term forecasts than those in the anger condition.

In ethical situations, anger may be caused by moral indignation where public good is endangered (Pfister & Böhm, 2008). In two fields studies, Antonetti and Maklan (2016) extended a model of moral outrage and found support that the experience of anger is linked to appraisals of unfairness. Grežo and Pilărik (2013) found that anger induced participant chose harsher punishments and considered those punishments to be more morally correct than participants in the neutral condition. Individuals who believe something to be unfair may be fueled by their anger to achieve retribution, especially when the situation is ethical in nature.

The desire for retribution fueled by anger leading to lower ethical decisions making is evidenced by past research. Using ethical scenarios that induced specific emotions, Krishmakumar and Rymph (2012) found that increased levels of anger decreased ethical decision making. Kligyte et al. (2013) found that anger induced participants scored lower on an ethical decision making measure than those in a control condition. Johnson (2015) induced anger and guilt using an ethical scenario and found that those in the anger evoked condition were the lowest in ethical decision making compared to both the guilt condition and a control condition. Thus we propose:

H2: State anger stemming from an ethical problem will lead to (a) less use of sensemaking processes and (b) result in lower ethical decision making than a neutral emotional state.

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Guilt. Guilt is like anger such that an agent is blamed, however, that agent is specified as the ego, or one's self (Frijda, 1986). Guilt involves a sense of tension, remorse, and regret over a situation and knowing one has to deal with the situation but not wanting to face the situation (Frijda, 1986; Tangney, 1995). With guilt, an individual focuses on a specific behavior and is concerned about the effects of that behavior on others (Tangney, 1995). As such, the action tendency associated with guilt is to confess, apologize, or make reparations for the outcomes of the behavior (Lazarus, 1991; Tangney, 1995).

The sensemaking processes could be affected by guilt in a number of ways. The core relational theme associated with guilt is "having transgressed a moral imperative" (Lazarus, 1991 p. 240). As guilt is a self-focused emotion, an individual experiencing guilt wants to quickly fix the problem and move on. Dwelling on the causes and constraints, and forecasting potential solutions would force the individual to continue to feel guilty. Individuals do not want to stay in a guilt state for an extended period of time (Haidt, 2001; Tangney & Dearing, 2002). In fact, Johnson (2015) found that individuals in a neutral emotion condition engaged in longer term forecasts than those in a guilt evoked condition.

Guilt is one of the moral emotions and arises from "internalized values about right and wrong" (Lazarus 1991, p. 240). Cohen (2010) found that guilt-proneness significantly predicted disapproval of false promises, misrepresentations, lying during negotiations, and making promises not intended to be kept. Agnihotri et al. (2012) build on Gaudine and Thorne's (2001) cognitive-affective model and found that salesperson guilt-proneness positively influence ethical attitudes which in turn

influenced ethical decision making. However, Johnson (2015) found that participants in the guilt condition did not significantly differ from those in the neutral emotion condition in decision ethicality. Thus we propose:

H3: State guilt stemming from an ethical problem will lead to less use of sensemaking processes.

As previously discussed, guilt and anger share many appraisal dimensions but differ in terms of agency. Those who experience guilt believe the self is the reason for goal blockage and those who experience anger believe another agency is responsible for goal blockage (Smith & Ellsworth, 1985). This difference could result in differences between guilt and anger in the use of sensemaking processes and decision ethicality.

Past research by Johnson (2015) demonstrated that anger, compared to guilt, led individuals to identify more causes of the situation. Perhaps, because those experiencing guilt want to make reparations and move on from the problem, whereas, those experiencing anger want to bring about change in order to attain the blocked goal, those experiencing anger will engage in more sensemaking processes than those experiencing guilt. Angry individuals may also engage in sensemaking to justify and/or plan retaliatory actions. Johnson found that those in an anger evoked condition had more retaliatory cognitions and behavior than those in a guilt condition. Similarly, Kligyte et al. (2013) found that those in an anger induced condition, compared to both a fear and a control condition, engaged in greater retaliation and less helping behaviors. The desire for retaliation, versus reparation, would require more planning and thus more use of sensemaking processes. The use of sensemaking processes by angry individuals does not necessarily mean that those who are angry will have higher decision ethicality. In

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fact, Johnson found that participants in an anger evoked condition made less ethical decisions than those in the guilt condition. Thus we propose:

> H4: State guilt stemming from an ethical problem will lead to (a) less use of sensemaking processes than an angry emotional state but (b) result in more ethical decisions than an angry emotional state.

Confirmation Bias

When an individual is faced with an ethical dilemma new information may come to light or more information will be sought to help the person build a mental model of the situation (Mumford et al., 2008). The new information can change how issues or situations are conceptualized and how relevant (or not) the new information is for understanding and addressing the ethical problem (Choo, 2006). Within an ethical dilemma, it is common for new information to become available. Some of that new information will be consistent with previous or known information about the situation and some of it may conflict.

Confirmation bias occurs when an individual prefers or gives more attention or weight to information that is consistent with their previous understanding of the situation over information that conflicts with previous information (Jonas & Frey, 2003; Jonas, Graupmann, & Frey, 2006; Jonas, Schulz-Hardt, & Frey, 2005; Jonas, Schulz-Hardt, Frey, & Thelen, 2001; Jonas, Traut-Mattausch, Frey, & Greenberg, 2008). A large body of literature indicates that individuals prefer information that supports their understanding of an event, however the concept goes by several different names. The tendency to be selective of information is referred to in the literature as selective exposure to information (e.g. Festinger, 1957; Frey, 1986), congeniality bias (e.g. Eagly

& Chaiken 1993; 2005), and confirmation bias (e.g. Jonas et al., 2001). For the purpose of this paper, the process of attending to and using information that supports initial information provided about the situation and not using information that conflicts with the initial information presented will be called confirmation bias.

Confirmation bias originates from the concept of the availability heuristic. Tversky and Kahneman (1974) describe the availability heuristic as an occasion when an individual assess the probability of an event by how easily one can recall similar instances or occurrences. One of the four categories of biases that lead to the availability heuristic are "biases due to the irretrievability of instances." Tversky and Kahneman state that an event is more easily retrievable when it is familiar or especially salient to an individual. For example, Tversky and Kahneman conducted a study in which participants were given a list with an equal number of male and female famous people. Participants recalled the list as having more males or females based on which group (male or female) was relatively more famous. One specific form of the availability heuristic is the illusory correlation which is the bias in the judgement of the frequency with which two events co-occur. The illusory correlation effect is very resistant to contradictory information (Chapman & Chapman, 1969).

Hammond et al. (1998) explains that there are two psychological forces behind confirmation bias. First, individuals have a tendency to subconsciously decide what they want to do before they decide why they want to do it. Second, individuals have an inclination to be more engaged with things they like than things they dislike, known as dissonance theory (Festinger, 1957; Frey, 1986). Dissonance theory asserts that when engaged in decision making individuals experience an averse motivational state due to

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needing to deal with the disadvantages of the chosen option and not having the advantages of the option not chosen. Cognitive dissonance can be reduced by preferring supporting information and avoiding disconfirming information, otherwise known as confirmation bias (Frey, 1986).

Past research has found that inconsistent information is ok if there is a very small amount of information to consider (Freedman, 1965; Freedman & Sears, 1965; Sears, 1965). More information makes it more difficult for individuals to process and so they resort to shortcuts and go with familiar information (Fischer, Schulz-Hardt, and Frey, 2008). In the real world, we are very seldom only given two pieces of information thus this study used ten pieces of information to examine confirmation bias.

Confirmation bias and ethical sensemaking. The ethical sensemaking process could be impacted by confirmation bias. Messick and Bazerman (1996) explored several theories executives use to make judgments and guide decisions. They provided advice for executives to improve their ethical decision making by increasing the quality of their decisions through creating accurate assessments of risk. Rogerson et al. (2011) in their discussion of non-rational processes in ethical decision making assert that confirmation bias can and will affect ethical decision making. There are few studies that explicitly explore confirmation bias and ethical decision making. Medeiros et al. (2014) identified a taxonomy of biases operating in the ethical decision making of university faculty. They described willful ignorance as "ignorance of outcomes of information that would cause one to move backwards, abandon current plans, or to face negative consequences." (p. 226). Ehrich and Irwin (2005) demonstrated how consumers engage in willful ignorance with ethical issues. Consumers requested ethical

attribute information about products at a lower rate than they would have used the information if it were easily available.

The use of information that conforms to an individuals' existing understanding of the situation provides limited use above what the individual already knows. New information that is consistent with existing information will strengthen an individual's belief that the information is accurate but does not extend the mental model construction. When an individual is faced with an ethical dilemma, the more information they have about the situation can impact the sensemaking processes. With additional information, an individual can identify more potential causes and constraints. The additional information can also help the individual to create higher quality and more forecasts of possible outcomes. This higher engagement in the sensemaking process will allow an individual to more fully understand the ethical dilemma at hand and with that greater understanding, they will be able to make better ethical decisions. Thus we propose:

> H5: Individuals who use conflicting information when solving the ethical
> dilemma will have (a) increased use of sensemaking processes and (b) more
> ethical decisions.

Confirmation bias may explain why certain emotions and framing exert influence on sensemaking and decision ethicality. In order for additional information to be incorporated into a person's understanding of the situation sensemaking is required. As individuals have more information to consider, they may resort to using information that is familiar and seek out information that confirms their existing understanding of

the situation. The mediational effects of confirmation bias on ethical framing and sensemaking, and emotional states on sensemaking are further discussed.

Confirmation bias and framing. Confirmation bias may be affected by the type of framing used in the ethical sensemaking process. Kastenműller, Greitemeyer, Jonas, Fischer, and Frey (2010) found that when individuals were asked to frame their information search in terms of gains (selecting from a list which articles they would like to read) versus loss (selecting from a list which articles they do NOT want to read) participants sought more conflicting information in the loss condition. In a study conducted by Jonas, Traut-Mattausch, Frey, and Greenberg (2008) participants told to focus on the decision increased confirmation bias whereas participants told to focus on the available pieces of information decreased confirmation bias. The evidence suggests that how the problem is framed can affect confirmation bias.

When the situation is framed as an ethical dilemma, individuals know it is a high stakes situation in which others could be affected. Framing a situation as ethical, cues a person to think beyond the effects on the self and to consider how others may be affected. Jonas et al., (2005) found that participants who were asked to act as advisors used both confirming and disconfirming information to make a decision however, they still had a preference for confirming information. Jonas and Frey (2003) found participants who played the role as a friend giving advice presented both confirming and disconfirming evidence and participants who played the role of a travel agent presented more information that supported their decision. Ethical dilemmas can increase the salience of how other individuals will be affected thus individuals may be more inclined to use conflicting information when faced with an ethical dilemma.

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Framing could affect whether a person is open to looking for additional information. When a problem is framed as an ethical problem, an individual may be more open to look for additional information, especially conflicting information. Ethical framing may lead to individuals to seek out conflicting information because the moral salience and stakes are higher, motivating a more careful consideration of information (Jones, 1991). The individual will incorporate the conflicting information into their understanding of the situation and may identify additional causes, constraints, and potential forecasts. Also, those who use conflicting information will be able to use the additional information to make a more informed decision. Alternatively, participants in the neutral condition will use the confirming information but not the conflicting information. The ethical salience of the situation is not high for those in the neutral condition and they may be more inclined to take a "mental shortcut" and just use information that conforms with their existing understanding of the information. Hence:

H6: Confirmation bias will mediate the relationship between ethical framing and sensemaking processes and decision ethicality, such that those who see a problem framed ethically will use conflicting information and thus will use more sensemaking processes as compared to those who see a problem framed neutrally will use confirming information and will use less sensemaking process.

H7: Confirmation bias will mediate the relationship between ethical framing and decision ethicality, such that those who see a problem framed ethically will use conflicting information and thus will have higher decision ethicality compared to those who see a problem framed neutrally, who will use confirming information and have lower decision ethicality.

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Confirmation bias and emotions. The emotional state of an individual may also influence the use of confirming or conflicting information. Ehrich and Irwin (2005), found that consumers avoid feeling sad or angry over labor practices by not requesting ethical attribute information for products even though the consumers indicate that they would have used the information if it were easily available. Similarly, Jonas et al., (2006) found that induced negative mood increase the preference for consistent information. Thus:

> H8: Confirmation bias will mediate the relationship between state emotion and
> the sensemaking processes and decision ethicality such that, those with neutral
> emotion stemming from the problem will use conflicting information and
> confirming information more than those in the state anger and state guilt
> conditions and thus will (a) use more sensemaking processes and (b) have higher
> decision ethicality.

There may be differences between anger and guilt in use of confirming and conflicting information. The self versus other agency appraisal dimension of guilt and anger could influence an individual's preference for confirming information, conflicting information, or both. Information preference would in turn influence the use of sensemaking processes and decision ethicality. Agrawal, Han, and Duhacheck (2012) induced specific emotions and found that participants in the preference inconsistent condition experiencing anger were less likely to change their minds than those experiencing shame or neutral emotions. In the current study, the experienced emotion is relevant to the ethical dilemma and we expect to have similar results. Those experiencing anger are less likely to seek out information that conflicts with their initial

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understanding of the situation and will engage in less sensemaking processes. Anger may lead to individuals seek out only confirming information because they feel like they fully understand the causes of the situation and have a desire for retribution (Frijda, 1986; Johnson 2015; Kligyte et al., 2013; Roseman, 1996; Smith & Ellsworth, 1985). Individuals who feel guilty may look for conflicting information because it gives them a reason to no longer feel guilty for "causing" the situation. Those who experience guilt will want to resolve their anguish and will look to solve the issue. Thus we propose the following mediational hypotheses:

H9: Confirmation bias will mediate the relationship between state emotion and the sensemaking processes and decision ethicality such that, those with state guilt stemming from the problem, compared to anger, will use conflicting information more and thus will (a) use more sensemaking processes and (b) have higher decision ethicality.

H10: Confirmation bias will mediate the relationship between state emotion and the sensemaking processes and decision ethicality such that, those with state anger stemming from the problem, compared to guilt, will use confirming information more and (c) will use less sensemaking process and (d) have lower decision ethicality.

Method

Sample and Design

After approval from a large south central university's Institutional Review Board, participants were recruited from the psychology department's human participant pool, which contains undergrads from a wide variety of majors. Participants were

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recruited using an online resource (SONA systems) where students could view brief descriptions of studies in which they could voluntarily participate for course credit. There were 224 participants, 70 men and 153 women (one did not disclose), with an average age of 18.7, $SD = 1.74$. Participants had an average of 2.43, $SD = 2.28$ years of work experience and a majority of participants indicated English was their first language (92%).

A 3 (emotion evocation of anger, guilt, or neutral) x 2 (ethical probe or neutral) between-subjects design was utilized to investigate the proposed hypotheses. Participants were randomly assigned to one of the six conditions. Confirmation bias was assessed through two measured variables.

Procedure

The general procedure consisted of four steps. First, after completing an informed consent form, participants complete a series of covariates included the timed Wonderlic Personnel Test. Participants were then asked to take on the role of a marketing research analyst and were given information regarding their job with the organization, the organization's background, and a description of their relationship with a coworker and a manager (See Appendix A). Next, participants were presented with a challenging organizational situation with ethical implications, including an email from a coworker that relayed the need to complete a task. Participants also read an explicit statement framing the situation as either ethical or neutral framing. Then, participants were given ten statements revealing new information about the case. Order of statements were randomized for each participant. Immediately following the new case information, participants were asked a series of questions. The questions asked

participants to describe (a) the problem, (b) causes of the problem, (c) key factors and challenges of the problem, (d) what should be considered when solving the problem, (e) possible outcomes, (f) their decision and next steps, and (g) the reasoning behind their decision (Mumford et al., 2006; 2008). Then participants completed a number of manipulation checks specific to emotion evocation (e.g., guilt and anger) and ethical framing. Lastly, participants completed additional covariate measures.

Manipulations

  Emotion evocation. The emotion evocation manipulation (anger, guilt, or neutral) was embedded in the case in which participants were asked to play a role. This case was modified from a case used in past studies on ethical decision making (e.g., Bagdasarov et al., 2015; Johnson 2015). The participant is asked to assume the role of as a member of a market research group at an organization named Innovation Marketing Inc., and a mistake is caught regarding research done for a hybrid car ad campaign. After the mistake is caught, the participant receives an email from a coworker with a reminder to complete the final report for the project.

  With all other content being held constant, the source and potential outcomes of the mistake were manipulated to reflect the underlying appraisal patterns of guilt and anger. The first step (i.e., the primary appraisal) for inducing negative valence emotions is personal goal incongruence (Lazarus, 1991). Thus, for both anger and guilt conditions, the email from the coworker emphasized the large-stakes nature and potential consequences of not completing the project report such as someone losing their job. The neutral emotion group read a general email about the need to complete the project report by the deadline.

The secondary appraisal of self- or other-blame or responsibility was manipulated to specifically generate the negative emotions of either anger of guilt (Lazarus, 1991; Smith & Ellsworth, 1985). In the anger condition, the mistake was made by a coworker and could result in the participant losing his/her job. In the guilt condition, the mistake was the participants' fault and could cause a coworker to lose his job. The secondary appraisal of controllability was held constant by the mistake being committed by a person (Smith & Ellsworth, 1985). A statement following the scenario emphasized these secondary appraisals by underscoring the mistake and the consequences. For the neutral emotion condition, there was no specific source mentioned and the scenario referenced the work group, which created more of a vague source of error and controllability (See Appendix B for cases with manipulation details).

Manipulation check. Success of the emotion evocation manipulations was assessed via self-reported levels of anger and guilt, ratings of anger and guilt within the open-ended responses (rating procedures explained in next section), and a modified version of Roseman's (1996) self- versus other- control and responsibility measure. After completing the scenario questions, participants reported levels of anger and guilt using a 5-point Likert scale of current experience (1 = *very slightly/not at all* and 5 = *extremely*). The adjectives angry, irritated, irate, and mad assessed anger (Nabi, 2003). Guilt was assessed using the adjectives guilty, regret, remorse, self-conscious, and humiliated (Harder & Salma, 1990). The Cronbach's alphas for anger and guilt were .74 and .87, respectfully.

Raters identified the levels of anger ($r*_{WG}$ = .71; ICC[2] = .74) and guilt ($r*_{WG}$ = .65; ICC[2] = .85) in responses to the ethical scenario. Raters assessed the participant seemed angry and guilty in their responses using 5-point Likert scales (anger, 1 = *participant does not appear angry or defensive regarding the act* and 5 = *participant appears very angry about the event and is defensive regarding the event*; guilt, 1 = *participant does not appear to evaluate behavior or feel any remorse regarding their behavior* and 5 = *participant highly evaluates their behavior and feels a high level of remorse regarding their behavior*).

The underlying appraisals of the emotions were assessed using seven items modified from Roseman's (1996) of self- versus other- control and responsibility measure. After self-reporting levels of anger and guilt, participants responded to six 9-point semantic differential scales asking participants to identify the cause of their emotional reaction. Items include "Thinking that I was not at all responsible for leaving the technical specification off of the list" to "Thinking that I was very much responsible for leaving the technical specifications off of the list" and " Thinking that circumstances leading to leaving the technical specification off of the list was not at all caused by someone else" to " Thinking that leaving the technical specifications off of the list was very much caused by someone else". Roseman (1996) provided evidence for construct validity of the self- versus other- control and responsibility measure. The Cronbach's alphas for self- and other- control and responsibility were .85 and .64, respectfully.

Ethical frame. The ethical framing manipulation was embedded in the case content (See Appendix C for framing manipulations). After reading the case background information, the ethical dilemma, and the emails, participants were told that

the mistakes may have "ethical implications for the project" in the ethical framing

condition or the mistake may have "implications for the project" in the neutral framing

condition.

The ethical framing manipulation was assessed by self-report and open ended

ratings. After responding to the open ended questions about the scenario, participants

reported the extent to which they believed the issue was an (a) ethical and (b) moral

problem using a 5-point Likert scale (1 = *disagree strongly* and 5 = *agree strongly*).

Raters assessed ethical framing ($r*_{WG}$ = .75; ICC[2] = .87) via the open-ended responses

by rating the degree to which the participant identified the problem as ethical in nature

using a 5-point Likert scale (1 = v*ery poor problem ethicality recognition* and 5 = *very*

strong problem ethicality recognition).

Confirmation bias. Confirmation bias has been examined in a number of

different ways in the literature including ratings for preference of information (Brannon,

Tagler, & Eagly, 2007; Feather 1963), rank order of degree of interest (Brock, 1965),

amount of time devoted to viewing information (Brock & Balloun, 1967; Olson &

Zanna, 1979), and selection of information for further review (Frey & Wicklund, 1978).

Confirmation bias has yet to be examined within the ethical sensemaking framework.

For this study, participants were shown ten pieces of additional information about the

case after receiving information about the scenario and ethical dilemma but before

asking to solve the problem (See Appendix D for the statements). Five pieces of

information were consistent with initial case information and five pieces of information

conflicted with initial information. For each of the ten pieces of information, raters

assessed the extent to which the participant used the piece of information in their

decision making process using a 5-point Likert scale (1 = *did not mention statement at all* and 5 = *explicitly mentioned statement and extensively used in the decision making process*). The ratings of the five confirming pieces of information were summed to create the use of confirming statements variable ($r*_{WG}$ = .88; ICC[2] = .65) and the ratings for the five conflicting pieces of information were summed to create the use of conflicting statements variable ($r*_{WG}$ = .81; ICC[2] = .64). Higher scores on the use of confirming statements potentially indicates more confirmation bias, while higher scores on use of conflicting information potentially indicates less confirmation bias, or, alternatively openness to new conflicting information.

Rating Procedures

Three Industrial Organizational Psychology graduate students served as raters for the dependent variables in this study. These raters were blind to the conditions associated with all responses. Prior to rating, all raters participated in frame of reference training (Bernardin & Buckley, 1981). During this training program, raters were familiarized with the rating scales, operational definitions of each scale, and benchmarks of the scales. Raters practiced applying these rating scales to a set of sample responses. Meetings were held to discuss their ratings and resolve any discrepancies. The raters independently rated participant's responses to the ethical decision making questions, meeting occasionally to help avoid rater drift.

Following the completion of all ratings, interrater agreement and reliability estimates were calculated for all variables rated by judges. To assess the appropriateness of aggregating scores across judges the $r*_{WG}$ index (James, Demaree, & Wolf, 1984) and the mixed effects, two-way ANOVA intraclass correlation coefficient

(ICC[2]; Bliese, 2000) were calculated. The $r*_{WG}$ index and intraclass correlation coefficient are complementary statistics that assess the magnitude of rating similarity among judges (Biemann, Cole, & Voelpel, 2012). The guidelines where any estimate above .70 is considered acceptable were used as discussed by LeBreton and Senter's (2008). Most of the $r*_{WG}$ and ICC[2] estimates were above .70, justifying the aggregation (i.e., averaging) of judges' scores for the dependent variables.

Dependent Variables

The seven questions following each scenario and rating scales developed and validated by Mumford et al. (2006) aim at tapping into the sensemaking processes used in ethical sensemaking to elicit a decision from participants. Mumford et al. provided evidence that these variables are reliable markers of successful ethical sensemaking (see also Mumford et al., 2008).

Causal analysis. Causal analysis consists of three variables; problem recognition, number of causes identified, and cause criticality. Problem recognition ($r*_{WG}$ = .76; ICC[2] = .78) was defined as the extent to which the participant identified the critical aspects of the ethical dilemma. Raters coded problem recognition using a 5-point Likert scale (1 = *very poor problem recognition* and 5 = *very strong problem recognition*). Number of causes ($r*_{WG}$ = .56; ICC[2] = .78) was a count of the number of distinct causes identified. Cause criticality ($r*_{WG}$ = .70; ICC[2] = .59) was defined as the importance or relevance of the identified causes to the ethical dilemma. Raters evaluated the extent to which the identified causes related to the ethical dilemma and the extent to which the identified causes caused the ethical dilemma using a 5-point

Likert scale (1 = *none to very little criticality in causes identified* and 5 = *extensive criticality in causes identified*).

Constraint analysis. Raters coded for breadth of constraints and criticality of constraints. Breadth of constraints ($r*_{WG}$ = .84; ICC[2] = .86) was defined as the extent to which the constraints cover a large number of factors (personal and situational) and elements (people, tasks, groups, etc.), and was rated on a 5-point Likert scale (1 = *very narrow* and 5 = *very broad*). Criticality of constraints ($r*_{WG}$ = .81; ICC[2] = .71) was defined as the importance or relevance of the constraints identified to the ethical dilemma, and was also rated on a 5-point Likert scale (1 = *none to very little criticality in constraints identified* and 5 = *extensive criticality in constraints identified*).

Forecasting. Raters coded for short-term timeframe, long-term timeframe, positivity, negativity, and quality of forecasted outcomes. Short-term timeframe ($r*_{WG}$ = .73; ICC[2] = .38) was defined as the extent to which the response focused on the short-term and was rated on a 5-point Likert scale (1 = *not at all short-term* and 5 = *highly short-term*). Long-term timeframe ($r*_{WG}$ = .76; ICC[2] = .54) was assessed using a 5-point Likert scale (1 = *not at all long-term* and 5 = *highly long-term*) and was defined as the extent to which the response focused on the long-term. Raters assessed positivity($r*_{WG}$ = .86; ICC[2] = .89) by determining the extent to which the outcomes mentioned were positive (1 = *no positivity* and 5 = *very positive*). Negativity ($r*_{WG}$ = .81; ICC[2] = .86) was defined as the extent to which the outcomes mentioned were negative and was rated on a 5-point Likert scale (1 = *no negativity* and 5 = *very negative*). Quality of forecasted outcomes($r*_{WG}$ = .86; ICC[2] = .83) was defined as the extent to which the forecasted outcomes displayed detail, relevance to the scenario,

consider critical aspects of the scenario, and are realistic. Raters assessed quality on a 5-point Likert scale (1 = *poor quality* and 5 = *very good quality*).

Decision ethicality. Decision ethicality was determined by averaging the ratings of the three dimensions of ethicality of regard for welfare of others, attending to personal responsibilities, and adherence to and awareness of social obligations. Regard for welfare of others (r^*_{WG} = .69; ICC[2] = .78) was defined as the extent to which the decision reflected attention and care for the welfare of others (Forsyth, 1980; Kish-Gephart, Harrison, & Treviño, 2010). Responses low in the consideration of the welfare of others could include intentionally harming others or manipulating others for selfish gain. Responses high in the consideration of the welfare of others could include intentionally working to benefit others or behaving for the benefit of others at one's personal expense. Regard for welfare of others was assessed using a 5-point Likert scale (1 = *very low regard of welfare of others* and 5 = *very high regard for welfare of others*). Attending to personal responsibilities (r^*_{WG} = .85; ICC[2] = .80) was defined as the extent to which the decision reflected attention to one's personal responsibilities (Trevino, 1986). Negligence, failing to take action, avoiding responsibility, and doing the minimum are all markers of low personal responsibility. Markers of high personal responsibility included actively avoiding personal bias, seeking additional information to clarify the situation, and being accountable to one's actions, behaviors, and outcomes. Attending to personal responsibilities was assessed using a 5-point Likert scale (1 = *very low attending to personal responsibilities* and 5 = *very high attending to personal responsibilities*). Adherence to and awareness of social obligations (r^*_{WG} = .57; ICC[2] = .67) was defined as the extent to which the decision reflected the

adherence to social obligations, whether the group, organization, field, or society at large (Trevino, 1986). Markers of high adherence to social obligations included consideration and/or knowledge of guidelines, awareness and respect of cultural norms and values, attending one's duties of their given social role, and the awareness and consideration of the formal and informal norms the typically guide behavior. Low adherence to and awareness of social obligations was the lack of high adherence to and awareness of social obligations or outright disregard for social obligations. Adherence to and awareness of social obligations was assessed using a 5-point Likert scale (1 = *very low adherence to and awareness of social obligations* and 5 = *very high adherence to and awareness of social obligations*).

Control Variables

A number of controls were used in this study in accordance with methods described by Bernerth and Aguinis (2016). Controls were included in the analyses if (a) there was a theoretical rationale for including the control; (b) the relationship between the control and variables in this study are empirically established; and (c) can the control be measured reliably. Theoretical and empirical evidence are briefly described below, as well as, description of how the control was measured reliably.

There are several reasons why it is important to include controls in the final analyses. First, random assignment does help to deal with the influences of extraneous influences by equalizing their influence across conditions by making means more similar. However, in order to look at the unique influence of what we are manipulating (e.g., emotion evocation of anger and guilt) beyond the influence of controls (e.g., narcissism) known to influence the DV (e.g., decision ethicality) these controls should

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be included. This results in more precise results by reducing the standard error and increasing power to detect effects. Second, random assignment is sometimes less than perfect with relatively small sample sizes and will sometimes results in imbalances in controls across conditions. Due to these reasons, along with the theoretical and empirical evidence provided below, controls were included in the initial analyses. If the control was not significant, it was taken out of the analysis. Final controls for each analysis are described in the results section.

Intelligence. Ethical decision making is a cognitively demanding activity thus intelligence was assessed as a control measure (Martin, Bagdasarov, & Connelly, 2015). The Wonderlic Personnel Test (WPT) was used to examine participant problem-solving ability (Wonderlic, 1983). Participants were given twelve minutes to answer as many questions as they could of the fifty questions that increased in difficulty. Dodrill (1981) provides evidence for construct validity of the WPT. The Cronbach's alpha reliability was .72.

Trait emotions. Some individuals have a tendency to experience guilt or anger more than others (Tangney, 1995). Therefore, it is important to assess the likelihood of experiencing guilt or anger. Guilt-proneness was assessed using the 16-item Test of Self-Conscious Affect – Version 3 (TOSCA-3; Tangney, Dearing, Wagner, & Gramzow, 2000), where participants rated reactions to scenarios on a 5-point Likert scale (1 = *not likely* and 5 = *very likely*). Anger-proneness was assessed using a similarly structured measure (Anger Response Inventory; Tangney, Wagner, Marschall, & Gramzow, 1999). Tangney (1995) provided evidence for construct validity of the

TOSCA-3 and Tangney et al. (1996) for the Anger Response Inventory. The Cronbach's alpha reliability for guilt-and anger-proneness was .72 and .81, respectively.

Need for structure. Need for structure is an individual difference for the desire for simple structure in order to understand the world. Individuals with a high need for structure will organize information in less complex ways and thus may be more likely to engaged in confirmation bias (Neuberg & Newsom, 1993; Jonas et al., 2001). Need for structure was assessed using Thompson, Naccarato, & Parker's (1989) Personal Need for Structure Scale. Participants indicated their agreement on a 6-point Likert scale (1 = *strongly disagree* and 6 = st*rongly agree*) to eleven statements. Items include "I don't like situations that are uncertain" and "I find that a consistent routine enables me to enjoy life more." Neuberg and Newsom (1993) provided evidence for construct validity of the Personal Need for Structure Scale. The Cronbach's alpha reliability for need for structure was .81.

Narcissism. Narcissism is an individual difference involving a fragile but grandiose sense of self and entitlement and is negatively related to ethical decision making (Mumford et al., 2008). Narcissism was assessed using the Narcissistic Personality Inventory (Raskin & Terry, 1988). Participants were asked to choose the statement closest to their feelings for forty paired statements. Items include "I have a natural talent for influencing people" versus " I am not good at influencing people" and "I would do almost anything on a dare" versus "I tend to be a fairly cautious person." Raskin and Terry (1988) provided evidence for construct validity of the NPI. The Cronbach's alpha reliability for the NPI was .83.

<center>**Results**</center>

Correlations among study variables and descriptive statistics by condition are presented in Tables 1-5. All sensemaking strategies correlated with decision ethicality as expected based on prior research. Use of confirming statements and use of conflicting statements both correlated with problem recognition, causal analysis, constraint analysis, and quality of forecast variables. Use of conflicting statements also correlated with all of the forecasting variables. Neither use of confirming statements nor use of conflicting statements was significantly correlated with overall decision ethicality.

ANCOVAs were conducted to test H1-H4 and results are reported in Tables 6 and 7. Post-hoc mean comparison tests were conducted using the Bonferroni post-hoc criterion. Hierarchical least squares regressions were used to test H5 and are reported in Tables 8, 9, and 10. H6-H10 were tested using PROCESS for SPSS from Hayes (2013) employing 10,000 bootstrapped resamples. Unique models were conducted for each sensemaking process and decision ethicality. The control variables of intelligence, guilt-proneness, anger-proneness, need for structure, and narcissism were included in all analyses. Because the emotion evocation condition is a multicategorical independent variable, first the neutral then the guilt condition were set as the reference group. Mediational effects are significant when the indirect effect's 95 percent confidence interval (CI.95) does not include zero (see Table 11).

Manipulation Checks

Emotion evocation. All manipulation checks (i.e. self-reported levels of guilt and anger, open-ended ratings, and self- versus other- control and responsibility measure) for emotion evocation were successful. An analysis of variance showed that

those in the anger condition ($M = 3.01$, $SD = 0.13$) experienced higher levels of self-reported anger than those in the guilt condition ($M = 2.16$, $SD = 0.13$), $p \leq .001$ and those in the neutral condition ($M = 2.20$, $SD = 0.13$), $p \leq .001$, $F(2, 221) = 14.07$, p $\leq$ .001. Additionally those in the guilt condition ($M = 3.69$, $SD = 0.17$) experienced higher levels of self-reported guilt than those in the anger condition ($M = 2.22$, $SD = 0.17$), $p \leq .001$ and those in the neutral condition ($M = 2.96$, $SD = 0.17$), $p \leq .001$, $F(2, 221) = 17.77$, p $\leq$ .001.

For the open-ended ratings, participants in the anger condition ($M = 2.25$, $SD = 0.05$) reflected higher levels of anger in their responses than those in the guilt condition ($M = 1.40$, $SD = 0.05$), $p \leq .001$ and those in the neutral condition ($M = 1.42$, $SD = 0.05$), $p \leq .001$, $F(2, 221) = 95.21$, p $\leq$ .001. An analysis of variances demonstrated that those in the guilt condition ($M = 3.32$, $SD = 0.10$) reflected higher levels of guilt in their responses than those in the anger condition ($M = 1.84$, $SD = 0.10$), $p \leq .001$ and those in the neutral condition ($M = 2.77$, $SD = 0.10$), $p \leq .001$, $F(2, 221) = 52.31$, p $\leq$ .001.

The underlying appraisals of the emotion manipulation check was also successful. Participants in the anger condition ($M = 6.43$, $SD = 0.20$) perceived others (namely, the coworker) as more responsible than participants in the guilt condition ($M = 3.03$, $SD = 0.20$), $p \leq .001$ and those in the neutral condition ($M = 4.04$, $SD = 0.20$), $p \leq$ .001, $F(2, 218) = 75.48$, p $\leq$ .001. Individuals in the guilt condition ($M = 6.80$, $SD = 0.2$) perceived themselves as being more responsible for the situation than participants in the anger condition ($M = 3.63$, $SD = 0.23$), $p \leq .001$, $F(2, 218) = 53.30$, p $\leq$ .001.

Ethics frame. The rated manipulation check was significant, where participants in the ethical frame condition ($M = 3.44$, $SD = 0.09$) identified the issue as an ethical

dilemma more than those in the neutral condition ($M = 3.02$, $SD = 0.09$), F(1, 222) = 10.07, p ≤ .01.

The self-report manipulation check asked participants the extent to which they believed the issue was an (a) ethical and (b) moral problem. For the extent to which participants believed the issue was an ethical problem, the mean in the ethical framing condition ($M = 4.10$, $SD = 0.11$), while higher, was not significantly different than those in the neutral condition ($M = 3.86$, $SD = 0.11$). Participants in the ethical frame condition ($M = 4.13$, $SD = 0.11$) did, however, identify the issue as a moral issue at a higher rate than those in the neutral condition ($M = 3.64$, $SD = 0.12$), F(2, 217) = 9.00, p ≤ .01.

Ethical Framing, Sensemaking Process, and Decision Ethicality

Hypothesis 1, proposed that framing the problem in ethical terms would (a) increase the use of sensemaking processes and (b) result in more ethical decisions. H1a was not supported and there was partial support for H1b. While framing did not lead to higher decision ethicality, when ethicality was examined at the subcomponent level (regard for welfare of others, attending to personal responsibilities, and adherence to and awareness of social obligations) a main effect of ethics was present for regard for welfare of others. Specifically, participants in the ethical framing condition ($M = 3.39$, $SD = 0.08$), had a higher regard of welfare for others than those in the neutral condition ($M = 3.09$, $SD = 0.08$), F(1, 217) = 6.50, $p ≤ .01$, $\eta_p^2 = .03$.

Emotions and Sensemaking Processes

H2a, H3, and H4a proposed differences between anger, guilt, and neutral emotion evoked conditions with regard to use of sensemaking processes. Main effects

were found for number of causes (controlling for intelligence), constraint criticality

(controlling for intelligence and guilt-proneness), and short-term timeframe (no controls

were significant). Participants in the neutral emotion evocation condition ($M = 4.65$, SD

$= 0.17$) identified the greatest number of causes compared to those in the anger

condition ($M = 4.01$, $SD = 0.17$), $p \leq .05$ and guilt condition ($M = 3.98$, $SD = 0.17$), $p \leq$

$.01$, $F(2, 217) = 5.23$, $p \leq .01$, $\eta_p^2 = .05$. Those in the neutral condition ($M = 3.83$, $SD =$

0.07) also identified constraints with more criticality than those in the anger condition

($M = 3.52$, $SD = 0.07$), $p \leq .01$, $F(2, 216) = 4.86$, $p \leq .01$, $\eta_p^2 = .04$. Those in the neutral

condition ($M = 2.71$, $SD = 0.06$) did not consider as many short-term forecasts than

those in the anger condition ($M = 2.96$, $SD = 0.06$), $p \leq .01$ and guilt condition ($M =$

3.10, $SD = 0.06$), $p \leq .01$, $F(2, 218) = 11.99$, $p \leq .01$, $\eta_p^2 = .10$. Overall, these results

provide partial support for H2a because the anger evocation condition showed lower

usage of several sensemaking processes than the neutral emotion condition. The guilt

evocation condition, compared to the neutral condition, also displayed lower usage of

two of the ten sensemaking processes, providing partial support for H3. H4a was not

supported because no significant differences were found between the anger and guilt

conditions for use of sensemaking processes.

Emotion and Decision Ethicality

H2b proposed that state anger would result in less ethical decisions than the

neutral condition. H4b proposed that the guilt evocation condition would result in more

ethical decisions than the anger condition. An ANCOVA controlling for guilt-

proneness, found support for H2b. Participants in the neutral emotion condition ($M =$

3.29, $SD = 0.06$) had higher ethicality than those in the anger condition ($M = 2.88$, $SD =$

0.07), $p \leq .01$, F(2, 217) = 22.15, $p \leq .01$, $\eta_p^2 = .17$. H4b was also supported.

Participants in the guilt condition ($M = 3.48$, $SD = 0.07$) were significantly higher in

decision ethicality than those in the anger condition, $p \leq .01$. Participants who felt state

guilt had the highest decision ethicality, but were not significantly different from the

neutral condition.

Confirmation Bias, Sensemaking Processes, and Decision Ethicality

H5 was tested in a series of hierarchical multiple regression analyses in which

the control variables of intelligence, guilt-proneness, anger-proneness, need for

structure, and narcissism were entered in Step 1. The confirmation bias variables were

entered in Step 2. The results are presented in Tables 8, 9, and 10. The results indicated

that after controlling for intelligence, guilt-proneness, anger-proneness, need for

structure, and narcissism use of confirming statements and use of conflicting statements

contributed to significant incremental variance in problem recognition ($\Delta R^2 = .18$, $p <$

.01), identification of critical causes ($\Delta R^2 = .19$, $p < .01$), breadth of constraints ($\Delta R^2 =$

.05, $p < .01$), and identification of critical constraints ($\Delta R^2 = .07$, $p < .01$). Use of

confirming statements (and not conflicting statements) contributed to significant

incremental variance in identification of causes ($\Delta R^2 = .11$, $p < .01$) and quality of

forecasts ($\Delta R^2 = .04$, $p < .01$). Use of conflicting statements but not confirming

statements contributed to significant incremental variance for short-term timeframe of

forecasts ($\Delta R^2 = .04$, $p < .05$). Results indicate partial support for H5a, that individuals

who use conflicting information will have increased use of sensemaking processes and

no support for H5b that individuals who use conflicting information will have greater

decision ethicality. Interestingly, use of either confirming or conflicting new

information did not facilitate overall decision ethicality, suggesting a primacy effect, or that initial information about a situation has more influence on decisions.

Mediation effects of Confirmation Bias

H6 and H7 predicted confirmation bias would mediate the relationship between ethical framing and sensemaking processes and decision ethicality. H6 and H7 were not supported.

H8, H9, and H10 predicted confirmation bias would mediate the relationship between state emotion and (a) sensemaking processes and (b) decision ethicality. Mediation was found for several of the sensemaking processes and results are presented in Table 11.

Compared to neutral, both anger and guilt decreased the use of several sensemaking processes through the reduced use of conflicting information specifically problem recognition (CI.$_{95A}$ = -.155, -.009; CI.$_{95G}$ = -.224, -.066), criticality of causes (CI.$_{95A}$ = -.114, -.005; CI.$_{95G}$ = -.160, -.039), breadth of constraints (CI.$_{95A}$ = -.126, -.002; CI.$_{95G}$ = -.175, -.015), and criticality of constraints (CI.$_{95A}$ = -.102, -.002; CI.$_{95G}$ = -.142, -.019). Both anger and guilt, compared to neutral, increased the use of two sensemaking processes through the decreased use of conflicting information specifically short-term timeframe of forecast (CI.$_{95A}$ = .000, .068; CI.$_{95G}$ = .004, .102) and negativity of forecast (CI.$_{95A}$ = .000, .116; CI.$_{95G}$ = .007, .172). These results provide support for H8a as those in the neutral condition used conflicting information and engaged in six of the ten sensemaking process.

Both anger and guilt when compared to neutral decreased the use of several sensemaking processes through the reduced use of confirming information specifically

problem recognition (CI.$_{95A}$ = -.164, -.001; CI.$_{95G}$ = -.189, -.016), number of causes

(CI.$_{95A}$ = -.379, -.046; CI.$_{95G}$ = -.362, -.028), criticality of causes (CI.$_{95A}$ = -.184, -.024;

CI.$_{95G}$ = -.175, -.014), breadth of constraints (CI.$_{95A}$ = -.131, -.006; CI.$_{95G}$ = -.130, -

.003), criticality of constraints (CI.$_{95A}$ = -.108, -.011; CI.$_{95G}$ = -.110, -.006), and quality

of forecast (CI.$_{95A}$ = -.130, -.011; CI.$_{95G}$ = -.128, -.006). H8a is partially supported

because participants in the neutral condition used confirming information and engaged

in six of the ten sensemaking processes.

H8b was supported. Both anger and guilt, compared to neutral, had lower

decision ethicality through the reduced use of conflicting information (CI.$_{95A}$ = -.080, -

.000; CI.$_{95G}$ = -.110, -.006). Anger, compared to guilt, had higher decision ethicality

through the reduced use conflicting information (CI.$_{95}$ = .001, .062).

Anger, compared to guilt, increased the use of several sensemaking processes

through the reduced use conflicting information specifically problem recognition (CI.$_{95}$

= .004, .131), criticality of causes (CI.$_{95}$ = .003, .089), breadth of constraints (CI.$_{95}$ =

.002, .105), and criticality of constraints (CI.$_{95}$ = .002, .082). Results for H9a indicated

that those anger condition used conflicting information less, which increased their use

of four of the ten sensemaking processes instead of hindering the use of sensemaking

processes as we predicted.

This pattern of results suggest that, when a negative emotion is evoked, use of

additional conflicting or confirming information negatively impacted the sensemaking

processes of problem recognition, criticality of causes, breadth of constraints, and

criticality of causes. The negative emotion of anger or guilt combined with use of

confirming information hurt the processes of number of causes and quality of forecast.

The use of conflicting information along with negative emotions lead to short term forecasts and negativity of forecasts.

Discussion

This study extends previous literature by examining the effects emotions, decision framing, and confirmation bias on ethical sensemaking and ethical decisions. It contributes to the understanding of how the framing of information and integral emotion induced by the information impact cognition and behavior. Findings also revealed that additional new information which conflicts or confirms with previous information can impact ethical sensemaking. Information that evokes the negative emotional response of anger and guilt had negative impacts on sensemaking and anger negatively impacted decision ethicality. Additionally, framing information in ethical terms had no significant impact on sensemaking or decision ethicality. We also found that use of confirming and use of conflicting information mediated the relationships between emotions and sensemaking. Next, we will review the findings of this study and discuss general implications. We will then discuss theoretical and practical implications, and finally we will expand on limitations and areas for future research.

In line with previous research, the negative emotions of anger and guilt had negative impacts on ethical sensemaking (Kligyte et al., 2013; Krishnakuma & Rymph, 2012; Thiel et al., 2011; Johnson 2015). One of the goals of this study was to replicate findings from Johnson's study. This goal was partially fulfilled with three of four findings from Johnson's study being confirmed.

Johnson (2015) found that participants in the guilt condition identified fewer causes than those in the anger condition and neither anger nor guilt were significantly

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different from the neutral condition. In this study, those in the neutral condition

identified a greater number of causes than those in the guilt and anger conditions but

were not significantly different from each other. Identification of causes is clearly

affected by experiencing anger or guilt. The certainty appraisals associated with these

emotions could lead to more heuristic and less systematic processing of information

(Tiedens & Linton, 2001; Lerner & Tiedens, 2006)

In both the Johnson (2015) study and this study, more critical constraints were

identified in the neutral emotion conditions than the anger conditions. The action

tendency associated with anger is to attack the cause of the problem (Averill, 2012). As

such, those who feel angry may only see one possible course of action and find it

unnecessary to think about constraints or factors that can limit potential course of action

beyond the action they plan to take – attack. This finding is also in line with certainty

appraisals experienced with anger and guilt (Smith & Ellsworth, 1985). When an

individual is certain about a situation, they will not feel a need to gather more

information such as other potential causes and constraints.

Another similarity between the Johnson (2015) study and this study is

differences in timeframe considered. In both studies, those in the anger and guilt

conditions engaged in shorter term forecasts than those in the neutral conditions. These

results indicate that negative emotions led to short-term thinking. Forecasting will

occur but only for the elements of the situation already identified. It appears that

individuals focused on consequences and benefits of alternative courses of action

needed to get them out of the negative emotional state. In decision making research,

those who are guilty focus on the worst case scenario and forecast on how to overcome

it and those who are angry focus on the most straightforward outcome without exploring alternatives (Gangemi & Mancini, 2007). In both instances, forecasting is short-term and for one possible scenario.

Anger and fear are similar in levels of certainty appraisal but differ in agency (Smith & Ellsworth, 1985). The differences in agency explain why in both studies, anger had significantly lower decision ethicality than those in either the guilt or neutral conditions. The guilt and neutral conditions were not significantly different from each other. When an individual is angry, they focus on the causal agents of the dilemma and ruminate (Griffith, Connelly, & Thiel, 2014; Gross & Thompson, 2007). Whereas, when an individual is guilty, they accept the cause and focus on ameliorating it (Tangney, 1995). By identifying the cause and trying to solve the issue and move on from the problem, individuals who are experiencing guilt are able to make a more ethical decision. Those who are experiencing anger are focusing on retribution and not solving the issue at hand (Lazarus, 1991). Guilt did not differ from neutral for the ethicality of decisions and this may have occurred because guilt is a moral emotion (Lazarus, 1991). Many studies have found guilt-proneness positively influences ethical decisions (e.g. Cohen 2010; Agnihotri et al., 2012).

The rated manipulation check for framing was significant but the self-report manipulation check was not significant. This finding suggests that participants were primed in how they wrote about the issue with those in the ethical framing condition more likely to discuss the issue explicitly as an ethical issue. When participants were asked to report if the issue was an ethical issue (after the open-ended questions), both those in the neutral and ethical framing condition identified it as an ethical dilemma.

Framing the problem as an ethical dilemma did not impact sensemaking processes and only impacted one of the three components of decision ethicality. The lack of differences between the ethical framing and neutral framing conditions suggests that individuals are good at identifying an ethical issue as a problem and engaging in sensemaking process in order to solve the problem.

The one finding for ethical framing was for the regard for welfare of others component of decision ethicality. This finding suggests that ethical framing is important to cue individuals to think about others and how they will be impacted. Past research has shown that individuals will make better ethical decisions when individuals are the target of the consequences compared to when the organization is the target (Ness & Connelly, in press). Perhaps when an issue is high in ethical salience, individuals are more likely to think of how other people will be affected by the dilemma (Jones, 1991).

Incorporating additional information into one's already existing understanding of an ethical situation can be difficult. Participants who incorporated both confirming and conflicting information, and were in the neutral emotion condition, had better problem recognition, cause criticality, breadth of constraints and criticality of constraints. In other words, participants who used more information to create their understanding of the situation were able to identify important aspects of the situation. When participants were able to support initial information about the situation, they were able to identify the causes more clearly and were able to develop better forecasts, most likely because information that can be corroborated is considered to be more accurate and relevant (Postmes, Spears, & Cihangir, 2001). This is consistent with past research that found that participants made poorer ethical decisions and used sensemaking

processes less when a competitor offered them uncorroborated information as compared to corroborated information (Caughron et al., 2013). Conflicting information predicted short-term forecasts. When participants used conflicting information, they narrowed their focus to immediate outcomes.

The mediational effects of confirming and conflicting information showed that participants in both the anger and guilt conditions using confirming and conflicting information had worse problem recognition, cause criticality, breadth of constraints and constraint criticality. The emotion combined with the use of additional information hurt the sensemaking processes. This aligns with previous research where cases with a clear description of the social context and goals of the characters lead to a greater use of sensemaking process and greater decision ethicality (Bagdasarov et al., 2013).

When anger was compared to guilt conditions, participants used conflicting information less and engaged in the sensemaking processes more. Angry participants avoided information that would dispute their initial viewpoint of the problem but this allowed them to continue with the sensemaking processes. Additionally, this same mediation processes led to higher decision ethicality. Perhaps engaging in confirmation bias by avoiding conflicting information allowed participants who felt angry to solve the problem. In this case, confirmation bias was useful.

Theoretical Implications

There are several theoretical implications of this study in the areas of emotions, decision framing, and confirmation bias. This study helps to inform a growing body of research on the impact of discrete emotions on ethical sensemaking (Johnson 2015; Bagdasarov et al., 2013). We successfully replicated three of four findings regarding

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emotions and sensemaking from Johnson's (2015) study and thus are confident that more critical constraints are identified in neutral as compared to anger conditions, long-term forecast are made in neutral as compared to both anger and guilt conditions, and anger results in lower decision ethicality as compared to both guilt and neutral conditions. These findings guide the understanding of discrete emotions and paves the way for additional discrete emotions to be examined for how they differentially impact sensemaking compared to neutral conditions and compared to each other.

This study can help guide the development of our understanding about the impact of framing on ethical sensemaking. Although we found very little with our framing condition, only one of our three manipulation checks failed and the neutral conditions still saw the problem as having somewhat of an ethical component. The failure of one of the manipulation checks and the limited results for ethical framing may be due to the comparison of an ethical frame to a neutral frame. Past research on framing often compared two different types of framing (e.g. win-oriented vs. cooperation, Schweitzert et al., 2005; loss vs. gain, Kern & Chugh, 2009). Ethical frames should not be completely written off as not effective because future researchers can try to induce a stronger ethical frame and should compare ethical frames to other frames common in workplace settings.

Sensemaking is very complex and how individuals incorporate new information into their initial understanding of a situation is important to understand. This study shows that individuals faced with an ethical situation will try to use both confirming and conflicting information when they are in a neutral emotional state and this increases the use of sensemaking processes. The negative emotions of anger and guilt reduce the use

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of both types of information. Our research adds to the understanding of the impact of discrete emotions on the processing of new information related to an ethical dilemma.

Practical Implications

There are several practical implications of this study. Anger and guilt negatively impact ethical sensemaking process and as such, it is important to discuss ways to deal with emotions in any ethics training programs. Several programs already discuss the importance of dealing with one's emotions and this practice should continue (Watts et al., 2016). Additionally, this study shows that using more information will improve sensemaking. Those engaged in ethical dilemmas should attempt to identify and incorporate all types of information and try to avoid cognitive shortcuts such as confirmation bias. Ethics training should include a discussion of cognitive biases and how they may help or hurt ethical decision making. Ethics training programs could help individuals learn how to identify when they are engaging in biases and provide strategies they can utilize to make sure they will make better ethical decisions.

Social-cognitive theory states that individuals may alter their values and beliefs to align with those of a credible role model (Bandura, 1986; 1971). Thus, how a leader states or frames an issue may influence the ethical decision making of their subordinates. This study found that participants in the ethical framing condition were more likely to discuss the problem using ethical terms. Leaders can influence how individuals talk about issues and if subordinates all view the problem as ethical, it can help them to think of others and be on the same page. This can also alleviate ethical blindness (Palazzo et al., 2012).

Limitations

There are several limitations to this study. First, the ethical problem solving experience level of the current sample could limit the generalizability of the findings. Many undergraduates have limited exposure to ethical dilemmas and thus have less experience in making ethical decisions. However, participants, on average, had almost two and half years of work experience. Dunegan, Duchon, and Barton (1992) found that college students and business professionals have similar patterns of responses to complex, ambiguous organizational scenarios. Additionally, participants were asked to engage in a topic (i.e., marketing) for which they do have knowledge and no issues with in past research (e.g., Johnson & Connelly, 2014). Thus, the findings could potentially be replicated in other studies, samples, and scenarios. This is an area for future research.

Second, this study used a simulation exercise. Thus, ethical sensemaking was evaluated through coded responses to a hypothetical ethical dilemma which evaluated ethical intentions and not actual ethical behavior. Behavioral intentions are known to precede behavior (Ajzen, 1985). Webb, Miles, and Sheeran (2012) provide meta-analytic evidence that the relationship between intentions and behavior is moderately positive across a wide range of behavioral intentions.

Third, ethical dilemmas are inherently emotional (Vitell et al., 2013; Haidt, 2001) which makes it difficult to evaluate all of the discrete emotions influencing ethical decision making. However, we assessed guilt and anger for all conditions and our manipulation check indicated that participants experienced the intended emotion for each condition. Thus, the neutral emotion condition was a useful comparison group

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since participants experienced significantly lower levels of anger and guilt. However, future research could explore additional emotional states and ethical decision making.

Future Research and Conclusions

This study looked at the effects of both conflicting and confirming information on ethical sensemaking. In order to tease out the effects of conflicting and confirming information, future research could look at the differential effects of confirming information and conflicting information on ethical sensemaking by presenting participants with just confirming information, just conflicting information, and both. In the majority of confirmation bias literature, it is examined by how one choose information over the other but what happens when individuals are incorporating both pieces of information?

Additional studies should examine the nuances with decision ethicality. Ethical framing only impacted one of the three subcomponents of ethicality. Perhaps other variables were written off as having no impact on decision ethicality may influence a subcomponent of decision ethicality. Certain ethical situations that have an emphasis on one the subcomponents over the others could be influenced by these variables.

The investigation of the effects of discrete emotions on ethical decision making is just beginning. Currently, research has examined the roles moral emotions (Hadit, 2003) on ethical decision making but additional discrete emotions should be examined such as sadness, anxiety, and positive emotions like joy. Research on emotions and ethical decision making should look at the impact of emotions at all stages of the ethical sensemaking process. Additionally, research should continue looking at the role of both state and trait emotions.

The role of ethics within the workplace continues to be an important area of research. This study contributes to the existing body of literature by examining the effects of the anger and guilt, ethics framing, and confirming and conflicting information on the ethical sensemaking process. Based on this research and others, affective processes in ethical decision making and potential biases should continue to be explored.

Table 1

Means, Standard Deviations and Correlations among Study Variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Controls																						
1 Intelligence	21.16	4.76																				
2 Guilt-Proneness	4.10	0.43	.03																			
3 Anger-Proneness	26.20	7.98	-.10	-.14*																		
4 Need for Structure	3.97	0.83	-.07	.17**	.21**																	
5 Narcissism	15.97	6.47	-.07	-.24**	-.24**	-.09																
Dependent Variables																						
6 Problem Recognition	3.44	0.78	.25**	.17**	-.16*	-.11	-.03															
7 Number of Causes	4.22	1.49	.20**	.07	-.02	-.08	.00	.66**														
8 Cause Criticality	3.66	0.63	.26**	.12	-.17*	-.17**	-.03	.81**	.72**													
9 Breadth	3.28	0.87	.27**	.17**	-.12	-.09	-.10	.45**	.40**	.48**												
10 Constraint	3.68	0.66	.29**	.20**	-.13	-.06	-.07	.49**	.37**	.53**	.79**											
11 Criticality	2.92	0.51	-.09	-.07	-.08	-.07	.09	-.09	-.11	-.11	-.05	-.10										
12 Timeframe Short	3.32	0.57	.12	.06	.13*	.05	-.13*	.19**	.18**	.21**	.19**	.25**	-.66**									
13 Timeframe Long	2.11	0.88	.11	.00	.04	-.14*	-.03	.13	.12	.05	.07	.00	-.09	-.03								
14 Positivity	3.65	0.84	-.06	.08	-.03	.11	.02	.08	.08	.13	.10	.17*	.08	.20**	-.77**							
15 Negativity	3.09	0.70	.22**	.17*	-.10	-.09	-.14*	.58**	.44**	.55**	.58**	.58**	-.19**	.51**	.01	.31**						
16 Quality of Forecast	3.24	0.95	.07	.26**	-.06	.04	-.03	.20**	.17*	.11	.19**	.24**	.00	.03	-.02	.11	.19**					
17 Regard for Welfare of Others	3.33	0.91	.00	.21**	.07	.07	.10	.08	.05	.02	.08	.17*	.10	-.07	.01	.05	.08	.57**				
18 Attendance to Personal Responsibilities	3.33	0.76	.06	.31**	-.13*	.05	-.04	.23**	.17*	.16*	.21**	.31**	-.02	.03	.01	.07	.21**	.71**	.69**			
19 Adherence to/Awareness of Social Obligations / Overall Ethicality	3.22	0.63	.12	.29**	-.03	.02	-.02	.35**	.27**	.27**	.35**	.42**	-.02	.17*	.00	.19**	.51**	.85**	.80**	.77**		
Mediator Variables																						
20 Use of Confirming Statements	6.41	1.38	.16*	-.01	-.12	-.06	.06	.39**	.34**	.44**	.23**	.27**	-.04	.05	.09	.02	.22**	-.03	.00	.01	.06	
21 Use of Conflicting Statements	7.53	1.54	.11	.10	-.15*	-.10	-.08	.37**	.20**	.35**	.23**	.26**	-.20**	.14*	.17*	-.15*	.16*	.10	.02	.20**	.12	.24**

*Note. N = 224. *p ≤ .05, **p ≤ .01.*

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Table 2

Means and Standard Deviations for Sensemaking Processes: Causes and Constraints

Emotion Evoked	Ethics Frame	Problem Recognition		Number of Causes		Criticality of Causes		Breadth of Constraints		Criticality of Constraints	
		M	SD	M	SD	M	SD	M	SD	M	SD
Neutral	Ethics	3.50	0.81	4.69	1.43	3.77	0.68	3.35	0.81	3.83	0.64
	Neutral	3.58	0.78	4.60	1.50	3.76	0.66	3.41	0.78	3.80	0.57
Anger	Ethics	3.48	0.65	3.99	1.19	3.63	0.54	3.11	0.98	3.43	0.80
	Neutral	3.38	0.71	4.02	1.50	3.63	0.58	3.32	0.97	3.63	0.78
Guilt	Ethics	3.50	0.68	4.05	1.43	3.61	0.64	3.11	0.85	3.65	0.53
	Neutral	3.23	0.98	3.92	1.76	3.53	0.72	3.41	0.84	3.70	0.52

Note. N = 224. Not adjusted for covariates.

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Table 3

Means and Standard Deviations for Sensemaking Processes: Forecasting

Emotion Evoked	Ethics Frame	Short Timeframe of Forecast		Long Timeframe of Forecast		Positivity of Forecast		Negativity of Forecast		Forecast Quality	
		M	SD	M	SD	M	SD	M	SD	M	SD
Neutral	Ethics	2.62	0.53	3.45	0.61	2.26	0.96	3.45	0.91	3.00	0.73
	Neutral	2.81	0.52	3.44	0.61	2.22	0.88	3.59	0.80	3.21	0.74
Anger	Ethics	2.88	0.51	3.25	0.48	2.08	0.95	3.64	0.89	2.98	0.66
	Neutral	3.03	0.46	3.27	0.55	0.96	0.75	3.77	0.80	3.08	0.74
Guilt	Ethics	3.14	0.46	3.21	0.66	2.12	0.82	3.74	0.72	3.11	0.62
	Neutral	3.05	0.44	3.28	0.45	1.98	0.90	3.75	0.92	3.14	0.71

Note. N = 224. Not adjusted for covariates.

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Table 4

Means and Standard Deviations for Decision Ethicality

Emotion Evoked	Ethics Frame	Regard for the Welfare of Others		Attendance to Personal Responsibilities		Adherence to and Awareness of Social Obligations		Decision Ethicality	
		M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Neutral	Ethics	3.55	0.85	3.44	0.71	3.62	0.59	3.33	0.51
	Neutral	3.07	0.99	3.37	0.87	3.33	0.83	3.22	0.63
Anger	Ethics	3.00	0.89	2.73	0.82	3.00	0.77	2.90	0.59
	Neutral	2.66	0.92	2.96	0.71	3.11	0.80	2.90	0.54
Guilt	Ethics	3.62	0.79	3.87	0.91	3.51	0.70	3.53	0.56
	Neutral	3.51	0.90	3.63	0.97	3.41	0.73	3.43	0.68

Note. $N = 224$. Not adjusted for covariates.

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Table 5

Means and Standard Deviations for Confirmation Bias Variables

Emotion Evoked	Ethics Frame	Use of Confirming Statements		Use of Conflicting Statements	
		M	SD	M	SD
Neutral	Ethics	6.79	1.52	8.15	1.96
	Neutral	6.74	1.51	7.87	1.45
Anger	Ethics	6.04	1.01	7.46	1.31
	Neutral	6.40	1.18	7.61	1.62
Guilt	Ethics	6.41	1.34	7.19	1.32
	Neutral	6.08	1.51	6.88	1.18

Note. $N = 224$. Not adjusted for covariates.

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Table 6

Analysis of covariance results for Sensemaking Processes

Variable	Number of Causes		Criticality of Constraints		Short Timeframe of Forecast		Long Timeframe of Forecast	
	F	η_p^2	F	η_p^2	F	η_p^2	F	η_p^2
Control Variables								
Intelligence	10.48	0.05**	21.02	0.09**				
Trait Guilt			10.92	0.05**				
Trait Anger							6.76	0.03*
NFS								
NPI							6.13	0.03*
Main Effects								
Emotion Evoked	5.23	0.05**	4.86	0.04**	11.99	0.10**	2.88	0.03*
Ethic Frame	0.49	0.00	0.24	0.00	1.63	0.01	0.02	0.00
Interaction								
Emotion Evoked by Ethic Frame	0.28	0.00	0.83	0.01	1.81	0.02	0.19	0.00

Note: F indicates F-ratio, η_p^2 indicates partial eta-squared. *$p \leq$ .05, **$p \leq$ .01.

Table 7

Analysis of covariance results for Decision Ethicality

Variable	Regard for Welfare of Others		Attending to Personal Responsibility		Adherence to and Awareness of Social Obligations		Decision Ethicality	
	F	η_p^2	F	η_p^2	F	η_p^2	F	η_p^2
Control Variables								
Intelligence								
Trait Guilt	19.27	0.08**	17.69	0.08**	27.22	.11**	26.61	0.11**
Trait Anger								
NFS			5.39	0.02*				
NPI								
Main Effects								
Emotion Evoked	15.31	0.12**	23.83	0.18**	10.38	.09**	22.15	0.17**
Ethic Frame	6.50	0.03**	0.05	0.00	0.76	.00	0.67	0.00
Interaction								
Emotion Evoked by Ethic Frame	0.81	0.01	1.74	0.02	1.03	0.01	0.08	0.00

Note: F indicates F-ratio, η_p^2 indicates partial eta-squared. *$p \leq .05$, **$p \leq .01$.

Table 8

Regression of causal analysis and constraint analysis variables on control variables and confirmation bias

	Problem Recognition	Number of Causes	Cause Criticality	Breadth	Constraint Criticality
	Standardized β	Standardized β	Standardized β	Standardized β	Standardized β
Step 1					
Intelligence	.23**	.20**	.24**	.26**	.28**
Guilt-Proneness	.18*	.08	.14*	.17*	.20**
Anger-Proneness	-.10	.02	-.10	-.05	-.06
Need for Structure	-.11	-.08	-.16*	-.09	-.07
Narcissism	.05	.02	.03	-.04	.00
R^2	.12**	.05*	.12*	.12**	.13**
	$F_{(5, 218)} = 5.69$	$F_{(5, 218)} = 2.31$	$F_{(5, 218)} = 5.97$	$F_{(5, 218)} = 5.74$	$F_{(5, 218)} = 6.59$
Step 2					
Use of Confirming Statements	.29**	.29**	.35**	.14*	.19**
Use of Conflicting Statements	.26**	.11	.22**	.14*	.16*
R^2	.30**	.16**	.29**	.16**	.21**
ΔR^2	.18**	.11**	.19**	.05**	.07**
	$\Delta F_{(2, 216)} = 27.46$	$\Delta F_{(2, 216)} = 13.48$	$\Delta F_{(2, 216)} = 30.27$	$\Delta F_{(2, 216)} = 5.89$	$\Delta F_{(2, 216)} = 10.04$

* $p < .05$
** $p < .01$

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Table 9

Regression of forecasting variables on control variables and confirmation bias

	Short-Term Timeframe Standardized β	Long-Term Timeframe Standardized β	Positivity Standardized β	Negativity Standardized β	Quality Standardized β
Step 1					
Intelligence	-.10	.12	.10	-.06	.20*
Guilt-Proneness	-.05	.04	.03	.06	.16
Anger-Proneness	-.11	.19**	.11	-.07	-.01
Need for Structure	-.04	-.00	-.17*	.11	-.11
Narcissism	.09	.25*	-.05	.05	-.10
R^2	.03		.20	.02	.10**
	$F(5, 218) = 1.40$	$F(5, 218) = 2.94$	$F(5, 218) = 1.86$	$F(5, 218) = 1.08$	$F(5, 218) = 4.58$
Step 2					
Use of Confirming Statements	-.01	.03	.05	.06	.18**
Use of Conflicting Statements	-.20**	.14*	.14*	-.16*	.07
R^2	.07*	.09*	.26*	.22	.14**
ΔR^2	.04*	.02	.03	.02	.04**
	$\Delta F(2, 216) = 4.52$	$\Delta F(2, 216) = 2.55$	$\Delta F(2, 216) = 2.85$	$\Delta F(2, 216) = 2.70$	$\Delta F(2, 216) = 5.08$

$* p < .05$
$** p < .01$

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Table 10

Regression of decision ethicality on control variables and confirmation bias

	Regard for Welfare of Others	Attending to Personal Responsibilities	Adherence to and Awareness of Social Obligations	Decision Ethicality
	Standardized β	Standardized β	Standardized β	Standardized β
Step 1				
Intelligence	.06	.01	.04	.11
Guilt-Proneness	.26**	.25**	.30**	.31**
Anger-Proneness	-.04	.07	-.11	.01
Need for Structure	.01	.03	.03	-.02
Narcissism	.05	.14*	.07	.06
R^2	.07**	.07**	.11**	.10**
	$F_{(5, 218)} = 3.36$	$F_{(5, 218)} = 3.35$	$F_{(5, 218)} = 5.33$	$F_{(5, 218)} = 4.82$
Step 2				
Use of Confirming Statements	-.07	-.01	-.04	.03
Use of Conflicting Statements	.09	.03	.17**	.08
R^2	.08**	.07**	.26*	.11**
ΔR^2	.01	.00	.03*	.01
	$\Delta F_{(2, 216)} = 2.72$	$\Delta F_{(2, 216)} = 2.39$	$\Delta F_{(2, 216)} = 4.83$	$\Delta F_{(2, 216)} = 0.98$

$* p < .05$
$** p < .01$

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Table 11

Mediational Effects of Confirmation Bias on Sensemaking Processes

Sensemaking Process	Mediator	Relative Effect Comparison	Indirect Effect	SE	95% CI
Problem Recognition	Confirm				
		Anger v. Neutral[+]	-.10	.04	[-.193, -.028]
		Guilt v. Neutral[+]	-.09	.04	[-.189, -.016]
		Anger v. Guilt	-.01	.04	[-.081, .064]
	Conflict				
		Anger v. Neutral[+]	-.07	.04	[-.155, -.009]
		Guilt v. Neutral[+]	-.13	.04	[-.224, -.066]
		Anger v. Guilt[+]	.06	.03	[.004, .131]
Number of Causes	Confirm				
		Anger v. Neutral[+]	-.17	.08	[-.379, -.046]
		Guilt v. Neutral[+]	-.16	.08	[-.362, -.028]
		Anger v. Guilt	-.01	.06	[-.147, .114]
Criticality of Causes	Confirm				
		Anger v. Neutral[+]	-.09	.04	[-.184, -.024]
		Guilt v. Neutral[+]	-.08	.04	[-.175, -.014]
		Anger v. Guilt	-.01	.03	[-.078, .060]
	Conflict				
		Anger v. Neutral[+]	-.05	.03	[-.114, -.005]
		Guilt v. Neutral[+]	-.09	.03	[-.160, -.039]
		Anger v. Guilt[+]	.04	.02	[.003, .089]
Breadth of Constraints	Confirm				
		Anger v. Neutral[+]	-.05	.03	[-.131, -.006]
		Guilt v. Neutral[+]	-.05	.03	[-.130, -.003]
		Anger v. Guilt	-.00	.02	[-.053, .034]
	Conflict				
		Anger v. Neutral[+]	-.04	.03	[-.126, -.002]
		Guilt v. Neutral[+]	-.08	.04	[-.175, -.015]
		Anger v. Guilt[+]	.04	.02	[.002, .105]
Criticality of Constraints	Confirm				
		Anger v. Neutral[+]	-.05	.02	[-.108, -.011]
		Guilt v. Neutral[+]	-.04	.03	[-.110, -.006]
		Anger v. Guilt	-.00	.02	[-.042, .034]
	Conflict				
		Anger v. Neutral[+]	-.04	.02	[-.102, -.002]
		Guilt v. Neutral[+]	-.07	.03	[-.142, -.019]
		Anger v. Guilt[+]	.03	.02	[.002, .082]
Short Timeframe of Forecast	Conflict				
		Anger v. Neutral[+]	.02	.02	[.000, .068]
		Guilt v. Neutral[+]	.04	.02	[.004, .102]
		Anger v. Guilt	-.02	.02	[-.064, .000]
Negativity of Forecast	Conflict				
		Anger v. Neutral[+]	.04	.03	[.000, .116]
		Guilt v. Neutral[+]	.07	.04	[.007, .172]
		Anger v. Guilt	-.03	.03	[-.110, -.001]
Quality of Forecast	Confirm				
		Anger v. Neutral[+]	-.05	.03	[-.130, -.011]
		Guilt v. Neutral[+]	-.05	.03	[-.128, -.006]
		Anger v. Guilt	-.00	.02	[-.048, .038]

Table 11 Continued

Mediational Effects of Confirmation Bias on Sensemaking Processes

Sensemaking Process	Mediator	Relative Effect Comparison	Indirect Effect	SE	95% CI
Overall Ethicality	Conflict				
		Anger v. Neutral[+]	-.03	.02	[-.080, -.000]
		Guilt v. Neutral[+]	-.05	.03	[-.110, -.006]
		Anger v. Guilt[+]	.02	.01	[.001, .062]

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Appendix A

Innovation Marketing, Inc. Case

Organizational Background

You work for **Innovation Marketing Inc**., a nationwide marketing firm based in Houston, Texas that specializes in marketing and advertising research. Within Innovation Marketing, there are a number of market research departments, each focusing on different types of industries such as automobiles, telecommunications, travel, and pharmaceuticals.

Your job is an entry-level marketing research position within the automobile market division. This position involves tasks such as collecting and analyzing data on customers' buying habits and product needs and on competitors' use of sales and marketing approaches. In addition, your job involves using this information and other data to determine the potential success of a marketing campaign and to measure the effectiveness of advertising campaigns once they are launched. You have been in this position with Innovation Marketing for a little less than a year.

The two primary individuals you work with in your research division are **Jason** and **Davis**. Jason is in his second year at Innovation Marketing, and you have a good working relationship with him. Davis is the manager of your market division, he pushes his team to produce results quickly. Both you and Jason have generous salaries and commission opportunities thanks mostly to Davis' connections within the automobile industry.

You recently found yourself in the following situation.

Appendix B

Innovation Marketing Inc. Case with Manipulations

*Manipulations key***:** Guilt is <u>underlined</u>, anger is **boldface**, and neutral is [bracketed]

Case:

Innovation Marketing Inc. was hired by Sooner Auto Co. to create a marketing campaign for its newest hybrid car. Davis, the division's market research manager, generates reports on the cars' available features (e.g. leather interiors, GPS navigation, sunroof, etc.) and technical specifications (e.g. horsepower, fuel economy, transmission, etc.) to be included in any marketing research endeavors. Sooner Auto hired Innovation Marketing due to Innovation Marketing's reputation of consistently completing market research in a timely and budget friendly manner. Sooner Auto fully expects Innovation Marketing's final marketing plan to be on time and on budget, or they will move their business to another marketing company.

You and Jason are assigned with gathering data to determine the potential success of a marketing campaign for the hybrid car through focus groups and surveys in a local market. Before developing the marketing analysis materials, <u>you were</u> **Jason was** [the research group was] tasked with reviewing Davis' features and technical specifications report, which is usually long and technical, to create a summary of the car's available features and technical specifications for you and Jason to include when developing your research materials. Although this usually takes several days, <u>you have</u> **Jason has** [the group has] done this numerous times in the past, so <u>you</u> **Jason** skimmed the report [was skimmed] quickly to generate the shortened document to allow the group to move forward quickly on the marketing research.

A few months later, the data from the market analyses are presented to Davis and representatives of Sooner Auto. Everyone is thrilled with the results. The positive reactions to the upcoming availability of the hybrid car, in addition to the car's available features and technical specifications, position the car to be highly successful and well-received. Based on this information, Sooner Auto decides to develop and launch a nation-wide campaign within the next month. As you are writing up the final reports of the marketing analyses, you realize that several of the technical specifications were left off the list that <u>you</u> **Jason** [the research group] used in the focus groups and surveys. You think the technical specifications left off the list are mostly standard, so they shouldn't have much of an impact on the analyses, if any.

Guilt Email

A couple days later, you receive an email from Jason:

> **From :**   Jason Baker <jbaker@innomark.com>
> **Subject :**   **Need Write-up ASAP**

Hey,

      I just talked to Davis, and we really need to get the final report you have been working on for the recent market analyses we completed. David said to me that this project must go well or my job could be in jeopardy. I can't afford to lose this job. Plus, it would be hard to find another job in this industry after being fired from working with a person as prestigious as Davis.

      Jason

When you read this email, you are in disbelief that you have put Jason in this situation. If you had just paid attention to the report the first time around, this whole situation could have been easily avoided. And now your one mistake could cost Jason his job. You realize how unfair the entire situation is for him. How could you let this happen? You feel a knot form in the pit of your stomach, and you become overwhelmed with intense feelings of guilt.

Anger Email

A couple days later, you receive an email from Jason:

> **From :**   Jason Baker <jbaker@innomark.com>
> **Subject :**   **Need Write-up ASAP**

Hey,

      I just talked to Davis, and he really needs the final report you have been working on for the recent market analyses we completed. Davis said to me that this project must go well or your job could be in jeopardy. I know you can't afford to lose this job. Plus, it would be hard to find another job in this industry after being fired from working with a person as prestigious as Davis.

      Jason

When you read this email, you are in disbelief that Jason has put you in this dilemma. If he had just paid attention to the report the first time around, this whole situation could

have been easily avoided. And now Jason's one mistake could cost you your job! You realize how unfair the entire situation is. How could he do this do you? You feel your face get hot and your hands clench into fists. You begin to experience waves of intense anger.

Neutral Email

A couple days later, you receive an email from Jason:

> **From :**   Jason Baker <jbaker@innomark.com>
> **Subject :**   **Need Write-up ASAP**

Hey,

     I just talked to Davis, and we really need to get the final report you have been working on for the recent market analyses we completed.

     Jason

Appendix C

Ethical Framing Manipulation

Neutral Framing:

A week goes by and you think about what to do next. As you think about this, you realize leaving several technical specifications off the list may have implications for the project.

Ethical Framing:

A week goes by and you think about what to do next. As you think about this, you realize leaving several technical specifications off the list may have ethical implications for the project.

Additional Statements

Key: Confirming statements are **bold.** Order of statements was randomized for each participant.

You are unsure how to proceed. During the next week, new information comes to light that may be important to consider.

When you tell your coworker Adam that you are feeling stressed this week, he sympathizes and tells you, "Davis really encourages us to get work done quickly. He is very results oriented and expects us to accomplish a lot of work in a relatively short period of time."

You look over Davis' original report. It is long and went into detail about every available feature and technical specification.

You come across an article discussing the methods involved in focus group research. The article showed that when focus groups were given additional facts about a product, the reactions of the participants were different than focus groups that did not receive the additional facts, all other information being the same between groups.

You review the list and discover some of the technical specifications left of the list were new features introduced this year by Sooner Auto.

You tell your coworker Michael that you may have misquoted some information to a client. He tells you, "The most important issue to the automobile industry is getting the correct information. It is better to have a reputation based on quality. I want marketing research to be seen as a science and trusted by the public."

You tell your coworker Christina that you are afraid of possibly losing a client. She tells you, "In my experience, most clients stay with Innovation Marketing even if the work takes longer than predicted. Even though this could cost the client more money, they stay with us because they are already invested."

You see on the company calendar that Sooner Auto is on track to roll out their nationwide campaign this month.

You get an email from your contact at Sooner Auto saying they are really excited that the project is on track and they can't wait to begin the ad campaign.

You look over the presentation given to Davis and the representatives of Sooner Auto which includes the list of features and technical specifications you used in the marketing research and analyses is in the presentation. Everyone approved the presentation.

While reading Marketing in the Auto Industry you come across an article stating how it is a common business practice to not report all of the specifications in advertisements.