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EXPLORING THE TOXIC TRIANGLE: THE EFFECTS OF LEADERSHIP, TEAM MENTAL
MODELS, AND CORE SELF EVALUATIONS ON FOLLOWER SENSEMAKING AND
ETHICAL DECISION MAKING

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EXPLORING THE TOXIC TRIANGLE: THE EFFECTS OF LEADERSHIP, TEAM MENTAL
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ETHICAL DECISION MAKING

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Abstract

Leadership is an omnipresent aspect of daily life, particularly in organizational settings. While research has extensively examined constructive leadership and its effects on follower and organizational performance, there is a burgeoning interest in exploring the domain of destructive leadership. This has led to the development of the toxic triangle model, which focuses on the interaction between destructive leadership, susceptible followers, and conducive environments. However, more research is necessary to comprehend how these elements interrelate and influence significant outcomes. Thus, the current study aims to investigate the toxic triangle in a simulated organizational context by examining the impact of destructive leaders on the sensemaking and ethical decision making processes of followers, while considering the roles of follower core self-evaluation and perceived team mental models. Participants complete a range of measures and confront an ethical dilemma in a low-fidelity marketing scenario. By exploring the effects of destructive leadership in the presence of follower and contextual vulnerabilities outlined in the toxic triangle theory, this study seeks to advance understanding in this nascent area of research and discuss the implications of findings for leadership, organizational contexts, and literature.

Keywords: leadership, destructive leadership, core self-evaluation, team mental model, sensemaking, EDM

Exploration of the Toxic Triangle: The Effects of Destructive Leadership on Follower Sensemaking and Ethical Decision Making

Organizational leadership wields significant influence over critical processes and outcomes for organizational members and the broader public. While extensive empirical research has been conducted on constructive leadership, the same cannot be said for its destructive counterpart (Arasli et al., 2020; Einarsen et al., 2007; Shaw et al., 2011). However, the dark side of leadership is a blossoming area of research, with scholars theorizing a wide range of concepts such as "tyrannical leadership," "abusive supervision," and "toxic leadership" (Brown & Mitchell, 2010; Einarsen et al., 2007). Destructive leadership has been shown to have detrimental effects on numerous organizational factors, including productivity, employee morale, self-efficacy, and overall job performance (Shaw et al., 2011). Despite the recognition of destructive leadership behaviors as harmful and their association with various forms of workplace deviance, such as aggression, bullying, and counterproductive work behavior, there remains a critical need for research that delves deeper into the nature of destructive influence, moving beyond surface-level understanding of destructive acts (Krasikova et al., 2013).

The toxic triangle model emerges from the literature on destructive leadership and provides a powerful framework for understanding how leaders, followers, and environments interact to facilitate destructive leadership (Padilla et al., 2007). The model identifies two distinct types of susceptible followers: conformers who blindly obey the leader and colluders who actively collaborate with the leader to further their own agendas. By further investigating and integrating the elements of the toxic triangle model, we can significantly advance our understanding of destructive leadership and its impact. Ethical considerations can also play a

vital role in assessing the toxic triangle and destructive leadership by examining followers' sensemaking and ethical decision making (EDM) processes.

It is crucial to highlight that while existing research has explored the relationship between leadership and ethics, empirical investigation of the distinct link between destructive leadership, follower sensemaking, and EDM remains scant (Brown & Treviño, 2006; Thiel et al., 2012). Moreover, there is a significant dearth of knowledge on the impact of destructive leadership within the toxic triangle framework and how follower attributes and environmental contexts may contribute to this phenomenon. Against this backdrop, the present study aims to push the boundaries of the literature on destructive leadership by examining how follower susceptibility (core self-evaluation) to and environmental conditions (team mental model) of the leadership influence follower sensemaking and EDM processes.

Destructive Leadership

Despite extensive research, leadership literature has only recently proposed an integrative definition of destructive leadership, owing to its multifaceted and intricate nature (Einarsen et al., 2007; Krasikova et al., 2013; Thoroughgood et al., 2018). To address this challenge, a comprehensive definition was formed, asserting destructive leadership is:

“a complex process of influence between flawed, toxic, or ineffective leaders, susceptible followers, and conducive environments, which unfolds over time and, on balance, culminates in destructive group or organizational outcomes that compromise the quality of life for internal and external constituents and detract from their group-focused goals or purposes” (Thoroughgood et al., 2018, p. 633).

Thoroughgood et al. (2012) contend that destructive leadership is a complex phenomenon that takes various forms and manifests differently depending on the context and encompasses

five critical aspects. First, while leaders' behavior may be the primary source of destructive outcomes, the involvement of followers and the environment creates a continuum of constructiveness to destructiveness. It is vital to acknowledge that constructive leaders can produce negative outcomes and that destructive leaders can generate positive outcomes (Padilla et al., 2007). Second, controlling, coercing, and manipulating behaviors are only a fraction of what destructive leadership entails in social-organizational processes. Third, destructive leaders often demonstrate selfishness, sometimes putting their own goals and objectives above those of their followers and the organization. Fourth, Thoroughgood et al. (2018) propose that destructive leadership undermines the primary goals and objectives of an organization's stakeholders, leading to negative organizational outcomes. Finally, susceptible followers and conducive environments, along with specific leader attributes and behaviors, contribute to the emergence of destructive outcomes. As such, it is critical that both the organization and its members participate in evaluating whether enacted leadership is destructive and the potential implications (Krasikova et al., 2013). Additionally, it is crucial to recognize that the interplay of followers and the environment in which the destructive leader is situated plays a significant role in both the destructive process and the resulting outcomes, supporting the proposition of the toxic triangle model.

The critical role of leadership in fostering ethical conduct within an organization has been widely acknowledged and investigated in research (e.g., Brown & Mitchell, 2010). As a driving force behind ethical climate, leaders have the ability to influence the EDM and behavior of their subordinates (Hoogervorst et al., 2010; Treviño et al., 2000). Leaders who demonstrate disapproval of unethical behavior are more likely to discourage their followers from engaging in

such behavior. Conversely, leaders who implicitly or explicitly condone unethical behavior may inadvertently promote and even increase follower unethical behavior (Hoogervorst et al., 2010).

Recent research has emphasized the importance of ethical leadership, which involves establishing and modeling a set of ethical standards aligned with principled, honest, and fair decision making (Brown & Treviño, 2006; Treviño et al., 2000). Ethical leaders are expected to positively influence the EDM of their followers (Brown & Treviño, 2006). Meanwhile, Mowchan et al. (2015) suggest that assessing follower group characteristics is crucial to understanding how corporate misconduct arises and persists. However, it is also important to note that the followers themselves and the environment in which they operate can contribute to their susceptibility to unethical behavior, even when under the influence of a destructive leader (Padilla et al., 2007). Given the multifaceted, dynamic, and ambiguous nature of ethical situations, incorporating intuitive and interpersonal EDM through sensemaking models is recommended to better represent how ethical events are recognized and responded to (Mumford et al., 2008; Johnson et al., 2012).

Ethical Sensemaking

Sensemaking is a crucial process that significantly enhances one's ability to tackle complex and ambiguous ethical issues by engaging in a deliberate and conscious examination of the situation that results in innovative and practical solutions (Bagdasarov et al., 2016; Caughron et al., 2011; Mumford et al., 2008). This process involves comprehensively assessing the internal and external components of the environment to determine the most appropriate course of action to address the ethical challenge at hand (Johnson et al., 2012). Sensemaking is a powerful tool that enables the identification of critical components of the situation, leading to the formation of a mental model that facilitates EDM and action-taking by recognizing and addressing the ethical

implications of the situation (Mumford et al., 2008). The mental framework that emerges from sensemaking employs cognitive functions such as causal analysis, constraint analysis, and forecasting to improve accuracy (Thiel et al., 2013). The sensemaking process comprises three key aspects: problem recognition, information gathering, and information integration that involves forecasting outcomes. A growing body of research has consistently demonstrated that sensemaking is a fundamental process in EDM and is positively linked to it (Bagdasarov et al., 2016; Caughron et al., 2011; Thiel et al., 2013).

Sensemaking is not only crucial to EDM but also influenced by both individual and social factors (Thiel et al., 2012). Moreover, personal, situational, and environmental constraints have been identified in the leader sensemaking literature that negatively affect the ability to comprehend ethical situations, leading to poor EDM (Thiel et al., 2012). These findings are particularly significant because followers may also encounter constraints in the form of the toxic triangle model, which includes susceptibility and environmental factors, with possible consequences for their sensemaking and EDM.

Destructive Leadership and Follower Outcomes

The ethical behavior of subordinates is set by organizational leaders, who establish the standards for decision making and actions (Stenmark & Mumford, 2011). Followers rely on their leaders to guide them, especially when faced with ethical issues or dilemmas, and to communicate how they should act to accomplish goals (Brown & Mitchell, 2010). However, research has shown that followers who remain in unethical environments may adopt destructive norms and engage in unethical behaviors, even if they initially adhered to ethical standards (Burchard, 2011; Padilla et al., 2007). Furthermore, subordinates' perceptions of their leaders can influence their willingness to report issues when they arise, as emphasized by Brown and

Treviño (2006). The significance of these findings is clear: leaders play a critical role in shaping their subordinates' EDM and behavior, and the consequences of poor leadership can be severe.

Fostering an ethical culture and serving as an ethical role model is critical for leaders, as subordinates are highly likely to mimic their behavior (Stenmark & Mumford, 2011). According to Brown & Mitchell (2010), employees tend to adopt the ethical values of their leaders, regardless of whether those values promote productive or counterproductive work behavior. Even without participating in unethical behavior themselves, leaders can indirectly enact it within their followers through rewarding it, condoning non-conformers, and overlooking acts that are clearly unethical (Ashforth & Anand, 2003).

Employees who are subjected to destructive leadership may not only become complicit in the destructive behavior but also may redirect their frustration towards other members of the organization or towards the organization itself (Burchard, 2011; Mitchell & Ambrose, 2012). This suggests that the negative impact of destructive leadership can extend beyond the immediate targets of mistreatment. Despite being mistreated, employees may still engage in counterproductive behavior, which may harm the organization (Kluemper et al., 2019; Mitchell & Ambrose, 2012). Therefore, it is imperative for organizations to address destructive leadership to prevent the cascading negative effects on employees and the organization. Keeping this information in mind, it is proposed that:

H1: Followers of a destructive leader will engage in (a) less sensemaking and (b) less ethical decision making than followers of a non-destructive leader.

Destructive Leadership and Core Self-Evaluations

The susceptible follower distinction of a conformer, as found under the toxic triangle model, includes individuals with low core self-evaluation (CSE). CSE refers to an individual's

self-concept and self-evaluation in terms of their self-esteem, self-efficacy, locus of control, and neuroticism. These factors play a crucial role in shaping an individual's perception of themselves and the world around them. Through self-esteem, one determines the level to which they value themselves; self-efficacy concerns one's belief in the ability to perform well; locus of control is how one determines their fate, coming from the self or external factors; lastly, neuroticism relates to emotional instability in one's life (Thoroughgood et al., 2012).

Those with high CSEs find themselves to be in control and capable. Within their work, these individuals display positive attitudes and behaviors (Kluemper et al., 2019). On the other hand, individuals with low CSEs are particularly vulnerable to destructive leadership and may struggle to effectively process information related to themselves and their environment (Padilla et al., 2007). Such individuals are less likely to report ethical violations due to the impact of their self-evaluations on their decision making processes. For instance, those with low self-esteem may be concerned about retaliation and confrontation, while those with low self-efficacy and an external locus of control may feel unable to challenge their leader and may view external factors as controlling their fate. Additionally, neuroticism may lead individuals to fear authority and avoid conflict, resulting in passive behavior and a reluctance to report ethical violations (Thoroughgood et al., 2012).

The role of self-concept is crucial in understanding the impact of self-evaluation, as individuals with an inconsistent, unstable, or uncertain self-concept are more susceptible to destructive leadership (Thoroughgood et al., 2012). Furthermore, research suggests that employees with low CSEs are submissive and more likely to engage in workplace deviance, as they become targets of mistreatment, such as abusive supervision. In response to harmful treatment, employees may retaliate through deviant acts, even targeting the organization,

although the supervisor is the source of the aggression (Kluemper et al., 2019). Given this information,

H2: Followers with high core self-evaluations will engage in (a) more sensemaking and (b) more ethical decision making than those with low core self-evaluations.

The literature surrounding the relationship between core self-evaluations (CSEs) and destructive leadership is limited, but available evidence suggests that negative and deviant behavior is linked to CSE (Kluemper et al., 2019). Destructive behaviors of supervisors, including outbursts, ridicule, and scapegoating, have been linked to organizational ethics, and mistreatment of subordinates has been identified as a precursor to workplace deviance (Kluemper et al., 2019; Padilla et al., 2007). Research suggests that employees with low CSEs may be more likely to engage in negative workplace behavior and overall deviance. However, there is a lack of information on how CSE influences EDM in the workplace. Furthermore, certain aspects of CSE may make individuals more submissive and susceptible to being taken advantage of. When subordinates have negative self-evaluations, they are more vulnerable to the influence of destructive leadership. That being said, the following hypothesis was established:

H3: Followers of a destructive leader will engage in (a) less sensemaking and (b) less ethical decision making when they have a low core self-evaluation.

Team Mental Models

To fully comprehend the impact of destructive leadership on decision making, it is essential to consider the environmental conditions in which it occurs, and team mental models provide such conditions. Thoroughgood et al. (2012) assert that incorporating group dynamics is crucial for a comprehensive understanding of the influence of followers and contexts on destructive leadership. Additionally, mental models provide individuals with the means to

comprehend phenomena, make inferences, and react to situations. Team mental models can encompass several crucial aspects, such as knowledge of tasks, performance expectations, constraints, roles, communication patterns, and skills (Kellermans et al., 2008).

Shared team mental models are characterized by the presence of common beliefs and feelings among team members about their tasks, procedures, expectations, roles, technology, constraints, etc. This shared knowledge and skill set can enable the team to establish a strong foundation for achieving their goals. However, according to Kellermans et al. (2008), when team members' perspectives diverge too much, it can hinder their ability to define problems, identify issues, and develop effective solutions. Due to the statements above and the scarcity of literature on perceived mental models in teams, the subsequent research question was formulated:

RQ1: Will followers in an environment with a perceived shared team mental model engage in (a) more sensemaking and (b) more ethical decision making than in an environment with a non-shared team mental model?

The Toxic Triangle

The relationship between mental models and negative leadership has received little attention in the literature, but Kellermans et al. (2008) have explored its connection to decision making processes. They argue that mental models enable individuals to make sense of situations and take action accordingly. However, when team members hold vastly different perspectives, they may struggle to define the problem, identify issues, and evaluate solutions. Conversely, excessive conformity within shared mental models could potentially harm critical thinking and decision quality. Kellermans et al. (2008) suggest that decision making in teams with shared mental models can enhance communication and decision making efficiency and effectiveness.

Furthermore, destructive leadership can lead to a negative work environment, which can result in confusion, frustration, and a lack of clarity among followers (Einarsen et al., 2007). Such an environment can also result in team members having different mental models and ineffective communication and collaboration (Mathieu et al., 2000). As a result, team members may engage in psychsensemaking, a process of coping with uncertainty and ambiguity that arises from a lack of shared mental models, where individuals create their own individual sense of reality to make sense of the situation (Weick, 1993). This can lead to further confusion and misinterpretation of information, ultimately leading to ineffective decision making.

The investigation of individual CSEs in relation to teams and mental models remains inadequate (Cristofaro et al., 2020), and complicit followers have received little attention in studies on destructive leadership (Mowchan et al., 2015). However, existing literature supports the idea that successful decision making in the workplace depends on both organizational factors and individual traits (Cristofaro et al., 2020). Although research on team CSEs and performance is limited, some studies suggest that shared team mental models can mitigate the negative effects of low CSEs by providing a framework for behavior and knowledge (Mathieu et al., 2000).

Haynie (2012) emphasizes that individuals possessing high CSEs require a team environment that is optimized for performance enhancement. Furthermore, a growing body of literature suggests that shared team mental models promote superior performance by enabling individuals to effectively engage with their surroundings (Mathieu et al., 2000). Consequently, teams comprising members with positive CSEs exhibit greater levels of performance, in part because they are more inclined to tackle challenges head-on (Haynie, 2012). The literature emphatically highlights the detrimental impact of personal and environmental factors, especially

when manifested as constraints, on individuals' sensemaking and subsequent EDM (Thiel et al., 2012).

The conspicuous lack of research on the interaction between CSE and team mental models, as well as how leadership factors into the equation to influence sensemaking and EDM, is evident. Nonetheless, dispositional characteristics such as CSEs have been suggested to have a contingency role in how leaders impact follower processes (Zhang & Peterson, 2011). Thus, negative leadership is expected to have a diminished impact on team and individual outcomes when team members possess higher levels of CSEs.

To further emphasize the significance of leadership, positive leadership such as transformational leadership has been found to facilitate subordinates in coping with adaptation and improving team learning processes (Ayoko & Chua, 2014). Meanwhile, Kluemper et al. (2019) demonstrated that individuals with lower CSEs are more submissive and susceptible to negative leadership, including abusive supervision, and may feel less capable of problem-solving. Furthermore, Padilla et al. (2007) pointed out that vulnerable followers experiencing destructive leadership in a poor environmental context are likely to comply with or lack the ability to resist such leadership, resulting in negative outcomes. These factors beg the question below on how they interact to impact both sensemaking and EDM processes:

RQ2: Will the interaction among destructive leadership, low follower core self-evaluation, and lack of a perceived shared team mental model lead to the least amount of follower (a) sensemaking and (b) ethical decision making?

Method

Sample

A total of 356 participants, including 260 females (72.6%), 92 males (25.7%), 6 classified as other or missing (1.7%), were recruited for this study. The mean age of the participants was 18.85 years ($SD = 3.00$). The study employed convenience sampling of undergraduate psychology students enrolled in introductory psychology courses at a Midwest university, representing a variety of majors. Participants were recruited using the university's online participant recruitment system, SONA, and received course credit for their hour-long participation upon completion.

Design and Procedure

This study employs a robust 2x2x2 factorial between-subjects design, featuring two distinct leadership classifications (destructive vs. non-destructive), two levels of CSE (high vs. low), and two categories of perceived team mental models (shared vs. unshared). To ensure a rigorous and randomized sample, participants were assigned to one of four experimental conditions based on their CSE scores, which were classified as either high (39 or greater) or low (less than or equal to 38) using a cut point of 39 determined from pilot data. The pilot study involved 100 participants, whose CSE scores ranged from 23 to 59, with a median score of 39, which was used as the median split number for the current study. The experimental conditions featured scenarios with either a destructive leader and unshared team mental model, a destructive leader and shared team mental model, a non-destructive leader and unshared team mental model, or a non-destructive leader and shared team mental model. Participant responses to EDM questions were thoroughly content coded for sensemaking and ethicality, then quantified into scores for statistical analysis.

To gather data for this study, students in a general education psychology course were recruited through the university's SONA system for a 1-hour study. Students were connected to

the Qualtrics survey, through the SONA system. Upon accessing the Qualtrics survey, participants were presented with a comprehensive informed consent form and were then exposed to a battery of covariate measures involving the variables of general intelligence and need for cognition. Following this, they completed the CSE measure, and were assigned to one of the four previously mentioned conditions based on their CSE score, which was evenly distributed at random. Each of these conditions presented participants with a challenging ethical situation related to a job role in hybrid working environment within a branch of a nationwide marketing firm.

The scenario began with a comprehensive breakdown of the participant's role within the firm, complete with an organizational flow chart providing an in-depth understanding of the organization (See Appendix A). This was followed by a thorough description of the organization's history and the type of leadership and team mental model that participants were exposed to (See Appendices B-D). To further immerse participants in the context, an email from the leader was provided, describing the project they were working on and assigning the task of creating a presentation for the CEO of the organization. This task involved working with two other employees to complete focus groups for a new line of caffeinated products. However, the participant was soon confronted with information of concern related to the company's product quality and labor standards, which prompted a series of email exchanges with their team and exposed them to their shared or unshared team mental model (See Appendix E). The study concluded with a final report from focus groups conducted for the products and an email from the leader directing participants to the ethical concern they were to respond to in their decision making task. This task required participants to describe the problem, discuss the causes of the problem, and consider the factors involved in the decision making process before developing a

solution to the problem (See Appendices F & G). To ensure a rigorous study, participants completed manipulation checks on the type of leader and team mental model, took final covariate measures, answered demographic questions, and received a comprehensive debriefing (See Appendix H).

Measures and Manipulations

Core Self-Evaluation Measure

To gather comprehensive data, participants were required to complete Judge et al.'s (2003) Core Self-Evaluation Scale (CSES) (See Appendix H) following an initial set of covariate measures. The scale consists of 12 items, each rated by participants on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). For instance, a sample item from the scale is "Overall, I am satisfied with myself." Participants were classified as having a high CSE if their total score was 39 or above, while those with a total score of 38 or below were considered to have a low CSE.

Leadership Manipulation

In the EDM scenarios, participants were deliberately exposed to either a leader who exhibited destructive qualities or one who did not. The only aspect that varied between the two leaders was the description of their characteristics in the organization overview. All participants received identical emails from the leader. Drawing upon Thoroughgood et al.'s (2018) comprehensive definition, this study defined destructive leadership as a collection of harmful behaviors and qualities. Using this definition and literature, a manipulation check questionnaire for leadership was formed (See Appendix H). To ensure the scenario descriptions were effective, the non-destructive leader's characteristics and behaviors were intentionally crafted as the opposite of those attributed to the destructive leader. An example sentence from the description

provided for the destructive leader conditions is as follows, “Coworkers have complained about Sam playing favoritism, cutting corners, and looking the other way when employees are acting in ways that don’t align with the best interest of the organization.” The non-destructive leader description’s opposing sentence was “Sam is said to be fair to all employees and works hard to ensure a positive work environment that gets the job done and gets it done right, with concern to the best interest of the organization.” For the full descriptions of the leaders, see Appendix C.

Perceived Team Mental Model Manipulation

The study employed a second manipulation that aimed to elicit perceptions of shared or unshared team mental models. A comprehensive team description was included in the organizational overview, accompanied by a series of emails from team members that incorporated various mental model aspects like task work, distribution of responsibilities, and knowledge about roles (See Appendix E). These mental model facets were derived from Johnson et al.’s (2007) breakdown and questionnaire on mental models; their questionnaire was also used to establish manipulation check items (See Appendix H). Notably, the shared and unshared mental model aspects were designed to be in opposition to one another, mirroring the approach taken in the leadership manipulation. An example sentence of the unshared team mental model description includes “When working with them, you feel like you are not always on the same page, particularly when it comes to understanding project and task goals and how to achieve them.” The shared team mental model description’s opposing sentence was “When working with them, you feel like you are on the same page, particularly when it comes to understanding project and task goals and how to achieve them.” See Appendix B for the full descriptions. By leveraging these manipulations, this study sought to maximize the salience of key constructs and ensure robust experimental effects.

Dependent Variables

The variables examined below were evaluated by a panel of three judges who underwent rigorous training to ensure that they fully understood the operational definitions of the variables and rating documents and scales. The judges were provided with a benchmark rating rubric to ensure consistency in their evaluations. They were also kept blind to the study's hypotheses and experimental conditions to avoid any potential bias. Regular meetings were held to address any discrepancies in ratings and to provide clarity on the variables and rating process. Interrater reliabilities (r^*_{wg}) of significant outcomes are reported in Table 1 along the diagonal, reflecting the high level of consistency and accuracy in the evaluations. The reliabilities ranged from .82 to .87 across all the ethical sensemaking and EDM variables.

Sensemaking

To assess the participants' sensemaking abilities, several variables were coded, including the quantity and diversity of issues identified, as well as the alignment between their identified issues and those of the actual ethical situation (Caughron et al., 2011). The sensemaking variables, except for the number of causes and number of constraints identified, were rated on a five-point scale, ranging from 1 (little consideration) to 5 (significant consideration). The sensemaking variables are as follows:

Problem Recognition. Problem recognition is the level to which the participant recognizes that the ethical situation exists and entails critical aspects; this is considered the first step to sensemaking (Caughron et al., 2011). Question 1 of the EDM task, seen in Appendix G, was rated for this marker.

Number of Causes Identified. This variable simply refers to the total number of causes the participant specifies are involved in the ethical situation identified. Question 2 of the EDM task, seen in Appendix G, was rated for this marker.

Criticality of Causes Identified. In rating this variable, one looks at how closely the causes, identified by the participant, align with and lead to the ethical situation presented. Question 2 of the EDM task, seen in Appendix G, was rated for this marker.

Number of Constraints. This variable refers to the total number of constraints identified by the participant for the ethical situation at hand. Question 3 of the EDM task, seen in Appendix G, was rated for this marker.

Breadth of Constraints. The constraints described in the participants' responses were rated on the degree to which they cover many factors, being personal and situational, and elements, including people, tasks, groups, etc. Question 3 of the EDM task, seen in Appendix G, was rated for this marker.

Criticality of Constraints. Participants' responses were rated to the degree they highlight the most significant constraints to the ethical issue at hand. Question 3 of the EDM task, seen in Appendix G, was rated for this marker.

Forecast Analysis. The forecasting of outcomes has been shown to play a key role in the refinement of plans, helping to optimize outcomes by means, such as addressing associations, conflicts, and prospective problems with plan executions (Mumford et al., 2001). Rated on a 5-point scale from 1 (participant did not consider the variable at all) to 5 (participant considered the variable to a great extent), the factors of forecast analysis are as follows. Question 4 of the EDM task, seen in Appendix G, was rated for the following markers:

Forecasting Short-term. This variable addresses the level to which the participant's forecasting incorporates a short-term timeframe.

Forecasting Long-term. Addresses the level to which a long-term timeframe is considered by the participant's forecast.

Forecasting Positive Valence. The level to which the outcomes of the participant's predicted forecast are positive in nature.

Forecasting Negative Valence. The degree of how negative in nature the outcomes of the participant's predicted forecast are.

Quality of the Forecast. This evaluates the level to which the participant's forecast is detailed, complex, and includes critical elements from the ethical situation (Beeler et al., 2010; Thiel et al., 2013).

Ethical Decision Making

To assess EDM, the ethicality of participants' responses to the decision making task, questions 5 and 6 (see Appendix G), were evaluated on a robust five-point scale, ranging from 1 (indicating that the participant did not consider the variable at all) to 5 (indicating that the participant considered the variable to a great extent), across four categories as described below.

Regard for the Welfare of Others. In terms of how much the participant's response reflects attention and care for others' welfare, measured as having high or low regard. Some factors in the low category include intentionally harming others, attempting to control others, and retaliation. Factors in the high category include, but are not limited to, considering impact on others, respecting the rights of others, and considering fairness of process and outcome.

Attending to Personal Responsibilities. Final decisions made by participants may demonstrate their attention to personal responsibilities by investigating numerous markers. In the

category of low personal responsibility is negligence, failing to take action, avoiding responsibility, and doing the minimum. In terms of high personal responsibility, actively avoiding personal bias, seeking additional information to clarify the situation, and being accountable to one's actions, behaviors, and outcomes are included.

Awareness of Social Obligations. The extent to which the participant response adheres to and demonstrates awareness of social obligations that relate to the group, organization, field, or general society. More specifically, markers are seen as considering guidelines, following social roles, being aware of and respecting cultural norms and values, and considering formal and informal norms.

Overall Ethicality. The overall ethicality of the participant responses is in regard to how much the decision and actions to be taken represent ethical principles and norms. Deemed as markers of ethicality include considering the welfare of others, personal responsibilities, and social obligations, rules, and norms of the situation.

Covariates and Demographics

Various covariate control measures and demographics were assessed to determine what variables may have potentially influenced responses to the CSES and EDM task. After consenting to the study, participants completed pre and post scenario covariate measures of individual differences, including intelligence and personality, as well as the factors of need for cognition, leader identification, and social desirability.

Individual factors are considered critical in understanding EDM (Antes et al., 2007). Specifically, ethical behavior has been shown to have a significant relationship with intelligence (Mumford et al., 2008). To assess intelligence, Grimsley et al.'s (1957) verbal reasoning assessment was given through the use of their Employee Aptitude Survey (EAS). Measuring a

participant's need for cognition can help to identify individuals who are more likely to engage in effortful cognitive processing. Research has shown that individuals with higher need for cognition tend to have better problem-solving skills, are more willing to engage in complex tasks, and have greater persistence in completing tasks that require cognitive effort (Cacioppo, Petty, & Kao, 1984; Cacioppo & Petty, 1982; Lang, 2010). This can be especially important in the context of sensemaking and ethical processes in organizations, as individuals who are more motivated to engage in thinking tasks related to ethical issues may be more effective in identifying and addressing ethical concerns. To measure the need for cognition, Cacioppo & Petty's (1982) scale was used. Personality is another individual factor that has been discerned as having influence on behavior in the workplace, shaping how individuals make perceptions (Antes et al., 2007; Barrick & Mount, 1991). Both intelligence and the need for cognition were assessed before participants were exposed to the experimental conditions.

Following the experimental conditions and manipulation checks, leader identification, social desirability, and personality were assessed. Leader identification which is a factor that has been said to have a significant influence on the motivations and behaviors of employees, leading them to merge their self-definition with the leader, internalize leader values and behavioral norms as their own, and act in ways to benefit the leader (Guo et al., 2022). Leader identification was assessed using an adapted version of Shamir et al.'s (1998) 7-item scale, rated within a 5-point range (1='Disagree strongly' to 5='Agree strongly'); an example item includes "My leader represents values that are important to me" (See Appendix H). In assessing personality, the John & Sirvastava (1999) Big Five trait taxonomy was used, including 44 items to which participants were to rate the level they apply to them on a Likert scale (1='Disagree strongly' to 5='Agree strongly'); an example item includes "Is original, comes up with new ideas." Given that

participants were self-reporting, attempting to respond in a socially acceptable fashion may occur and social desirability should be accounted for (Friedrich et al., 2009). The construct of social desirability was measured using Paulhus' (1984) Balanced Inventory of Desirable Responding scale. This scale encompasses 40 items, rated on a 7-point Likert scale (1='Not true to 7='Very true'); an example item from the scale includes "I never regret my decisions." At the end of the study, in addition to the final covariates, participants were provided a demographic questionnaire, consisting of the beforementioned variables.

Several demographics including age, gender, language, year in school, experience working in a café, number of both business and marketing classes, as well as number of high school and college leadership positions were also reported by participants. Due to the diverse nature of participants enrolled in a general education course, there was a wide range of majors reported, such as finance, nursing, musical theatre, and biochemistry. On average, participants had taken 0.09 marketing classes, with a range of 0 to 3, and 0.34 business classes, with a range of 0 to more than 5.

Analyses

To analyze the data, the study utilized both univariate analyses of variance (ANOVA) and univariate analyses of covariance (ANCOVA) to test the effects of the independent variables on sensemaking and EDM outcomes. The core self-evaluation scores were dichotomized into low and high groups based on median split scores identified in a pilot study. The independent variables included the manipulations of leadership and perceived team mental models, as well as the core self-evaluation score. Significant covariates, as well as descriptive statistics can be seen in Table 1. Only covariates that were significant at or below the .05 level were retained during the analyses to ensure the validity of the results. In estimating effect sizes, partial eta-squared

values of .01, .06, and .14 indicated small, medium, and large effect sizes, respectively, as recommended by Cohen (1988), Lakens (2013), and Morris & Fritz (2013). This guideline was followed to interpret all significant and marginally significant results of the ANOVAs and ANCOVAs.

Results

Manipulation Checks

Leadership

In order to verify the effectiveness of the leadership manipulation, participants were asked to rate 9 items on a Likert scale of 1 (strongly disagree) to 5 (strongly agree) as seen in Appendix H. An independent samples t-test was conducted to compare the recognition of the leadership manipulation between participants who were assigned to either a destructive or non-destructive leader condition. The analysis revealed that those who were assigned to the destructive leader conditions scored significantly higher on the manipulation check scale ($M = 27.02$, $SD = 3.05$) than those who were assigned to the non-destructive leader conditions ($M = 24.66$, $SD = 3.05$). This indicates that participants were able to perceive differences in the leadership styles they were exposed to, $t(354) = -7.29$, $p < .001$. Using item reliability scores and theory, item 4 was ultimately removed, leaving the established 8-item scale to hold an Alpha reliability of .81.

Perceived Team Mental Models

In order to assess the effectiveness of the team mental model manipulation, participants were asked to rate 10 items on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) as seen in Appendix H. An independent samples t-test was used to compare the recognition of the team mental model manipulation between participants who were assigned to

either a shared mental model condition or a condition lacking a shared mental model. The analysis revealed that participants in the shared mental model conditions scored significantly higher on the manipulation check scale ($M = 39.70$, $SD = 6.19$) compared to those in conditions lacking a shared team mental model ($M = 22.49$, $SD = 8.25$). These findings indicate that participants were able to recognize the differences in the type of team mental model they were assigned to, $t(321) = -22.19$, $p < .001$. Alpha reliability of the established scale was .96.

Sensemaking

In addition to being analyzed as one composite score, each of the sensemaking variables were analyzed independently as well as in composite categories, including causes, constraints, and forecasting. Variables without any significant effects are criticality of causes, number of constraints, breadth of constraints, short-term forecasting, long-term forecasting, positivity of forecasting, negative forecasting, and quality of forecasting. The significant findings are as follows:

Problem Recognition

The ANCOVA in Table 2 provided evidence of a small effect size of perceived team mental model type on the outcome of problem recognition $F(1, 347) = 8.38$, $p < .01$, $\eta^2 = .02$. A significant main effect was discerned, where greater problem recognition occurred when followers were presented with a shared team mental model ($M = 2.28$, $SE = .07$), compared to those presented with an unshared team mental model ($M = 2.00$, $SE = .07$). Non-significant findings occurred for leadership, core self-evaluations, as well as any interactions for problem recognition.

Number of Causes

Table 2 provides the results of the ANOVA and displayed a small effect size $F(1, 348) = 4.50, p < .05, \eta^2 = .01$, where a significant interaction effect between leadership and core self-evaluation occurred. Post hoc analyses were conducted, and the LSD test demonstrated that when destructive leadership is present, the high core self-evaluation participants identified a significantly higher number of causes of the ethical issue ($M = 2.24, SE = .09$) compared to those with low core self-evaluations ($M = 1.94, SE = .10$). See Figure 1. Non-significant findings occurred for all of the main effects, the two-way interactions between leadership and team mental models or team mental models and core self-evaluation, and the three-way interaction on number of causes.

Criticality of Causes

A small effect was detected through an ANCOVA $F(1, 347) = 88.17, p < .01, \eta^2 = .02$. Results point to the significance of team mental models on the criticality of causes identified by followers, where those under a shared team mental model ($M = 2.45, SE = .08$) identified causes significantly more critical to the ethical task than those under a nonshared team mental model ($M = 2.13, SE = .08$). There was a significant violation of the homogeneity assumption (Levene's test $p < .05$). To correct for this, the Brown-Forsythe ANOVA statistic was used. Results from this still indicated a significant effect of team mental models on criticality of causes $F(1, 354) = 88.18, p < .01$. See Table 2. Non-significant findings occurred for leadership, core self-evaluations, as well as any interactions on criticality of causes.

Negative Forecasting

There was a significant violation of the homogeneity assumption (Levene's test $p < .05$). To correct for this, a logarithmic transformation was used on the negative forecasting variable. A small effect was detected through an ANCOVA $F(1, 346) = 4.51, p < .05, \eta^2 = .01$. See Table 2.

Results point to the significance of core self-evaluation on the level of negativity identified in participant responses. Participants with high core self-evaluations ($M = .31$, $SE = .01$) exhibited greater levels of negativity in their forecasting response than those with low core self-evaluations ($M = .27$, $SE = .01$). Non-significant findings occurred for leadership, team mental models, as well as any interactions on negative forecasting.

Ethical Decision Making

This process was analyzed as a composite score as well as through each of the four EDM variables. The only variable without a significant output is that of personal responsibility. The significant findings of the individual variables are as follows:

Regard for Welfare of Others

The ANCOVA in Table 3 provided evidence of a small effect size of perceived team mental model type on the outcome of regard for welfare of others $F(1, 347) = 4.61$, $p < .05$, $\eta^2 = .01$. A significant main effect was discerned, where the regard for welfare of others was considered more in participant responses when they shared a mental model with their team ($M = 2.28$, $SE = .07$), compared to those who did not share a mental model with their team. Non-significant findings occurred for leadership, core self-evaluations, as well as any interactions for regard for welfare of others.

Social Obligations

An ANCOVA discerned a small effect of team mental model type on social obligations $F(1, 347) = 4.69$, $p < .05$, $\eta^2 = .01$. Specifically, the presence of a shared team mental model resulted in greater consideration of social obligations within participant responses ($M = 2.07$, $SE = .07$), compared to participants within an unshared team mental model ($M = 1.83$, $SE = .08$). However, there was a significant violation of the homogeneity assumption (Levene's test p

< .05). To correct for this, the Brown-Forsythe ANOVA statistic was used. Results from this still indicated a significant effect of team mental models on the mention of social obligations $F(1, 354) = 5.05, p < .05$. Main effect findings for leadership and core self-evaluations as well as any two-way or three-way interaction findings were non-significant.

Overall Ethicality

Results here came from an ANCOVA that displayed a small effect of team mental model type and overall ethicality of participant responses $F(1, 347) = 4.96, p < .05, \eta^2 = .01$. That being said, it was the presence of a shared team mental model that resulted in participants generating responses with higher levels of overall ethicality ($M = 2.14, SE = .08$), compared to participants exposed to conditions with an unshared team mental model ($M = 1.89, SE = .08$). The other main effects of leadership and core self-evaluation, as well as any interaction effects were non-significant.

Discussion

The primary objective of this study was to investigate the influence of destructive leadership on the sensemaking and EDM of followers, with consideration given to the toxic triangle model. While the literature on leadership has offered limited contributions to the areas of destructive leadership and the toxic triangle, this study seeks to bridge the gap and offer significant theoretical and practical insights for this theory in the domain of ethical sensemaking and decision making.

Hypotheses and Research Question Findings

Despite the initial hypotheses put forward in this study, the results proved to be much more nuanced. Specifically, hypothesis 1a and 1b, positing that followers of a destructive leader

would exhibit less (a) sensemaking and (b) EDM than followers of a non-destructive leader, were not supported by the data.

Additionally, hypothesis 2a that suggested followers with high CSEs would engage in more sensemaking was partially supported and hypothesis 2b that proposed that they would exhibit more EDM was unsupported. The support for hypothesis 2a resulted from the variable negative forecasting. Thoroughgood et al.'s (2018) findings support the idea that individuals with high core self-evaluations (CSEs) may be more confident in handling negative outcomes. As a result, they engage in more negative forecasting during sensemaking. Conversely, individuals with lower CSEs may provide fewer negative outcomes, reflecting their lower confidence in handling such situations. These results suggest that CSEs may influence how individuals engage in sensemaking, particularly in anticipating negative outcomes.

Hypothesis 3a, which examined the interaction of destructive leadership and low core self-evaluation on followers' sensemaking, was partially supported, in line with some aspects of the toxic triangle theory of destructive leadership. Nevertheless, hypothesis 3b, predicting that this same interaction would result in decreased EDM by followers, was not supported by the data. The notion of hypothesis 3a, in that number of causes was significantly influenced by the interaction of destructive leadership and low CSE, was supported by Thoroughgood et al.'s (2018) findings that followers with high CSEs identified significantly more causes in response to destructive leadership than those with low CSEs. The authors suggest that this is due to high CSE followers' greater cognitive resources and motivation to engage in sensemaking. Moreover, they may feel more confident in their ability to identify causes and thus feel more motivated to engage in the process.

The first research question in this study sought to uncover the impact of perceived team mental models on the (a) sensemaking and (b) EDM of followers. Specifically, the inquiry aimed to determine whether followers who perceived a shared team mental model would exhibit greater sensemaking and EDM compared to those perceiving an unshared team mental model. The results of the study revealed that certain components of sensemaking, such as problem recognition and the criticality of causes, occurred more frequently among those who perceived their team mental model as shared. Additionally, followers who perceived their team mental model as shared were observed to engage in more robust EDM. These findings may stem from the idea that shared team mental models can improve sensemaking and EDM by enhancing communication, limiting misunderstandings, and encouraging a shared understanding of the task and the team's values and goals (Mathieu et al., 2000).

The primary objective of the second research question in this study was to specifically address the toxic triangle theory, with a focus on examining the interplay between the independent variables of destructive leadership, low CSEs, and perceived unshared team mental models to determine if it would result in the lowest levels of (a) sensemaking and (b) ethical decision making by followers. However, the study's results indicate that neither the sensemaking nor the EDM abilities of followers were significantly impacted by the interaction of all three variables.

Limitations

This study has several limitations that must be acknowledged. One major limitation is the use of a convenience sample of undergraduate students, which may limit the generalizability of the findings beyond this population and industry (Jones, 2016). However, this also allowed for the recruitment of a large number of participants in a relatively short period of time. Additionally,

the use of hypothetical scenarios may have made it easier for participants to provide honest responses without any real-world consequences (Dumas & Reid, 2016).

The use of a low-fidelity situation in the vignette may further limit the generalizability of the findings to more realistic scenarios (Jones, 2016). The use of hypothetical scenarios may not accurately reflect the complex and dynamic nature of real-life leadership situations and may have made it more difficult for followers to feel the actual impacts of a destructive leader's behavior. This may limit the study's ability to capture the full range of leadership behaviors and their effects on followers. There are some positive connotations to the use of low-fidelity situations in the vignette, as they may have allowed for greater experimental control and minimized the influence of extraneous variables (Jones, 2016).

The use of intended ethical decisions rather than actual behaviors may limit the validity of the study's findings, as there may be discrepancies between intended actions and actual behavior (Jones, 2016). Stemming from this is also the concern that an hour long study may not allow for true and accurate findings to emerge, compared to real-life organizations where these events would occur over a long period of time.

Another potential limitation is the fixed order of manipulations. This may introduce order effects and influence observed patterns in the data (Krosnick, 1991). For instance, a participant's response to a measure may be influenced by their prior response to a related measure or treatment, rather than their true feelings or experiences. The fixed order of manipulations in a study may increase the likelihood of such order effects, as participants are more likely to perceive a relationship between the different measures or treatments they are exposed to. While the fixed order of manipulations in the study may have introduced order effects, it also allowed

for the standardized presentation of stimuli to all participants, thus enhancing the internal validity of the study (Krosnick, 1991).

The reliance on self-reported CSE scores may introduce biases in the results, as participants may not accurately represent their true CSE levels (Judge et al., 2003). This may lead to inflated or deflated scores on CSE measures, which could impact the accuracy of results. For example, participant responses could have been influenced by self-serving biases, where individuals may report higher scores on CSE measures to enhance their self-esteem or self-concept (Robins & Beer, 2001). These biases could have restricted the range of the CSE variable, thereby suppressing effect sizes which were generally small in this study. Future studies could examine other methods of assessment, such as observer ratings or physiological measures, to provide a more comprehensive understanding of CSE (Judge & Hurst, 2007).

As this experiment studies team mental models in online experiments, a limitation lies in the ability to assess perceived team mental models, rather than true team mental models. As Bowers et al. (2000) explain, perceived team mental models may not reflect the actual shared understanding that exists within a team. Instead, they may represent individual perceptions of what the team's mental model should be or what individuals believe other team members' mental models are. Thus, while studying perceived team mental models in online experiments can provide valuable insights, some caution should be exercised when interpreting results.

In addition, the study placed focus on only some of the existing team mental model factors identified in the literature, indicating that future research should work to include additional team mental model components to help establish a richer understanding.

Theoretical Implications

In addition to the aforementioned limitations, the findings of this proposed study have several implications for leadership literature. The study contributes to the existing literature on destructive leadership, which is currently limited in nature. Specifically, this research examines destructive leadership in the context of a follower attribute (core self-evaluation) and a contextual variable (perceived team mental models) that could contribute to a toxic triangle phenomenon (Padilla et al., 2007). Some support was seen for the negative joint effects of destructive leadership and low follower CSE on ethical sensemaking, potentially suggesting that high CSE may assist a follower in avoiding negative outcomes stemming from their leader's destructive behavior.

Interestingly, this study advances our understanding of the relationships between team mental models and individual follower ethical behavior. The literature on team mental models has predominantly focused on shared mental models that represent a consensus view among team members, rather than on individual perceptions of mental models (Klimoski & Mohammed, 1994). Furthermore, there is limited research on perceived mental models, which are individual-level assessments of team knowledge structures (Balkundi & Harrison, 2006). This study helps contribute to bridging the gap in the literature on perceived mental models and shared mental models and lead to a more comprehensive understanding of the role of perceived mental models in organizational processes and outcomes.

The focus of this study was to extend the toxic triangle model to the realm of ethical sensemaking and decision making (Brown & Treviño, 2006; Hoogervorst et al., 2010; Thoroughgood et al., 2018). The research aimed to shed light on how certain variables, either alone or in combination with other factors, impacted the ethical sensemaking and decision making of individual followers. More specifically, the study aimed to provide stronger evidence

for the notion that leadership, CSEs, and team mental models could influence ethics and morality, potentially leading to deviant behavior of followers in the workplace (Kluemper et al., 2019; Thoroughgood et al., 2017). Overall, this study contributes to the development of a more comprehensive theoretical framework for understanding ethical sensemaking and decision making, providing new insights into the complex interplay of leadership, CSEs, and team mental models in shaping individual follower EDM in the workplace.

Practical Implications

The findings of this study have significant implications for both society and organizations. For one, this study has practical implications for organizations seeking to enhance sensemaking and EDM in the workplace. Specifically, benefits to these outcomes can be seen by the presence of shared mental models among teams and high CSEs among followers, further pointing to the idea that organizations and leaders should promote and foster shared mental models among their teams and consider the CSEs of their followers (Mathieu et al., 2005).

This research enhances the understanding of team factors that contribute to sensemaking and EDM, which could inform policies and regulations aimed at preventing unethical behavior in various domains of society. Aside from just organizations, creating an open and supportive environment can encourage team or group members to communicate and share their perspectives, facilitating the development of shared mental models (Mathieu et al., 2005). By encouraging team members to work together and promote a shared understanding of goals and objectives, organizations can create a more ethical work environment. Future research could examine if this extends to team level EDM. Organizations may want to invest in team training programs to improve their ability to develop and maintain shared mental models, which could ultimately lead to better decision making processes and more ethical outcomes (Hoogervorst et

al., 2010). This could have a significant impact on the ethical culture of organizations and help prevent unethical behavior.

Moreover, the importance of high CSEs among followers found in this study is supported by Thoroughgood et al. (2012), as higher CSEs can lead followers to overcome some of the negative aspects of destructive leaders and increase their sensemaking abilities in providing a greater number of causes. This underscores the importance of leaders being mindful of their behaviors and their potential impact on followers' sensemaking, particularly those with high CSEs (Kluemper et al., 2019; Meuser et al., 2016).

The practical implications of the toxic triangle model suggest that organizations could benefit from a more comprehensive understanding of the factors that influence sensemaking and EDM in teams. This experimental study on the toxic triangle model provides valuable insights that could inform the design and implementation of interventions to improve these outcomes in the workplace. By addressing destructive leadership, perceived team mental models, and core self-evaluations, organizations can promote more positive outcomes and create a more constructive work environment. Ultimately, this study could have far-reaching implications for the well-being of individuals and the functioning of organizations and society.

Conclusion

This study endeavored to comprehensively address the issue of destructive leadership and its implications in organizations, by utilizing the toxic triangle model to investigate how susceptible followers and conducive environments may interact with it. The findings of this study can be leveraged to assist organizations in preventing important issues from emerging by better understanding how these factors impact essential cognitive processes. Furthermore, this study highlights the need for a deeper investigation of CSEs and team mental models as they

relate to leadership susceptibility and are critical areas that require further research. The results of this study underscore the importance of continued research into destructive leadership, and its relationship to sensemaking and EDM.

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Table 1*Descriptive Statistics and Correlations*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Verbal IQ	28.51	7.35	(.77)										
2. Leader ID	23.54	6.01	.02	(.94)									
3. Conscientiousness	32.38	5.22	.10	.11*	(.77)								
4. Marketing Classes	.09	.38	-.05	.01	.06	--							
5. Problem Rec ^s	2.14	.89	.20**	-.06	.08	.06	(.86)						
6. # of Causes ^s	2.09	.88	.001	.05	.03	.00	.40**	(.86)					
7. Criticality-Causes ^s	2.29	1.05	.17**	-.01	.06	-.05	.56**	.65**	(.85)				
8. Neg. Forecasting ^s	2.09	.78	.24**	-.12*	.11*	-.00	.41**	.25**	.30**	(.83)			
9. Regard for Welfare ^e	1.89	.97	.10	-.10	.06	-.12*	.32**	.21**	.28**	.21**	(.83)		
10. Social Obligations ^e	1.95	1.00	.12*	-.06	.08	-.11*	.33**	.24**	.31**	.22**	.96**	(.82)	
11. Overall Ethicality ^e	2.01	1.05	.11*	-.07	.07	-.13*	.34**	.22**	.30**	.24**	.96**	.97**	(.85)

Note. $n = 356$. Rec. = Recognition; Neg. = Negative; ID = Identification. r_{wg} scores for rated variables 1-10 are displayed along the diagonal. Internal consistency coefficients (α) for variables 11-19 are along the diagonal. ^s Sensemaking variables. ^e Ethical Decision Making variables.

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

Table 2*Univariate Analyses of Covariance and Variance for Sensemaking Variables*

	Problem Recognition				Number of Causes				Criticality of Causes				Negativity of Forecasting			
	<i>F</i>	<i>df</i>	<i>p</i>	η^2	<i>F</i>	<i>df</i>	<i>p</i>	η^2	<i>F</i>	<i>df</i>	<i>p</i>	η^2	<i>F</i>	<i>df</i>	<i>p</i>	η^2
Corrected Model	3.22	8	.00**	.07	1.34	7	.23	.02	3.09	8	.00**	.07	4.93	9	.00**	.11
Intercept	60.00	1	.00**	.15	1986.21	1	.00**	.85	55.71	1	.00**	.14	16.80	1	.00**	.05
Verbal IQ	13.68	1	.00**	.04	-	-	-	-	8.54	1	.00**	.02	24.56	1	.00**	.07
Leader Identification	-	-	-	-	-	-	-	-	-	-	-	-	7.26	1	.01*	.02
Leadership	.28	1	.60	.00	.00	1	.97	.00	.18	1	.67	.00	.13	1	.71	.00
MM	8.38	1	.00**	.02	2.28	1	.13	.01	8.18	1	.01*	.02	.00	1	.98	.00
LHCSES	.25	1	.62	.00	1.19	1	.28	.00	1.25	1	.26	.00	4.51	1	.04*	.01
Leadership * MM	1.71	1	.19	.01	.54	1	.47	.00	.02	1	.90	.00	2.84	1	.09	.01
Leadership * LHCSES	.14	1	.71	.00	4.50	1	.04*	.01	2.26	1	.13	.01	.33	1	.57	.00
MM * LHCSES	.17	1	.68	.00	.00	1	1.00	.00	1.79	1	.18	.01	1.84	1	.18	.01
Leadership * MM * LHCSES	.00	1	.96	.00	.00	1	.95	.00	.30	1	.59	.00	.044	1	.83	.00

Note. *n* = 356. MM = Mental Model; LHCSES = Core Self Evaluation Scores; η^2 = effect size (partial eta squared).

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

Table 3*Univariate Analyses of Covariance and Variance for Ethical Decision Making Variables*

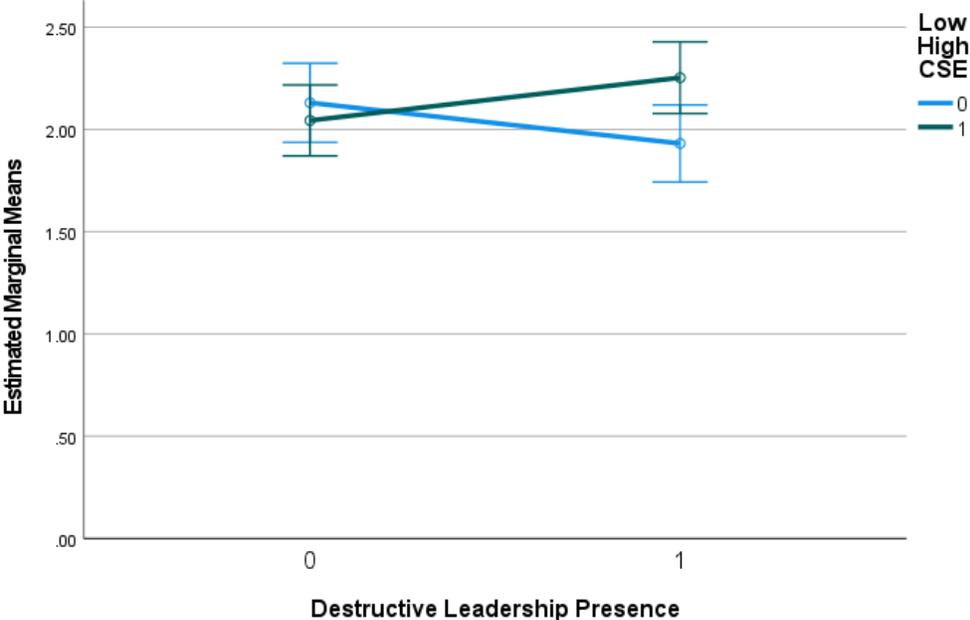
	Regard for Welfare				Social Obligations				Overall Ethicality			
	<i>F</i>	<i>df</i>	<i>p</i>	η^2	<i>F</i>	<i>df</i>	<i>p</i>	η^2	<i>F</i>	<i>df</i>	<i>p</i>	η^2
Corrected Model	1.39	8	.20	.03	1.46	8	.17	.03	1.66	8	.11	.04
Intercept	1300.57	1	.00**	.79	47.20	1	.00**	.12	1265.91	1	.00**	.79
Marketing	4.35	1	.04*	.01	-	-	-	-	5.09	1	.03*	.01
Verbal IQ	-	-	-	-	5.02	1	.03*	.01	-	-	-	-
Leadership	.00	1	.97	.00	.01	1	.94	.00	.28	1	.60	.00
MM	4.61	1	.03*	.01	5.05	1	.03*	.01	4.96	1	.03*	.01
LHCSES	.03	1	.87	.00	.07	1	.79	.00	.01	1	.94	.00
Leadership * MM	.00	1	.97	.00	.13	1	.72	.00	.02	1	.90	.00
Leadership * LHCSES	.03	1	.85	.00	.21	1	.65	.00	.07	1	.79	.00
MM * LHCSES	1.23	1	.27	.00	.95	1	.33	.00	1.50	1	.22	.00
Leadership * MM * LHCSES	.00	1	.97	.00	.45	1	.51	.00	.05	1	.83	.00

Note. *n* = 356. MM = Mental Model; LHCSES = Core Self Evaluation Scores; η^2 = effect size (partial eta squared).

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

Figure 1

Interaction Results of Leadership and Core Self-Evaluation on Number of Causes



Appendices

Appendix A

Innovative Marketing, Inc. Case

General Instructions.

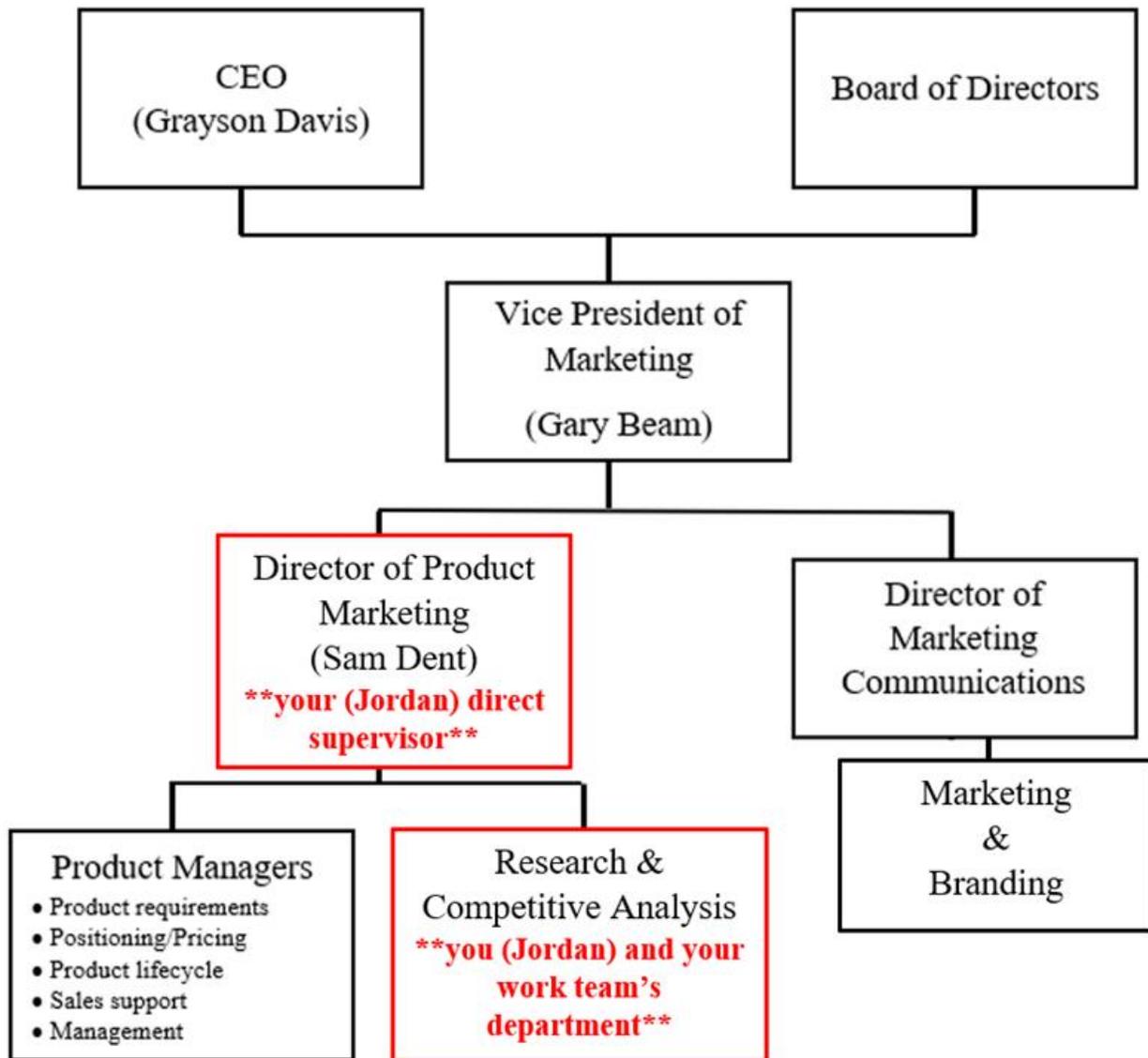
This is a study about problem solving and team dynamics in the field of marketing, and in this study, you will begin by responding to a number of survey questions. You will then take on the role of a research analyst in a marketing firm where you will be given background information before being asked to complete a task. Additionally, you will complete a variety of other measures including questions related to personal demographics. As you read through the materials, **please take your time and answer each question thoroughly** and provide detailed responses where applicable.

Role Description

Now you will be asked to take on the role of a marketing research analyst at a firm named Innovative Marketing, Inc. The below description includes information about your job and what it is like to work at Innovative. **Please keep this information in mind.**

Innovative Marketing, Inc. Case Part 1

You are Jordan Burns, a team member in research and competitive analysis for Innovative Marketing, Inc., a nation-wide organization based in Houston, Texas that specializes in marketing and advertising research. Within Innovative Inc. there are a number of market research departments, each focusing on different types of industries such as pharmaceuticals, telecommunications, travel, and the newest addition, coffee. You take a couple of minutes to look at the detailed flow chart below, that presents information about you and the other Innovative Inc. employees.



Organizational Description

Your duties as a team member on the research and competitive analysis team involve tasks such as monitoring marketing and sales trends, assisting in the development of marketing plans, conducting research on specific market conditions, gathering data on consumers, competitors, and market conditions. In addition, your job involves using this information to prepare and present reports and to measure the effectiveness of advertising campaigns once they are launched. You have been in this position with Innovative Marketing for a little less than a year.

Perceived Team Mental Model Manipulation - SEE APPENDIX B

Your immediate supervisor, Sam Dent, is the director of product marketing (refer back to flow chart, if necessary); Sam works with your team to develop marketing strategies before moderating focus groups for new product campaign launches. Your work team has fairly decent salaries and commission opportunities, thanks to Sam's connections within the industry.

Leader Manipulation - SEE APPENDIX C

One night after wrapping up some details for a project you've been working on, you receive an email from your boss, Sam. The email describes a fairly pressing issue:

From: Sam Dent <sdent@innovative.houston.org>
To: Jordan Burns <jburns@innovative.houston.org>
Sent: 8/10/2022 10:25am
Subject: Great Opportunity

Hi Jordan,

I just got an email from the higher-ups letting me know the CEO of COFFEETECH is looking to do a quick launch of caffeinated fizzy drinks and caffeine lollipops and wants to present the marketing campaign to focus groups and get the products ready for the market within the next 90 days.

Also, I'm not sure if you heard yet, but Gary Beam, the VP of marketing announced his retirement; I have a feeling I will be in the running to be his replacement, and I will need someone to step in for my position. I have been closely following your work, and you have consistently shown that you are ready to grow in the company; I think this campaign can be your chance to show that you can do this job. I want you to take the lead and have Chelsea and Andrew assist in moderating the focus groups, assembling the report, and presenting the results to the CEO of COFFEETECH as soon as possible. You know that there has been a push to gain new clients and we really need this account to sign with us, so we really need to impress the focus groups and get good feedback with one of the campaigns we developed.

Again, I think this is a really good opportunity for you to show everyone that you are ready to move up in the company. Good luck and I will get back with you soon.

Best,
Sam

Sam Dent

*Director, Product Marketing
Innovative Marketing Inc.*

Appendix B

Manipulation of Perceived Team Mental Model

Shared Team Mental Model.

The two main individuals you work with at Innovative Marketing are Chelsea and Andrew. Chelsea and Andrew are both in their second year with the company, and you are often assigned to the same projects. They have been good about sharing information with the team and listening to your ideas since you arrived at Innovative Marketing. When working with them, you feel like you are on the same page, particularly when it comes to understanding project and task goals and how to achieve them. When any of you are having issues or have questions about a work task, you come together and communicate effectively to get the job done. You are comfortable working with both Chelsea and Andrew and feel you could go to them if you had any questions or concerns. When you're assigned to work with them, you're excited and know that these projects are likely to go smoothly.

Unshared team mental model.

The two main individuals you work with at Innovative Marketing are Chelsea and Andrew. Chelsea and Andrew are both in their second year with the company and you are often assigned to the same projects. They have not been very good at sharing information with the team or listening to your ideas since you arrived at Innovative Marketing. When working with them, you feel like you are not always on the same page, particularly when it comes to understanding project and task goals and how to achieve them. When you try to communicate, especially with Chelsea, she seems to be too busy. You are not always comfortable working with Chelsea and Andrew and you don't feel like you can go to them with questions and concerns. When assigned to work with them, you feel a weight on your shoulders and aren't confident that things will run smoothly.

Appendix C

Manipulation of Leader Type

Destructive Leader.

Since starting at COFFEETECH last year, you have heard a few things about your boss, Sam, from coworkers and other employees of the company. For one, Sam is known to be very efficient at getting the job done and has increased sales by over 25%. However, some claim Sam is not always the friendliest to subordinates and other employees, sometimes even taking credit for subordinates' work. Coworkers have complained about Sam playing favoritism, cutting corners, and looking the other way when employees are acting in ways that don't align with the best interest of the organization. It has also been said that Sam is often unpredictable and has gotten loud and overassertive in meetings. Nevertheless, some employees work really well with Sam.

Non-Destructive Leader.

Since starting at COFFEETECH last year, you have heard a few things about your boss, Sam, from coworkers and other employees of the company. For one, Sam, is known to be efficient at getting the job done and has even increased sales by over 25% since starting at Innovative Marketing. Your coworkers and other employees claim Sam is not only friendly but is always respectful and pleasant to work with. Sam is said to be fair to all employees and works hard to ensure a positive work environment that gets the job done and gets it done right, with concern to the best interest of the organization. Many employees work really well with Sam.

Appendix D

Innovative Marketing, Inc. Case Part 2

After going through potential campaigns Sam sent you, you feel certain that one of them is going to be a winner. The new products include 7 different flavors of caffeinated fizzy drinks and 12 flavors of caffeine lollipops. However, as you are going through information about COFFEETECH and the campaign, you see a couple of issues that might be a bit concerning.

For one, it seems that COFFEETECH's coffee beans are sun-grown, which means that they likely use synthetic fertilizers and fungicides. You are not really sure about this, but you think it might not be good for marine life and people that live near water sources in the area. Another concern you have is related to the laborers for the company; it turns out that COFFEETECH is not Fairtrade Certified and there are no labor, environmental, or quality standards that they are required to follow. This is not necessarily going to impact the focus group presentation, but you know that this is potentially an important issue the focus group may bring up, and you want to be able to be honest with them and cannot make any guarantees.

Keeping these issues in the back of your mind, you continue with plans for the first day of focus group research. You reach out to Chelsea and Andrew to let them know of their expected roles and responsibilities for the product launch as well as important dates and deadlines for the product. You are going to mainly be focusing on designing the questions for the focus groups and ensuring the campaign will go smoothly. You tell Andrew he will be conducting the focus group sessions with you and Chelsea is in charge of writing the final focus group report. In the following month, to prepare for the focus group sessions, you ask that both Andrew and Chelsea do some research on caffeinated products and see if they have any suggestions for campaign revisions before the focus group sessions.

After informing Chelsea and Andrew of their roles and responsibilities, you wait a couple of weeks and email them both. You ask them how their research is coming along and if they have any questions or concerns before starting the focus group sessions in a couple of weeks. They both respond shortly after.

Appendix E

Second Manipulation of Perceived Team Mental Model

Shared Mental Model.

From: Chelsea Greer <cgreer@innovative.houston.org>
To: Jordan Burns <jburns@innovative.houston.org>; Andrew Felt <afelt@innovative.houston.org>
Sent: 8/28/2022 9:05am
Subject: Re: COFFEETECH Product Launch – Check In

Hey Jordan and Andrew,

I attached to this email some additional information that may be worth putting in the campaign, but I really feel like our campaign highlights the important aspects of our products. I also had a quick question about the format of the report; do either of you have an example report I can look at to ensure I format mine correctly? I am excited about where this project is headed and to see the final product!

Best,
Chelsea

From: Andrew Felt <afelt@innovative.houston.org>
To: Jordan Burns <jburns@innovative.houston.org>; Chelsea Greer <cgreer@innovative.houston.org>
Sent: 8/28/2022 9:27am
Subject: Re: COFFEETECH Product Launch – Check In

Hi Jordan and Chelsea,

Would either or both of you happen to have some availability in the upcoming week to meet with me? I had some potential ideas for the campaign and focus group sessions, but I wanted to run it by you both. I also had a question about another project I am working on that I could use insight on. Chelsea, I attached with this email some example reports I have worked on in the past that should be of help. If you need anything else, please let me know.

Regards,
Andrew

After receiving these emails from your team, you feel good about where your team is and feel you are all on the same page. You, Chelsea, and Andrew keep working on your assigned tasks in preparation for the focus groups.

Day one of focus group research comes and everything goes without a hitch. You and Andrew spent the next six weeks moderating eight different focus groups and sent all of the information to Chelsea who then compiled it into a report you will present to the CEO of COFFEETECH. Once Chelsea finished the report, she sent it to you, giving you five days to prepare before meeting with the heads of COFFEETECH. While reading over the report, you are not quite sure how you feel about its content.

Unshared Mental Model.

From: Chelsea Greer <cgreer@innovative.houston.org> To: Jordan Burns <jburns@innovative.houston.org> Sent: 8/28/2022 11:05am Subject: Re: COFFEETECH Product Launch – Check In

Hey Jordan,

I thought I was only in charge of writing the final report for the focus group sessions, so I don't have any additional research to present to you right now. I have been pretty busy with my other research projects, so it may a few more weeks until I can get some additional information to you. I haven't gotten to talk with Andrew to see where he's at yet but hopefully he has something for the campaign.

Best,
Chelsea

From: Andrew Felt <afelt@innovative.houston.org> To: Jordan Burns <jburns@innovative.houston.org> Sent: 8/28/2022 2:06pm Subject: Re: COFFEETECH Product Launch – Check In

Hi Jordan,

I did not find any additional information I would deem pertinent to the campaign. I do, however, have some concerns about the potential thoroughness and overall quality of the report Chelsea will write; this may be something for you to keep in mind. Also, I know you already provided me the dates for the focus groups, but could you send them again because I cannot find that email and forgot to write them down.

Regards,
Andrew

After receiving these emails from your team, you are quite frustrated; however, you understand that the show must go on. Regardless of Andrew's thoughts, you decide to keep Chelsea assigned to writing the final report and Andrew to attending the focus group sessions.

Day one of focus group research comes and, as you anticipated, you and your team are experiencing some issues. Unfortunately, Andrew was unable to attend all of the focus group sessions because he double booked meetings for some of the days; that meant you had to run most of them by yourself, so you decide to give Andrew the task of compiling the session notes and sending them to Chelsea to write the final report. Chelsea was supposed to provide you the report five days prior to the presentation meeting with the CEO of COFFEETECH, but she was busy and did not end up finishing it until today, only two days before you have to give your presentation. You quickly skim the report and are not quite sure how you feel about its content.

Appendix F

Focus Group Summary Report and Task Description

FOCUS GROUPS - EXECUTIVE SUMMARY REPORT

With the growing demand for fun and innovative twists on products and flavors, COFFEETECH is branching out from a simple coffee house to a line of caffeinated fizzy drinks and lollipops in the hope of dominating a new corner of the market that has yet to be targeted. COFFEETECH will capitalize on specific locations' proximity to local college campuses by launching products in college towns to take advantage of the adventurous and energetic populations that tend to gravitate to those areas.

Project

The purpose of this focus group research was to test attendees' reactions to the marketing campaign of the new line of products being offered by COFFEETECH. Attention was given to the fun and unique tastes of all the new products and details were provided regarding the locations where the new product would be offered. The new flavors and concepts were highlighted to showcase the individuality of each fizzy drink and lollipop as a way of promoting the new products.

Group parameters

A total of eight focus groups were moderated prior to the launch of COFFEETECH's new products. Across the eight groups were a total of 184 attendees, 99 women ages 18-59, 67 men ages 25-64, 9 non-binary ages 18-36, and 9 that preferred to not disclose their gender. All are coffee and caffeinated beverage drinkers and are interested in new products that may hit the market next year.

Findings

The majority of feedback was related to concern over the appearance of COFFEETECH straying away from coffee and quality going down. Additionally, phrases like "focusing on new products will take away attention from their coffee focus" and "this is going to make shops busier than they already are, and it will take me forever to get anything" were used. There were concerns about the origin of the beans and possible chemicals used and consequential concerns about marine life and birds near water. A few individuals were concerned about labor standards and wanted to make sure children are not picking the beans used for COFFEETECH products.

On a positive note, participants loved the taste of the new fizzy drinks and lollipops. One attendee stated: "the new drinks taste even better than any energy drink I've had." There was high satisfaction about the attention devoted to customer experience and that COFFEETECH is a solid business with a promising future. Overall, the significant majority across all eight focus groups love the products and believe they are creative, exciting, and are going to be very popular when they hit the market.

Shortly after reading through the focus group report, you receive an email from your boss, Sam:

From: Sam Dent <sdent@innovative.houston.org>
To: Jordan Burns <jburns@innovative.houston.org>
Sent: 9/23/2022 8:07am
Subject: Great Opportunity

Hey Jordan,

I'm just checking in on you and making sure the presentation is going to be ready on schedule. I'm sure the focus groups went well and they loved the products. The CEO loves this campaign and is ready to see your presentation and hopefully launch as planned. Send me a draft of your plan to summarize the results from the focus group first thing in the morning. I'm sure it's great, but I want to give it a once over to make sure this account moves forward.

Can't wait to see what you come up with.

Best,
Sam

Sam Dent
Director, Product Marketing
Innovative Marketing Inc.

This email adds pressure in more ways than one. Not only do you have to decide how you are going to present the focus group results when you aren't quite sure what you want to include in the presentation.

Few people in the focus groups brought up concerns related to using fertilizers and fungicide or the lack of labor or quality standards adhered to. No one really seemed to care about the things you thought they would worry about. However, you know you have other information that nobody considered that could potentially sway their opinions about the product. You are not quite sure what you should do about this or if you should tell anyone. Your boss, Sam, put a lot of trust in you for this project and you want to prove yourself but with these results, you question the best direction to go with your presentation. You take a minute to consider all the information before deciding how to move forward.

Appendix G

Ethical Decision Making Task

We would now like you to think through any problems in this situation and the possible outcomes related to it. Please respond to the following questions **fully and to the best of your ability**. *Be sure to keep in mind the dynamics of your leader and work team in responding to the following questions:

1. What, if anything, do you see as a problem in this situation?
2. List and describe the causes of the problem.
3. Are there any important factors or challenges to consider in this situation?
4. What are some possible outcomes related to the information you present to the CEO of COFFEETECH? List as many as you can think of.
5. What might you consider when deciding how to present the results from the focus groups? What information will you choose to share and why?
6. Explain in detail your marketing plan for COFEETECH. What was the rationale for your decisions in the marketing plan?

Appendix H

Manipulation Checks

Leader Manipulation Scale.

Below are several statements about your (Jordan's) direct supervisor, Sam Dent, with which you may agree or disagree. Using the response scale below, indicate your agreement or disagreement with each item by choosing the corresponding option for that item. (r) = reverse coded

1-Strongly Disagree; 2-Disagree; 3-Neutral; 4-Agree; 5-Strongly Agree

1. I perceived my leader as taking advantage of others. (r)
2. I perceived my leader as self-serving. (r)
3. I perceived my leader as wanting to empower others.
4. I perceived my leader as able to perform well. (control)
5. I perceived my leader as serving the best interests of the group.
6. I perceived my leader as impulsively aggressive. (r)
7. I perceived my leader as self-controlled.
8. I perceived my leader as having the best interest of the organization in mind.
9. I perceived my leader as disregarding toward the feelings of others. (r)

Team Mental Model Manipulation Scale.

Below are several statements about your (Jordan's) work team with which you may agree or disagree. Using the response scale below, indicate your agreement or disagreement with each item by choosing the corresponding option for that item.

1-Strongly Disagree; 2-Disagree; 3-Neutral; 4-Agree; 5-Strongly Agree

1. My team has a shared goal for various project tasks
2. My team communicates with other teammates while performing tasks
3. My team consistently demonstrates effective listening skills
4. My team shares information and individual team members do not keep information to themselves
5. My team understands their roles and responsibilities for doing various team tasks
6. My team understands how they can exchange information for doing various team tasks
7. My team solves problems that occur while doing various team tasks
8. There is an atmosphere of trust in my team
9. My team creates a safe environment to openly discuss any issue related to the team's success
10. My team has a positive team climate