A NEUROCOGNITIVE PERSPECTIVE ON DARK LEADERSHIP AND EMPLOYEE
DEVIANCE: INFLUENCES OF MORAL SENSITIVITY AND THE SELF-CONCEPT

A Dissertation

Presented to

The Graduate Faculty of The University of Akron

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

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May, 2014
A NEUROCOGNITIVE PERSPECTIVE ON DARK LEADERSHIP AND EMPLOYEE DEVIANCE: INFLUENCES OF MORAL SENSITIVITY AND THE SELF-CONCEPT

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ABSTRACT

The influence of dark leadership on subordinate unethical behavior is often attributed to the subordinates’ desire to seek revenge. However, the influence of nonconscious processes in this relationship has not yet been addressed by the literature. Using a dual processing theory of morality, I argued that by suppressing subordinates’ self-concept, dark leaders can change how subordinates perceive and respond to moral events. Consistent with this idea, results found that subordinates formed implicit self-associations to a pattern of dark attributes when their self-concept was inhibited by dark leadership. Forming implicit self-associations to dark attributes in turn, affected subordinates’ sensitivity to perceiving moral information and their behavior to an ethical task in a lab setting. These results were obtained using electrophysiological (EEG) and traditional social-cognitive measures. Overall, these results provide evidence for dual processing theory of morality, and they challenge the dominant perspective for relating dark leadership to employee unethical behavior. Implications for interdisciplinary research, the self-concept, and ethical leadership theory are also addressed.
ACKNOWLEDGEMENTS

This dissertation would not have been possible if it were not for the support and guidance that I had received from my family, closest friends, and colleagues. As such, I would like to acknowledge Dr. Bob Lord, Chris Petsko, Marc Tolbert, Houston Southard, Josh Pollock, Peter Dinh, Mike Plybon, and Keith Leavitt for their guidance and continued support during the course of this project. I would also like to acknowledge my dissertation committee, Dr. Bob Lord, Dr. Kevin Kaut, Dr. Philip Allen, Dr. Rosalie Hall, and Dr. Steven Ash, for this project would not have been possible if it were not for their devotion to this project.
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CHAPTER I

STATEMENT OF THE PROBLEM

*Leadership* refers to a leader’s ability to influence groups of individuals to contribute willingly to shared goals (Kaiser, Hogan, & Craig, 2008; Yukl, 2002). Consistent with this definition, a significant portion of the leadership literature has been dedicated to understanding how leaders constructively shape the direction and performance of their organization. Only recently have scholars paid attention to *dark leadership*, which refers to a class of leader behaviors that undermine the legitimate interest of the organization and its members (Einarsen, Aasland, & Skogstad, 2007; Tepper, 2000, 2007; Thoroughgood, Tate, Sawyer, & Jacobs, 2012).

Attention to dark leadership is critical for several reasons. First, it has been estimated that the cost of dark leadership exceeds over $1 billion dollars annually, spent in personnel, property, and legal expenses (Tepper, Duffy, Henle, & Lambert, 2006). Second, dark leaders are known for using power in an oppressive vindictive fashion, thereby lowering employee job satisfaction (Thoroughgood et al., 2012), employee psychological health (Tepper, 2000; Wu & Hu, 2009), affective commitment (Aryee, Chen, Sun, & Deborah, 2007), voice and work performance (Burris, Detert, & Chiaburu, 2008; Detert & Treviño, 2010; Rafferty & Restubog, 2011; Xu, Huang, Lam, & Miao, 2012). Third, dark leadership leads to increased employee unethical conduct (e.g., Detert, Treviño, Burris, & Andiappan, 2007; Liu, Kwan, Wu, & Wu, 2010; Mitchell & Ambrose, 2007; Tepper, 2000; Tepper, Carr, Breaux, Geider, Hu, & Hua, 2009;
Tepper, Henle, Lambert, Giacalone, & Duffy, 2008), which is also estimated to cost U.S businesses an upwards of $1 trillion dollars annually (Association of Certified Fraud Examiners, 2012). Given the significant social and economic costs that are associated with dark leadership and employee unethical conduct, research that investigates how one leads to the other is greatly needed (Tepper, 2007).

Broadly, employee unethical behavior refers to actions that are detrimental to organizations, stakeholders, and/or organizational members. It can include sabotaging equipment, stealing company resources, and physically or verbally abusing co-workers and customers (Kish-Gephard, Harrison, & Treviño, 2010; Mitchell & Ambrose, 2007). To date, scholars have invoked many different theoretical perspectives to account for the positive relationship that is typically observed of dark leadership with employee unethical behavior (Tepper, 2007). These perspectives are summarized in Table 1, and they include interactional justice theory (Johnson & Lord, 2010), social exchange theory (e.g., Aryee et al., 2007; Liu et al., 2010; Mitchell & Ambrose, 2007), psychological distress (Restubog, Scott, & Zagenczyk, 2011), and emotions research (Yang & Diefendorff, 2009). However, underlying these theoretical perspectives is the belief that an employee’s desire to intentionally seek revenge motivates his or her unethical conduct (Tepper, 2007). Yet, the emphasis on revenge has been voiced by numerous researchers as being too narrow of a theoretical approach (Tepper, 2007; Tierney & Tepper, 2007), and scholars may need to “think outside the box” to identify other mechanisms by which dark leaders affect the morality their subordinates.
I propose that advancing the dark leadership literature will require that scholars pay attention to both reflective (i.e., conscious and deliberative thinking) and reflexive (i.e., unconscious and automatic) moral processes as described in dual processing moral theory (Haidt, 2001; Reynolds, 2006). Although the majority of the dark leadership literature focuses on reflective moral processes, I argued that the self-concept is an influential nonconscious determinant of subordinate (un)ethical behavior. In brief, the self-concept refers to an extensive memory structure that organizes the knowledge that an individual has accumulated into elemental self-aspects (e.g., roles, identity). Each self-aspect can in turn, guide a person’s decisions and behaviors in a contextually sensitive manner (Lord & Brown, 2004; McConnell, 2011; McConnell, Shoda, & Skulborstad, 2012). However, it has been shown that the self-concept can become deactivated in certain contexts (e.g., experiencing threats; Gusnard, 2005; Gusnard, Akbudak, Shulman, & Raichle, 2001), which allows the self-concept to integrate the behavioral attributes that had been observed in others into its structure (Gabriel & Young, 2011; Kaufman & Libby, 2012; Slotter, Lucas, Jakubiak, & Lasslett, 2013). Central to this study is the idea that a dark leader’s abusive behavior can inhibit a subordinate’s self-concept. In turn, this event can cause the subordinate to integrate several of the dark leader’s attributes into his or her own self-concept, which will shape how the subordinate perceives and responds to a subsequent moral event.
Table 1: Overview the processes and outcomes of current theoretical perspectives in the dark leadership literature

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<thead>
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<th>Theory</th>
<th>Organizational outcome</th>
<th>Level of consciousness</th>
<th>Direction of influence</th>
<th>Self-Activation</th>
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<td>Ethical behavior</td>
<td>Conscious &amp; Non-conscious</td>
<td>Top-down &amp; Bottom-up</td>
<td>Active</td>
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<td>Leader-member exchange (LMX)</td>
<td>Ethical behavior</td>
<td>Conscious</td>
<td>Top-down</td>
<td>Active</td>
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<tr>
<td>Interactional Justice/Social exchange theory</td>
<td>Ethical behavior</td>
<td>Conscious</td>
<td>Top-down</td>
<td>Active</td>
<td>Revenge/retaliation</td>
<td>Aryye et al. (2007); Detert et al. (2007); Liu et al. (2010); Mitchell &amp; Ambrose (2007); Rafferty &amp; Restubog (2011); Tepper et al. (2001, 2009)</td>
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<tr>
<td>Psychological distress</td>
<td>Ethical behavior</td>
<td>Conscious</td>
<td>Top-down failure</td>
<td>Active</td>
<td>Revenge/retaliation</td>
<td>Restubog et al. (2011)</td>
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<tr>
<td>Psychological Attachment &amp; Detachment /commitment</td>
<td>Ethical behavior</td>
<td>Conscious</td>
<td>Top-down</td>
<td>Active</td>
<td>Revenge/retaliation</td>
<td>Burris et al. (2008); Tepper et al. (2008)</td>
<td></td>
</tr>
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| II. Sensemaking approaches to morality | Experience Taking | - | Non-conscious | Bottom-up | Deactivated | Integration of other’s traits and characteristics | Gabriel & Young (2011); Kaufman & Libby (2012) |

| III. Alternate theories to experience taking | Traditional prime-to-behavior approach | - | Non-conscious | Top-down | Active | Self-concepts | Anderson & Chen (2002); Shah (2003) |
| Goal contagion | - | Non-conscious | Top-down | Active | Goals | Aarts, Di Jkerhuis, & Dik (2008) |
This study advances the dark leadership literature in at least five ways. First, this study examined whether nonconscious processes are important in understanding the relationship of dark leadership with employee unethical behavior. To date, the influence of nonconscious processes has not been considered by dark leadership research as this literature emphasizes deliberative moral processes, such as seeking revenge (Tepper, 2007; Tierney & Tepper, 2007). However, nonconscious moral processes are important in moral decision making and behavior as demonstrated in research that shows how moral judgments can be affected by experiencing subtle embodied cues (Schnall, Benton, & Harvey, 2008; see also Isanski & West, 2010). Other studies show that implicit self-identities (i.e., individual, relational, collective self-identity) can predict unethical and ethical behavior (e.g., Johnson & Lord, 2010; Johnson & Saboe, 2011; Johnson, Venus, Lanaj, Map, & Chang, 2012; Reynolds, Leavitt, & DeCelles, 2010). Because both conscious and nonconscious moral processes are involved in moral decision making and behavior (Dinh & Lord, 2013), formal arguments that only consider the effects of deliberative moral processes would not provide a comprehensive explanation of dark leadership effects on the (im)moral conduct of others.

Second, research seldom investigates the role of the self-concept in moral decision making and behavior, even though its significance is evident when the self is inhibited or suppressed. For example, Aquino and Douglas (2003) demonstrated that when people experienced self-threat (e.g., feeling low self-worth), they became less concerned with behaving unethically as these behaviors allowed them to regain control of their environment. The influence of the self-concept on moral decision making and behavior is also revealed by neurological research showing how cortical lesions in default neural networks (brain systems that process one’s sense of self) can impair a person’s ability to think and act morally (Miller, Sinnott-
Third, leadership research often focuses on understanding how leaders can influence moral decision making and behavior using top-down processes, such as when leaders convey moral ideals, rules, and goals to shape the moral judgments of others (e.g., Howell & Shamir, 2005; Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009; Tucker, Turner, Barling, & McEvoy, 2010; Schaubroeck, Hannah, Avolio, Kozlowski, Lord, et al., 2012; Zhu, May, & Avolio, 2004). However, the importance of micro processes, such as the content and the active representation of the self-concept, may be missed as they influence moral processing in a bottom-up (vs. top-down) manner. In this study, the self-concept was assessed using a combination of traditional social-cognitive measures and electrophysiological measures. Specifically, self-activation measures and the implicit association task (IAT) were used to assess the accessibility of the self-concept. Additionally, EEG was used to assess the deactivation of default neural networks that maintain the self when at rest (Gusnard, 2005; Gusnard et al., 2001; Mantini, Perrucci, Gratta, Romani, & Corbetta, 2007; Sheline, Barch, Price, Rundle, Vaishnavi, et al., 2009). Together, these assessments provide insight for how bottom-up micro processes can nonconsciously influence moral decision making and behavior.

Fourth, the morality literature often conceptualizes moral and immoral behavior as being guided by dispositional values that are stable over time (Aquino & Reed, 2002). However, moral sensemaking perspectives have shown that a person’s behavior also depends on how they view and make sense of moral events (Rai & Fiske, 2011; Sonenshein, 2007; Thiel, Bagdasarov, Harkrider, Johnson, & Mumford, 2012). By showing how a subordinate’s perception to moral
events can be affected by dark leadership, this study demonstrates the significance of pre-attentional perceptual processes on moral and immoral behavior.

Last, dark leadership research has depended on correlational research methods (Tepper, 2007) that preclude conclusive cause-effect reasoning. To advance the literature, this study experimentally manipulated dark leadership to examine its effects on a subordinate’s self-concept and (im)moral behavior. Specific to this study, a one-factor (dark/supportive leader) between-subjects design was implemented that exposed each participant to a leader who was either verbally abusive to or supportive of the participant. Each participant also had the opportunity to participate in a lab task that assessed his or her ethical behavior.

To foreshadow the hypotheses of this study, Figure 1 illustrates the key steps that relate dark leadership to employee unethical behavior. This model shows that subordinates will form nonconscious self-associations to their dark leader’s attributes when their self-concept has become deactivated by dark leadership. This process is also believed to impact how subordinates will perceive and behave to moral events.

Summary

Leadership research seldom investigates dark leadership effects even though this type of leadership is costly to organizations and society (Detert et al., 2007; Tepper, 2000, 2007; Tepper et al., 2008; Thoroughgood et al., 2012). To date, the literature has attributed the effects of dark leadership with employee unethical behavior to employees’ desire to seek revenge (Tepper, 2007). However, this perspective neglects the significance of nonconscious moral processes, and it may interfere with the field’s ability to formulate more comprehensive theory.
In the following chapter, I will begin with a literature review that summarizes the current theory that relates dark leadership with employee unethical behavior. This chapter also includes my rationale and hypotheses. As shown in path B of Figure 1, I argue that by deactivating a subordinate’s self-concept, dark leaders can affect the subordinate’s sensitivity to moral issues and moral behavior. As described in the next chapter, I draw an important distinction between path A and path B in Figure 1. Although path B operates reflexively and nonconsciously, people are fully conscious of their moral thought processes in path A. In Chapter 3, I will describe the measures and procedures that were used in this study, and in Chapter 4, I will describe the results and conclusions that were obtained from this study. Finally, Chapters 5 and 6 will provide the study’s implications for future theoretical development, research, and practice, as well as an executive summary that details the study’s overall findings.
Tyrannical Dark Leadership

Reflective Moral Processing Pathway

Moral Recognition → Moral Judgment → Moral Intention → (Un)ethical Behavior

Path A: Level considered by the current literature

Path B: Level considered in the current study

Self-Concept (De)activation

Self-Associations Formed to Dark Attributes → Moral Sensitivity

Reflexive Moral Processing Pathway

Figure 1: Conceptual model of dark leadership effects with employee (un)ethical behavior
CHAPTER II

LITERATURE REVIEW

Chapter 1 described how the relationship between dark leadership and employee unethical behavior has been approached from multiple theoretical perspectives, which were summarized Table 1. This table also identified several literary domains that had been overlooked by the extant field. As this table showed, prior works strongly emphasized how rational processes accounted for the effects of dark leadership on employee unethical behavior. However, the influence of the self-concept and other nonconscious processes have not been explored in this relationship (columns 3 & 5, Table 1). The current chapter reviews the dark leadership literature with a specific emphasis on employee unethical behavior. As indicated at the top of the first section in Table 1, current perspectives assume that moral decision making and behavior are guided by stable values, which I refer to as an *instrumental, value-based* approach to dark leadership. I also identify the limitations of this approach in the following sections.

A Value-Based Approach to Dark Leadership and Employee Unethical Behavior

In an influential review on dark leadership, Tepper (2007) acknowledged that the dark leadership literature focused primarily on how calculative, revenge-based cognitions (i.e., thoughts of returning harm to an abusive source) were responsible for employee unethical
behavior. Using the justice literature as an example, scholars believed that by violating social justice rules (e.g., interactional, procedural, or distributive\(^1\)), supervisors were effectively informing their subordinates that they were not valued by either their supervisor or their organization (Aryee et al., 2007; Liu et al., 2010; Tepper, 2000, 2007; Tierney & Tepper, 2007). It was further believed that subordinates would retaliate as a way to restore social justice in these exchanges (Skarlicki, van Jaarsveld, & Walker, 2008; Tepper, 2000).

The belief that dark leadership affects employee unethical behavior through acts of revenge is also central in other works that stand apart from the justice literature. For example, research has considered how the need to restore power motivates victims of abuse to retaliate against their abusive leader, or to harm innocent bystanders (e.g., one’s spouse; Restubog et al., 2011). Other works have considered how the quality of subordinates’ leader-member exchange relationship (Shapiro, Boss, Salas, Tanirala, & Von Glinow, 2011; Xu et al., 2012), their proclivity for reciprocating poor treatment (Mitchell & Ambrose, 2007), their personal values (Liu et al., 2010; Shao, Resick, & Hargis, 2011), their capacity to control negative emotions (Yang & Diefendorff, 2009), and the extent that subordinates are conscious of the consequences of their actions (Tepper et al., 2001), can amplify or mitigate revenge-based cognitions.

It is important to note that the literature’s emphasis on deliberative cognitions is consistent with the dominant argument in moral psychology (Jones, 1991; Kohlberg, 1981; Rest, 1986; Rest, Narvaez, Bebeau, & Thoma, 1991; Street, Douglas, Geiger, & Martinko, 2001), which is that moral (or immoral) behavior is a product of rational decision making. This rational

---

\(^1\) In these exchanges, interactional justice refers to the perceived social sensitivity of interpersonal communication; procedural justice refers to the perceived fairness of the decision making process; and distributive justice refers to the perceived fairness of decision outcomes, such as equality (Scott, Colquitt, & Paddock, 2009).
approach to moral processing is best illustrated by Rest’s (1986) four-component model of morality as shown in Figure 2. This figure shows that moral behavior emerges sequentially, beginning with the conscious recognition of a moral event. Moral recognition in turn, facilitates the process of forming a moral judgment and the intention to behave morally.

Figure 2: Rest’s (1986) four-component model of moral processing

Central to rational theories of morality is the idea that people rely on a set of stable moral values to guide their moral decisions (Aquino & Reed, 2002; Thiel et al., 2012). Importantly, this value-based approach to moral decision making implies that when people do not have strong moral values or a moral identity, it may be more difficult for them to monitor their moral behavior (e.g., Gino, Schweitzer, Mead, & Ariely, 2011; Shao et al., 2011; Skarlicki et al., 2008). However, this perspective is limited in two respects. First, research suggests that moral judgment and ethical decision making are susceptible to automatic nonconscious processes (Haidt, 2001; Reynolds, 2006; Reynolds et al., 2010). For example, research on embodied cognitions and emotions demonstrates how ethical decisions and behaviors can be influenced by subtle contextual cues like the attractiveness of another’s face (Tsukiura & Cabeza, 2010), social mimicry (Ashton-James, van Baaren, Chartrand, Decety, & Karremans, 2007), ambient darkness (Zhong, Bohns, & Gino, 2010), and even odors (Schnall et al., 2008).

Second, the belief that unethical behavior results from failed ethical values has been challenged by scholars who argue that the meaning of morality (and what is moral) is socially
defined. For example, Ginges et al. (2011) described how social groups can condone seemingly immoral actions, such as terrorism, when these actions protect the groups’ sacred values and norms (see also Dehghani, Sachdeva, Ekhtiari, Gentner, & Forbus, 2010). Similarly, Rai and Fiske (2011) argued that morality is defined by peoples’ social-relational context. For instance, the morality of those who identify strongly with an authority figure (e.g., a leader) may be guided by a hierarchy motive, where actions that convey deference and respect to the leader are morally acceptable. Likewise, individuals who are guided by a unity motive may perceive actions that protect in-group members from harm (e.g., opposition to sacred values) as morally justified.

Importantly, each moral motive does not define moral rights from wrongs. Rather, it bases moral responses on the fulfillment of the obligations that are defined by the nature of a social relationship (Rai & Fiske, 2011). For instance, hierarchy motives can inspire blind obedience, whereas unity motives can justify in-group (e.g., honor killings to preserve the ‘purity’ of social groups) and out-group violence (e.g., ethnic cleansing, revenge against outside threats; Rai & Fiske, 2011). This approach to understanding moral decision making and behavior is referred to as a sensemaking approach to morality (Thiel et al., 2012), and it has important assertions when understanding the nexus between dark leadership and subordinate unethical behavior.

In summary, a value-based perspective on morality views ethical failings, such as acts of revenge, as being caused by deficient moral values. However, a moral sensemaking perspective (Table 1, section 2) implies that dark leaders can redefine the moral standards that are used by their subordinates to guide their (im)moral actions. As such, the ability of subordinates to perceive whether or not an event is morally-relevant can be malleable, explaining why people can express variability their moral decisions and actions (Conway & Peetz, 2012; Klotz & Bolino, 2013; Leavitt, Reynolds, Barns, Schilpzand, & Hannah, 2012; Sachdeva, Iliev, & Medin,
2009). Such variability has been demonstrated in a notable study by Leavitt et al. (2012), who showed how the saliency of certain identities can broaden or narrow the range of social groups that people were willing to behave morally towards. This variability is also illustrated in the literature on *moral licensing*, which shows how thinking about past moral behaviors can encourage subsequent immoral responses (Conway & Peetz, 2013; Klotz & Bolino, 2013; Sachdeva et al., 2009).

This study argues that dark leaders can influence their subordinates’ sensitivity to moral issues by inhibiting subordinates’ self-concept. This perspective is developed further in the following section as I review evidence for the significance of the self-concept in moral decision making and behavior. In this section, I will also describe the neurological representation of the self that may indicate when the self-concept is inactive. Last, I will describe how integrating neurological and psychological understandings of the self can offer new insight on the effects of dark leadership on moral processing.

The Effects of Dark Leadership on the Self-Concept

McConnell (2011) conceptualized the self-concept as an internal memory structure that stores information concerning different aspects of one’s self. Notably, each self-aspect contains different goals, values, emotions, etc., that are developed over time and are acquired with experience (Lord & Hall, 2005; McConnell et al., 2012). Structurally, the self-concept can be described as a large associative memory network with interconnections that link together many different self-aspects. When understood as a densely connected network, an individual’s self-concept can influence his or her behavior and decisions implicitly (through spreading activation among his or her self-aspects), as well as explicitly, when he or she becomes conscious of a certain self-aspect (McConnell et al., 2012). Because different self-aspects may become active in
different contexts (McConnell, 2011; McConnell et al., 2012), they are also said to be context-dependent, which allows an individual’s behavior to flexibly change as his or her goals and motivations are variably accessed (Andersen & Chen, 2002; Hannah, Woolfolk, & Lord, 2009; LeBoeuf, Shafir, & Bayuk, 2010; McConnell, 2011; Mischel & Shoda, 1995).

The self-concept is relevant in moral processing as shown by research that demonstrates how it can guide moral thinking and behavior. Aquino and Reed (2002) argue for instance, that people characterized by a strong **moral identity**, a self-aspect that includes the attributes: **honesty, fair, caring, helpful, compassionate, generous, hardworking, and kind**, are more likely to conduct themselves in an ethical manner across a variety of situations. A similar concept has been advanced by Hannah and Avolio (2011) who argue that people defined by **ethos** (inner strength) and **moral potency** (moral efficacy, courage, ownership), are more likely virtuous as they have the capacity to endure the challenges that accompany ethical dilemmas. The significance of the self-concept in moral thought and action, as implied by moral psychology, is also demonstrated in neurocognitive-based research that shows how the structural integrity of long-distance neuronal networks strongly predicts peoples’ ability to reason and behave morally (Miller, Sinnott-Armstrong, Young, King, & Paggi, 2010; Pujol et al., 2011; Weber et al., 2008).

In the last decade, advances in neurocognitive research have led to the discovery of specific cortical regions that maintain the active representation of the self when at rest. Referred to as **default neural networks** or **resting state networks**, these regions include the ventral and dorsal medial pre-frontal cortex (mPFC) and the posterior cingulate cortex (Gusnard, 2005; Gusnard et al., 2001; Mantini et al., 2007; Sridharan, Levitin, & Menon, 2008). Functionally, the dorsal and ventral mPFC are associated with unique brain processes and remain neurologically distinct even at rest (Fox, Corbetta, Snyder, Vincent, & Raichle, 2006). For example, the dorsal
mPFC is concerned with “explicit representations of states of self” and it exhibits increased neural activity during self-referential or introspectively oriented activity. In contrast, the ventral mPFC is associated more with emotional or affective processing (Dolcos, Lordan, & Dolcos, 2011; Pollock, Khoja, Kaut, Lien, & Allen, 2012), and it shows reduced neural activity during cognitively intensive tasks (Gusnard et al., 2001). However, because the dorsal and the ventral mPFC show spontaneous neural activity when at rest, they are both necessary in the neural representation of the self; although each may show different neural activation patterns during tasks that involve self-referential mental activity (Gusnard et al., 2001).

Neurologically, electrophysiological activity among brain regions associated with resting state networks is characterized by stable patterns of low-amplitude gamma wave frequencies (30-70 Hz; Chen, Feng, Zhao, Yin, & Wang, 2008; Jerbi, Vidal, Ossandon, Dalal, Jung, et al., 2010; Mantini et al., 2007) that are maintained by systems of attractors (Deco & Jirsa, 2012). Attractors are created by stable firing patterns from excitatory and inhibitory neurons (i.e., neuronal spiking and activity in NMDA, AMPA, and GABA synapses). Due to the interconnectivity of the brain however, systems of attractors originating from different brain regions can interact, resulting in the emergence of highly structured spatiotemporal patterns that characterize the brain in a state of equilibrium (Deco & Jirsa, 2012; Palva, Zhigalov, Hirvonen, Korhonen, Linkenkaer-Hansen, et al., 2013). Therefore, spontaneous brain activity generated at rest does not reflect random-noise. Instead, these patterns represent the brain in its resting state. It is important to note that these spatiotemporal patterns may change when extreme intrapersonal or interpersonal events disrupt and remove the system from a state of equilibrium (Deco & Jirsa, 2012; Palva et al., 2013). During these events, the dynamics among multiple information processing systems

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would have been affected, thereby changing these resting state spatiotemporal patterns until the system “resets” and returns to a new equilibrium state (Deco & Jirsa, 2012; Palva et al., 2013).

Neurological research on the self-concept is useful for explaining when and how the self can become inactive. Neurocognitive research has shown for instance, that when concentrated attention is required, such as when people are processing novel or difficult tasks, or when they are exposed to threatening or anxiety-provoking situations, resting state networks can become inactive as cognitive resources are reallocated to peripheral sensory systems (Fales, Barch, Burgess, Schaefer, Mennin, et al., 2008; Gusnard, 2005; Sheline et al., 2009; Sridharan et al., 2008; Zhao, Wang, Li, Hu, Xi, et al. 2007). Neurologically, the presence of strong attractors (such as from experiencing extreme stimuli) can disrupt resting state spatiotemporal patterns as shown by effects on gamma wave frequency amplitudes (Deco & Jirsa, 2012).

The prior paragraphs describe two ways of understanding the self-concept. From a neurological perspective, the self-concept is maintained by resting state networks that include the dorsal and ventral mPFC, which may deactivate in situations that are threatening or induce significant levels of stress (Gusnard, 2005; Mantini et al., 2007). From a social-cognitive perspective, the self-concept is represented by an interconnected system of self-aspects that are more or less accessible at different points in time (McConnell, 2011; McConnell et al., 2012). Although social-cognitive and neurocognitive research have proceeded independently of other, integrating these literatures can provide a unique perspective for understanding how dark leaders can affect their subordinates’ self-concept, and how the accessibility of the self-concept can be measured. For example, dark leadership is characterized by the “sustained display of hostile verbal and nonverbal behaviors that exclude physical contact” (Tepper, 2000, p. 178). These behaviors may include responding with loud and angry tantrums, harshly criticizing subordinates
in public, communicating with verbal profanity, and/or demonstrating little regard for their subordinates’ feelings or opinions (Tepper, 2000). Naturally, these leadership behaviors are perceived to be threatening, anxiety-provoking, and are stressful (Rafferty & Restubog, 2011; Reeve & Tseng, 2010; Tepper, 2000, 2007). Therefore, it is likely dark leadership can disrupt the spatiotemporal patterns of resting state networks as indicated by attenuated gamma wave amplitudes (Mantini et al., 2007).

The deactivation of the self-concept can also be indicated by the accessibility of self-related content (Dijksterhuis & van Knippenberg, 2000). Research has shown for example, that the self-concept can be defined by using independent (e.g., ‘I’, ‘me’, ‘my’) and/or interdependent (e.g., ‘we’, ‘us’, ‘our’) pronouns (Kuhnen, Hannover, & Schubert, 2001). Importantly, when these pronouns are accessible in memory, such as when they can be generated spontaneously in a lexical task (see Dijksterhuis & van Knippenberg, 2000), it indicates that the self-concept is active as self-related concepts (or pronouns) are accessible within this associative memory network through processes of spreading activation. However, when the self-concept is inactive, the accessibility of its contents may be limited. As such, it may be more difficult to spontaneously generate self-referential pronouns. Therefore, the activation of the self as an can be indicated by ease to which self-referential pronouns are accessed (as an independent and/or interdependent entity; Ashforth, Rogers, & Corley, 2011), compared to when self-referential pronouns cannot be generated or when non-self-related pronouns (e.g., ‘he’, ‘her’, ‘him’, ‘she’) are spontaneously produced (Dijksterhuis & van Knippenberg, 2000).

Since the self-concept is continually updated as new autobiographical memories are integrated into various self-aspects (McConnell, 2011), the accessibility of the self-concept can also be assessed by procedures that require individuals to verbalize their current thoughts as they
emerge. In a procedure referred to as protocol analysis (see Ericsson & Simon, 1993; Newell & Simon, 1972), verbalizations that result from speaking aloud do not reflect deliberative memory retrieval (Ericsson & Simon, 1993). This is because protocol analysis samples intermediate states, rather than retrospective memory states (Pylyshyn, 1989). Therefore, the accessibility of the self-concept may be indicated when individuals are able to verbalize self-related words (e.g., reference to the self, self-values, self-beliefs) during speech rather than when the self-concept is inhibited.

In summary, neurocognitive and social-cognitive research demonstrates that there are numerous approaches to assessing the activation of the self-concept at an implicit level. In this study, a self-activation measure based from Dijksterhuis and van Knippenberg (2000) and a protocol analysis procedure were used to assess the activation of the self-concept before and after interacting with a dark leader. In addition, electroencephalography (EEG) was used to measure the activity of resting state networks in an exploratory component of this study. In the following section, I will describe how different types of dark leadership may vary with respect to influencing their subordinates’ self-concept.

*Self-threats vary by the type of dark leadership*

Different types of dark leadership may be perceived by subordinates as being more or less threatening. According to Einarsen et al.’s (2007) classification of leaders (shown in Figure 3), dark leadership may be differentiated based on whether leaders behave unethically towards the organization (i.e., constructive-disloyal leadership), towards subordinates (i.e., tyrannical leadership), or both (i.e., derailed leadership). In contrast, constructive leadership occurs when leaders behave prototypically towards the organization and subordinates as seen in Quadrant I of
Figure 3. Because the current study focused specifically on subordinates’ responses to subordinate-directed abusive supervision, only two of the three types of dark leadership identified in Figure 3 are relevant – derailed leadership and tyrannical leadership. Derailed leadership occurs when leaders behave unethically towards their organization and their subordinates. For example, leaders may bully, humiliate, and deceive their subordinates, as well as steal, lie, and sabotage their organization (Einarsen et al., 2007). In contrast, tyrannical leadership occurs when leaders are abusive towards their subordinates, but behave in accordance with the tasks, objectives, and goals of their organization – contributing to the organization’s overall level of effectiveness (Einarsen et al., 2007). That is, they may treat their subordinates poorly if it “will get the job done.”

This study focused specifically on tyrannical leadership for the following reasons. First, subordinates may be more likely to respect and fear a tyrannical leader than a derailed leader because a tyrannical leader may be seen as competent and important to their organization’s success. Consistent with this idea, Tiedens (2001) showed that perceived competence mediated the relationship between a leader’s expression of anger and the leader’s perceived status and legitimacy. Importantly, because legitimate leaders are granted status and power (Tiedens, 2001) and are perceived to be more permanent as people privately believe that they earned their position (Blau, 1956), tyrannical leaders may be viewed as having greater control over their subordinates’ resources and outcomes. Second, derailed leaders may poorly fit with their subordinates’ leadership prototype (i.e., schema of a leader) because these leaders are neither considerate of their subordinates’ needs nor are they loyal to their organization’s mission and objectives. Therefore, subordinates may question a derailed leader’s legitimacy, status, and
power, which limits the impact that this type of dark leadership will have on subordinates’ sense of self (Tiedens, 2001).

In this study, the effects of tyrannical dark leadership on subordinates’ self-concept are compared to the effects of constructive or supportive leadership – i.e., leaders who are benevolent towards their subordinates and who uphold their organization’s values and goals. Supportive leadership is theorized to develop, rather than threaten, their subordinates’ self-concept based on research that shows how these leaders foster follower engagement and well-being through their authenticity and words of encouragement (Gardner, Avolio, Luthans, May, & Walumbwa, 2005; Reeve & Tseng, 2010). These findings lead to the following hypotheses:

Hypothesis 1a: Interacting with a tyrannical dark leader will result in self-concept deactivation as shown by fewer stated self-referential pronouns compared to interacting with a supportive leader.

Hypothesis 1b: Interacting with a tyrannical dark leader will result in lower gamma wave amplitudes, indicating the deactivation of resting state networks compared to interacting with a supportive leader.
Experience Taking and Effects on Moral Sensitivity

In the previous section, I argued that experiencing tyrannical dark leadership will lead to the deactivation of subordinates’ self-concepts. Additionally, the deactivation of the self-concept can be measured in two ways. First, EEG can be used to measure gamma wave frequencies that are associated with the activation of resting state networks. Second, traditional socio-cognitive measures that measure spontaneously generated self-referential content may indicate the continued salience of the self-concept. In this section, I further argue that the deactivation of the self-concept can impact how individuals will perceive and respond to moral events.

Recently, social-cognitive research has shown that when the self-concept is inactive, individuals may form self-associations with the attributes of others at nonconscious and conscious levels. Referred to as experience-taking (Kaufman & Libby, 2012), or the “narrative
collective-assimilation hypothesis” (Gabriel & Young, 2011), forming self-associations with the traits, attitudes, and beliefs of others may also cause individuals to change their behavior in ways that are consistent with these self-identified attributes (see also Slotter et al., 2013). For example, Kaufman and Libby (2012) showed across a series of five studies that when the saliency of the self-concept was reduced (e.g., referring to participants by their subject number), individuals became more likely to self-identify with the traits and characteristics that they had observed from a focal actor. For instance, participants were more likely to agree with self-ascribed statements indicating that they were introverted, had favorable attitudes towards stigmatized social groups (e.g., racial minorities), and that they intended to vote in an upcoming election when these traits and characteristics described a character about whom they had read. However, the process of forming self-associations with another’s traits and characteristics did not occur among participants whose self-concept was salient.

Similarly, Gabriel and Young (2011) demonstrated that when individuals thought about the self abstractly at a collective level, rather than at an individual level, participants became more likely to self-identify with concepts that they had read about in literary narratives (e.g., Harry Potter, Twilight novels) at implicit and explicit levels. Interestingly, participants categorized “me” words (myself, mine) and “wizard/vampire” words (wand, spell, potions, fang, blood) more quickly than “not me” words (they, theirs) when they identified with a larger collective. Conclusions from Gabriel and Young (2011) can be interpreted to show that procedures that cause people to feel de-individualized can also cause them to self-identify with the attributes and beliefs of others that had been observed. Interestingly, these effects were replicated by Slotter et al. (2013), who showed that experiencing relational threats (e.g., when a person’s significant other or partner expressed interest in a romantic rival), caused people to
endorse their rival’s traits and characteristics as a way to recapture their partner’s interest or attention.

When neurocognitive and social-cognitive research are considered together, an original idea that may emerge is that dark leadership may cause subordinates to form self-associations with their leader’s traits, attitudes, and beliefs. Such a process is similar to the effects observed in the social cognitive literature (Gabriel & Young, 2011; Kaufman & Libby, 2012; Slotter et al., 2013). This process may occur because dark leadership is inherently threatening, stressful, and anxiety provoking (Reeve & Tseng, 2011; Tepper, 2000; 2007), which may deactivate subordinates’ self-concepts that are maintained by resting state networks. This theory has not yet been tested in the leadership literature. However, the conclusions from several recent studies offer additional support for further developing this view. In a notable study, Foti, Bray, Thompson, and Allgood (2012) showed that when followers’ ideal image of a leader was characterized by an Autocratic or Anti-Prototypical leadership profile (i.e., profile characteristics that include high tyranny and narcissistic traits, but low sensitivity and dedication), they were more likely to incorporate these negative leader traits into their own leadership self-schema, perhaps to protect their self-concept. However, the same pattern did not occur when followers with a Narcissistic and Anti-Prototypical self-profile expressed their preference for an ideal leader. These individuals, were in fact, just as likely to prefer leaders with positive and negative leadership profiles.

Similarly, Avey, Palanski, and Walumbwa (2010) demonstrated that ethical leadership was positively associated with employee organizational citizenship behavior, and negatively related to employee deviant behavior. Importantly, this effect was strongest when subordinates’ self-esteem (or self-confidence) was low. These results can be interpreted to show that a
diminished self-concept (i.e., low self-esteem) facilitated the process of forming self-associations to their leader’s ethical traits (e.g., conscientiousness, social responsibility) that had been observed. Self-associations with ethical traits in turn, promoted prosocial, rather than deviant behavior among subordinates. Likewise, Howell and Shamir (2005) described how self-concept clarity, the extent to which a person’s self-concept is clearly defined and internally consistent, affected how the individual related to his or her leader. They argued that a follower will develop a personalized relationship when his or her self-concept clarity was low (vs. high), in which case, the follower willingly endorsed his or her leader’s perspectives and values.

Finally, the literature on stereotype threat and crowd behavior offers comparable findings. Specific to research on stereotype threat, people tend to behave consistently with a stereotype when they feel threatened (e.g., Spencer, Steele, & Quinn, 1999), suggesting that they had adopted the beliefs associated with the stereotype to guide behavior. Also, research on crowd behavior shows that people “lose the sense of who they are” when they identify with a larger crowd, and this diffusion of self-awareness can lead to unruly destructive behavior that is perpetuated by the mob (Vider, 2004).

Alternate Theories of Nonconscious Transference of Traits and Characteristics

This section describes two alternative theories that involve the idea of nonconscious transference of traits and characteristics: contagion theories (Aarts et al., 2008) and the interpersonal social cognitive theory of transference (Andersen & Chen, 2002). The goal of this section was to summarize how the process of forming self-associations to attributes that had been observed from others (i.e., the self-identification perspective), differs from these two theoretical viewpoints. Table 1 summarizes the similarities and differences that will be described in this section.
Automatic goal contagion

Goal contagion refers to human beings’ ability to infer and automatically adopt the goals of others at a nonconscious level (Aarts et al., 2008). Proponents of this approach argue that goal contagion is evolutionarily adaptive by allowing people to anticipate and understand the behaviors and intentions of others in order to facilitate personal goal pursuit (Aarts et al., 2008). Several studies demonstrate how nonconscious goal contagion can influence behavior. For example, Ashton-James et al. (2007) demonstrated how social mimicry can encourage prosociality towards others (e.g., offering to help). Similarly, Aarts, Gollwitzer, and Hassin (2004) showed how observing another’s behavior that implied the goal of making money caused participants to work harder and faster in a task that allowed them to earn more money; although goal contagion occurred only when the implied goal already existed in participants’ minds (i.e., they had a high need for money).

On the surface, goal contagion and the self-identification process appear similar as they both indicate that an individual’s behavior can be influenced by the nonconscious transference of another’s goals. However, there are two important differences that distinguish these two theoretical perspectives. First, empirical research demonstrates that goal contagion is attenuated when negative affect is experienced (Aarts, Custers, & Holland, 2007; Aarts et al., 2008). In contrast, the self-identification process occurs when the self-concept is inactive (Kaufman & Libby, 2012), such as when an individual feels threatened (Fales et al., 2007; Gusnard, 2005; Zhao et al., 2007). Second, goal contagion occurs when the implied goal preexists in memory and is merely re-accessed to influence behavior (e.g., Aarts et al., 2004). However, the self-identification process occurs even when situations are novel (Gabriel & Young, 2011; Kaufman
The distinction between automatic goal contagion and the self-identification process is summarized in section III at the bottom of Table 1.

*Interpersonal social-cognitive theory of transference*

The process of self-identifying with another’s attributes is also similar to those described by the *interpersonal social-cognitive theory of transference* (Andersen & Chen, 2002). This theory argued that self-knowledge is defined by the social relationships that people have with their significant others (e.g., mother, father, close friend), such that their affect, motivation, self-evaluation, and self-regulatory strategies will vary depending on the relational mental representation that they have presently active. Consistent with this theory, Shah (2003) demonstrated that participants’ mental representation of significant others had important consequences on their goal pursuit. For example, when participants were primed with an image of their mother, they indicated greater commitment to the goals that person had for them, such as commitment to their career or family. However, this effect occurred only when the person prime was significant to participants (Shah, 2003). According to the social-cognitive theory of transference (Andersen & Chen, 2002), this effect occurred because thinking about a specific relational other (i.e., mother) caused specific relational knowledge structures to become active. This in turn, defined how behavior should ideally occur. In this process, the working self-concept may become infused with the knowledge that reflects the self in relation to others, and it explains how the expectations, values, and goals of others could direct self-action, even when the others are not physically present (Andersen & Chen, 2002).

When the social-cognitive theory of transference is used to understand the effects of dark leadership, this theory implies that, by activating a relational self that contains deviant values and goals, dark leaders could promote subordinate unethical behavior. However, the social-cognitive
theory of transference differs from the self-identification perspective in three respects. First, the self-identification process is not influenced by the relationship quality that an individual shares with a relational other. In fact, the self-identification process can occur between two complete strangers (Kaufman & Libby, 2012; Slotter et al., 2013). In comparison, the behavioral effect described by social-cognitive theories of transference require that an individual develops a close relationship to another person. As demonstrated by Shah (2003), the closeness of a person’s interpersonal relationship moderated the impact that priming the relational other had on his or her behavior. Only when two individuals had developed a close relationship did priming the relational other impact behavior. As Shah argued, it is likely that the relational mental structure of a close (vs. distant) other is more accessible in memory, which would make it easier for specific goals to guide behavior when primed. However, it is not likely that subordinates will develop strong, or particularly close relationships with dark leaders (Xu et al., 2012), and so this theory cannot explain the effect of dark leadership on subordinate unethical behavior.

Second, the interpersonal social-cognitive theory of transference implies that people continue to have access to their own self-concepts, needs, and preferences. In contrast, the self-identification process occurs only when the self-concept is inactive (Kaufman & Libby, 2012). As such, the behavioral effects described by these two theoretical perspectives may involve unique processes and mechanisms.

Third, accessing relational mental models is a top-down process as higher-order relational models constrain the production of lower level goals and scripts that direct behavior (Lord & Brown, 2004; Lord, Diefendorff, Schmidt, & Hall, 2010). Hence, relational mental models must be primed (often by having people think about a relational other) in order to influence behavior. However, the self-identification process can occur between two complete strangers (Kaufman &
Libby, 2012; Slotter et al., 2013), meaning that this process may involve emergent bottom-up processes (vs. top-down processes) since a relational mental model would not have yet been developed to guide behavior. This distinction is important for separating competing theories as indicated in the fourth column of Table 1. Here, bottom-up and top-down processes can occur nonconsciously; however, bottom-up processes occur when the self-concept is inhibited, whereas top-down processes influence behavior when specific mental models are primed, or are made accessible in memory.

Last, it is important to note that the self-identification process differs from perspective taking in that people are not actively interpreting, or responding to an event by using another’s perspective. Instead, the process of self-identifying with another’s attributes occurs without the explicit intention to do so.

Summary

In the previous sections, I argued that the threatening nature of dark leadership may cause subordinates’ self-concepts to become inactive, thereby facilitating the self-identification process. Although several competing theories were reviewed – i.e., automatic goal contagion theory and the interpersonal social-cognitive theory of transference, these theories involve different processes as summarized at the bottom of Table 1. In the following sections, the traits, identity, and beliefs that are characteristic of dark leaders are described.

Traits and Identities Associated with Dark Leaders

Research has identified several traits and characteristics that are closely associated with dark leaders. These include Machiavellianism (the use of guile and deceit to manipulate others to achieve personal goals), narcissism (self-absorption, hostility, entitlement, and arrogance),
dominance, and hubris (i.e., excessive pride) (Brown & Treviño, 2006; Harms, Spain, & Hannah, 2011; Judge, Piccolo, & Kosalka, 2009; Kish-Gephart et al., 2010; Resick, Whitman, Weingarden, & Hiller, 2009; Tepper, 2007). Other characteristics and beliefs that are descriptive of dark leaders include their desire for power, their belief that moral rules are flexible, and that they are morally righteous (Brown & Treviño, 2006; Kish-Gephart et al., 2010; Wiltermuth & Flynn, 2013). Dark leaders also define their self-concept in terms of an independent self-identity (Johnson et al., 2012).

In this study, I argued that subordinates will self-identify with several attributes that are associated with dark leadership. They are Machiavellianism and narcissism, which are two traits found within the “dark triad” (Harms et al., 2010), and an independent identity. These attributes were chosen because the behaviors that are associated with them are easily recognized by observers. For example, ruthlessness and deceitful behaviors are characteristic of those with a Machiavellian trait (Dahling, Whitaker, & Levy, 2009), whereas excessive pride and vanity are indicative of narcissism (Raskin & Hall, 1979). Finally, behavioral objectives that are promotion-focused, demonstrate individual uniqueness, or personal achievement are indicative of an independent identity (Brewer & Gardner, 1996; LeBoeuf et al., 2010; Lee, Aaker, & Gardner, 2000).

Importantly, a pattern approach was applied to investigate how tyrannical dark leadership would affect the process of self-identifying with these attributes. Pattern approaches have been utilized in numerous studies on traits and personality (e.g., Foti et al., 2012; Foti & Hauenstein, 2007; Smith & Foti, 1998). They differ from variable approaches by examining how configurations (or patterns) of traits influence perceptions and behaviors. Research demonstrates that pattern approaches offer several advantages over variable approaches. Foremost, pattern
approaches provide a more holistic and ecologically valid representation of how people organize patterns of traits and self-aspects that are held in memory. Moreover, when multiple traits are considered together, they can interact to create more complex constraints on behavioral outcomes. Pattern approaches also suggest that it is the confluence of multiple traits operating together (vs. singular traits) that have an impact on behavior, a finding that has been demonstrated in several works (e.g., Foti et al., 2012; Foti & Hauenstein, 2007; Smith & Foti, 1998).

Previous research suggests that another’s attributes can be assimilated both at an explicit level and an implicit level when the self-concept is inactive (Gabriel & Young, 2011). Compared to these studies, however, it is important to note that dark attributes are not viewed positively by society, and they may not be self-identified at an explicit level due to impression management motives (Stewart, Bing, Davison, Woehr, & McIntyre, 2009). Therefore, the process of forming self-associations with Machiavellianism and narcissism traits, and an independent identity may occur at an implicit level, but not at an explicit level. That is, there may be clear dissociations between implicit and explicit measures as found in other domains in the literature when undesirable self-attributes (e.g., racial stereotypes, low self-esteem) are considered (Greenwald & Banaji, 1995; Uhlmann, Leavitt, Menges, Koopman, Howe, et al., 2012).

Hypothesis 2a: Tyrannical dark leadership will be positively related to self-associations formed with implicit independent self-identity measures, but not explicit independent self-identity measures.

Hypothesis 2b: Tyrannical dark leadership will be positively related to self-associations formed with implicit Machiavellianism measures, but not explicit Machiavellianism measures.
Hypothesis 2c: Tyrannical dark leadership will be positively related to self-associations formed with implicit narcissism measures, but not explicit narcissism measures.

Hypothesis 2d: Tyrannical dark leadership will be positively related to self-associations formed with a pattern of implicitly measured dark attributes, but not with a pattern of explicitly measured dark attributes.

Hypothesis 2e: Self-concept deactivation will moderate the relationship between dark leadership and forming self-associations to a pattern of implicitly measured dark attributes, but not with a pattern of explicitly measured dark attributes.

In the following section, I will describe how implicit self-associations formed to a pattern of dark attributes can influence moral perception and behavior.

The Self-Identification Process and Moral Perception

Although people assume that their experience of the world is an accurate and objective representation of their environment, it is more accurate to say that people’s perceptions of their daily experiences are affected by their beliefs, motives, and identities (Balcetis & Dunning, 2006). Research has shown for instance, that people “see what they want to see” as they perceive stimuli and events in ways that conform to their deeply held desires and beliefs. In a notable study, Balcetis and Dunning (2006) showed that motivated reasoning or ‘wishful thinking’ created an expectancy that constrained how participants perceived ambiguous reversible images (e.g., an image that can be perceived either as a seal or a whale). In fact, participants focused on the interpretation that was congruent with their current goal (i.e., seeing a seal when there is a desire to see a seal). Other works show how regulatory-focus systems can influence global versus local processing styles. For example, Förster and Higgins (2005) showed
that being promotion-focused led individuals to focus more on the holistic interpretation of an image (i.e., focusing on the entire image rather than on details within the image), whereas being prevention-focused led individuals to focus on the details within the image. Similarly, Leavitt et al. (2012) demonstrated that the inclusiveness of participants’ moral judgments was affected by their salient identity. Specifically, participants’ concern for others extended to both in-group and out-group members when a doctor identity was active, but held for in-group members only when a soldier identity was active. Thus, identity altered their perception as to which person or groups moral rules should apply (i.e., universally to all groups or specific to a particular group).

These studies demonstrate that perception is neither completely accurate nor objective since people are sensitive to different kinds of information depending on their current goals and objectives. Moral sensitivity is based on this idea, and it refers to the capacity to detect and interpret an event as being morally relevant (Sparks & Hunt, 1998); although it may also include the awareness of how moral (or immoral) actions impact others (Rest, 1986). Importantly, people may be sensitive to different kinds of moral issues that critically influence how they direct their moral behaviors. Generally, research has shown that universally, people consider the following issues as being morally relevant – notably, situations that create harm (vs. care) to others (e.g., it can never be right to kill a human being); situations that provide fairness or reciprocity towards others (e.g., justice is the most important requirement for a society); issues regarding in-group loyalty (e.g., people should be loyal to their family members, even when they have done something wrong); authority/respect (e.g., respect for authority is something all children need to learn); and moral purity/sanctity (e.g., people should not do things that are disgusting, even if no one is harmed)(see Graham, Nosek, Haidet, Iyer, Koleva et al., 2011).
In this study, I argued that subordinates’ perception of moral events are malleable based on their sensitivity to detecting morally relevant events. Furthermore, I argued that moral sensitivity can change depending on whether subordinates self-identified with the attributes that generally characterize dark leaders. In the following sections, the relationships of dark leader attributes with moral sensitivity are described.

Dark traits and moral sensitivity

Personality research has shown that certain traits are closely associated with specific motivational self-regulatory systems (Elliot & Thrash, 2002; Morf & Rhodewalt, 2001; Read et al., 2010). For instance, narcissism is associated with an approach-oriented regulatory focus (Foster & Trimm, 2008; Morf & Rhodewalt, 2001), which is consistent with findings that narcissists are strongly motivated to obtain desirable outcomes, such as proving their own superiority over others. However, narcissists are weakly motivated to avoid negative outcomes like escaping risk or “playing it safe.” As Morf and Rhodewalt (2001) suggested, narcissists are driven by an insatiable desire to construct a grandiose self-concept, which is evident in their lofty arrogance, sense of entitlement, outward hostility, and need for self-admiration. In addition, narcissists’ chronic desire to affirm the self has been shown to make them less sensitive to social conventions and the needs of others (Morf, Ansara, & Shia, 2001). Instead, narcissists appear to be bent on maximizing gains (“accomplish hits”) without expressing particular concern for social approval in the pursuit of their goals (“avoid misses”). This may be fueled by the fact that narcissists perceive the self in an aggrandizing way (e.g., “people look up to me, because I always know the right thing to do”; Morf, 1994) and believe in their superiority by overestimating their self-worth (Gosling, John, Craik, & Robins, 1998; John & Robins, 1994). Narcissists also tend to reconstruct their perception of prior failures in a more favorable light
(Rhodewalt & Eddings, 2002). Hence, self-regulatory systems have powerful influences on cognitive, affective, and self-evaluative processes by shaping how narcissists perceive information, as well as direct behavior.

Machiavellians are similar to narcissists in several ways. Cognitively, Machiavellians and narcissists have a strong desire to attain high status, dominance, and maintain control over others (Dahling et al., 2009). However, Machiavellians are more likely than narcissists to implement carefully planned ruthless tactics (e.g., using deceit, intimidation, and concealment) when pursuing goals like obtaining status, money, and power (Jones & Paulhus, 2009; Rauthman & Will, 2011). Machiavellians also have a cynical view of the world, believing that it is controlled by external forces that exist outside of their control (Dahling et al., 2009). This belief can account for Machiavellians’ use of deceit in interpersonal exchanges as this tactic allows them to regain control over their environment (Mudrack, 1989). Although Machiavellians are capable of reasoning morally, they can break with moral convention when presented with the opportunity to achieve desired objectives (Bogart, Geis, Levy, & Zimbardo, 1970; Harrell & Hartnagel, 1976). Affectively, Machiavellians are characterized by shallow or cold affect, and they rarely express remorse. They also express a lack of empathy towards others, although this does not imply that their emotional intelligence is impaired (e.g., Côté, DeCelles, McCarthy, Van Kleef, & Hideg, 2011).

Personality research has not investigated how narcissistic or Machiavellian traits affect sensitivity to moral information, although a few studies have examined how these traits affect social behavior (e.g., Côté et al., 2011; Dahling et al., 2009). However, Schmidtt, Gollwitzer, Maes, and Arbach (2005) demonstrated that Machiavellians’ moral sensitivity differed from non-Machiavellians in at least one moral dimension. Specifically, they show that Machiavellians were
less sensitive to moral injustices that had been perpetrated by the self or others, unless the individual himself or herself was the recipient of the moral injustice. Likewise, the literature on narcissism suggests that defense mechanisms underlie narcissists’ tendency to justify immoral actions that satisfy ego interests, a behavior referred to as moral hypocrisy (Naso, 2006; Paulhus & John, 1998). This tendency is consistent with narcissists’ motivation to maximally construct and maintain their grandiose self-concept at low personal cost (Morf & Rhodewalt, 2001). It is also consistent with cognitive dissonance theory, which states that people are more likely to change their standards used to judge behavior, rather than changing their behavior itself (Festinger, 1957). Indeed, several studies demonstrate that conscious and nonconscious changes to peoples’ moral standards underlie moral hypocrisy (e.g., Batson, Thompson, & Chen, 2002; Batson, Thompson, Seuferling, Whitney, & Strongman, 1999). These findings could account for other works that show how narcissists, like Machiavellians, were less sensitive to moral transgressions that they or others had enacted (Cooper & Pullig, 2012), unless they were also the recipient of adverse interpersonal outcomes (Schmidtt et al., 2005).

In summary, the literature on moral processing and personality suggests that narcissists and Machiavellians adhere to different standards when appraising moral events. Because narcissists and Machiavellians are driven by motives and goals that focus on advancing themselves at the expense of others, their sensitivity to moral issues that involve social concern may be overshadowed by their goals for self-affirmation, dominance, and power.

*Individual self-identity and its influence on moral sensitivity*

Social cognitive research shows that the self-concept is multidimensional and contains multiple self-aspects that each house different memories, knowledge, and affective experiences
within a larger association network (Hannah et al., 2009; McConnell, 2011; McConnell et al., 2012; Schleicher & McConnell, 2005). Furthermore, the self-concept can be defined at three levels (individual, relational, and collective level), which are each guided by distinct self-regulatory systems (Brewer & Gardener, 1996; Lee et al., 2000; Lord & Brown, 2004; Lord et al., 2010). When the self is defined at an individual level (i.e., an independent identity), the self is conceptualized as a unique entity that is motivated by personal attitudes and interests (Johnson & Lord, 2010). However, when self-definitions are defined at a collective level or a relational level (i.e., interdependent identity), the self is understood as being part of either a larger collective, or a dyadic relationship with a specific person, respectively (Chang & Johnson, 2010; Lord & Brown, 2004; Morling & Kitayama, 2008; Tajfel & Turner, 1986). Whereas individuals with a collective identity strive to internalize group values and fulfill social roles and group obligations (Jackson, Colquitt, Wesson, & Zapata-Phelan, 2006; Morling & Kitayama, 2008); those with a relational identity are motivated to fulfill the expectations implied within their dyadic relationship (Chang & Johnson, 2010). It is also important to note that although people may express chronic self-definitions at a particular level (based on one’s culture; Morling & Kitayama, 2008), they may also experience state identities, in which contextual cues momentarily increase the saliency of one or another identity in their working self-concept (LeBoeuf et al., 2010; Lee et al., 2000; McConnell, 2011).

Self-definitions have notable influences on moral behavior. For instance, Johnson et al. (2012) demonstrated that people with an independent identity are more likely to lead using an abusive leadership style as they are motivated by personal goals that justify the need for power and dominance. Although self-identity research primarily focuses on how self-identities influence moral behavior rather than moral perception (e.g., Aqunio & Reed, 2002; Johnson &
Lord, 2010; Johnson et al., 2012; Leavitt et al., 2012; Reynolds et al., 2010; Verplanken & Holland, 2002), there is evidence to suggest that self-definitions can affect how people perceive moral events and issues.

According to Rai and Fiske (2011), the meaning of morality is open to social construction as it is shaped by four distinct moral motives. These moral motives define moral actions as those which: (a) protect group values and norms (i.e., unity motive); (b) value respect for authority figures (i.e., hierarchical motive); (c) emphasize the need for balanced, in-kind reciprocity (i.e., equality motive); or (d) ensure that rewards and punishments are fair and proportionate (i.e., proportionality motive) (see Table 2.1). Although Rai and Fiske (2011) do not describe how each moral motive relates to each level of the self-concept, the values emphasized by each motive are suggestive. For example, unity motives, which emphasize the protection of group values and norms, are similar to the values that are expressed by those with a collective self-identity (Lord & Brown, 2004; Morling & Kitayama, 2008). In addition, hierarchical motives, which stress the dominance and superiority of powerful individuals, closely align with values embraced by those with an individual self-identity (Lord & Brown, 2004; Johnson et al., 2012; Morling & Kitayama, 2008). Likewise, motives that define morality in terms of equal trade and reciprocity with affiliated others (i.e., equality motive) correspond to values associated with a relational self-identity (Chang & Johnson, 2010; Flynn, 2005; Lord & Brown, 2004). Identifying the potential associations of different moral motives with different levels of the self-concept is important because it implies that moral perception may vary based on current self-definitions. These associations are summarized in Table 2.1.

Table 2.1:
Description of Rai and Fiske’s (2011) Social-Relational Theory and Associations to Levels of the Self-Concept
<table>
<thead>
<tr>
<th>Social-Relational Motive</th>
<th>Definition</th>
<th>Examples of expression of moral motive</th>
<th>Associated Self-Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hierarchical Motive</td>
<td>• The motive to respect rank in social groups where superiors are entitled to deference and respect, but must also lead, guide, and protect subordinates</td>
<td>• Blind obedience</td>
<td>• Individual</td>
</tr>
<tr>
<td>Unity Motive</td>
<td>• The motive to care for and support the integrity of in-groups by avoiding or eliminating threats of contamination and providing aid and protection based on need or empathetic compassion</td>
<td>• Terrorism, “honor killings”, ethnic cleansing, Kamikaze, self-sacrifice</td>
<td>• Collective</td>
</tr>
<tr>
<td>Equality Motive</td>
<td>• The motive for balanced, in-kind reciprocity, equal treatment, equal say, and equal opportunity</td>
<td>• Equally divide the cost of gas on a trip; An “eye for an eye” form of justice</td>
<td>• Relational</td>
</tr>
<tr>
<td>Proportionality Motive</td>
<td>• The motive for rewards and punishments to be proportionate to merit based on a utilitarian calculus of costs and benefits</td>
<td>• Justifying the use of an atomic bomb on Hiroshima and Nagasaki on the number of lives saved from ending the war; Using kill ratios to justify sacrificing military personnel</td>
<td>• Undefined</td>
</tr>
</tbody>
</table>
Consistent with the arguments presented above, moral research has shown that social value orientations can influence how people approach moral dilemmas (e.g., Joireman, Kuhlman, Van Lange, Doi, & Shelley, 2003; Kelley & Stahelski, 1970; Kuhlman & Marshello, 1975; Van Lange, Liebrand, & Kuhlman, 1990). For instance, research demonstrates that when social value orientations were collectively driven, people perceived actions that led to collective-gain as moral. In contrast, when individualistic social value orientations dominated, people perceived actions that satisfied personal interests (e.g., non-cooperative actions that further self-gain) as being more rational, moral, and powerful (Joireman et al., 2003; Kahan, 1974). Interestingly, Joireman et al. (2003) also showed that collectivists and individualists differed in their ability to discern the morality of different issues. While collectivists perceived actions that satisfied altruistic motives (e.g., furthering collective well-being) as being more moral than those that satisfied individualistic motives (e.g., being opportunistic), individualists were oblivious to the moral differences in the two responses. This finding may explain why individuals with organizational status and power (e.g., executives) are more willing to enforce severe punishments for minor employee transgressions as it is more difficult for them to perceive the potential harm in their actions (Wiltermuth & Flynn, 2013).

Other studies suggest that people attach different levels of importance to the dimensions of ‘morality’ and ‘power’ in their decisions, based on their social value orientation (Liebrand, Jansen, Rijken, & Suhre, 1986). Specifically, those with collectivistic value orientations were more sensitive to dimensions of morality (e.g., cooperation and care) versus power when differentiating between actions that harmed or benefited others. Conversely, those who identified more closely with individualistic values attended to dimensions of power when appraising the morality of events (e.g., viewed individual relative gain as being moral).
In sum, salient identities and traits can affect how people perceive various moral domains. Specifically, I argue that because an independent identity, Machiavellianism, and narcissism are focused on achievement, power, and self-gain that can preclude the needs or the well-being of others, subordinates who form self-associations to these attributes can become sensitive to Graham et al.’s (2011) moral domain of authority and harm, or broadly, the notion of having authority. This is the belief that individuals who are in a position of authority or power are endowed with the rightful privileges to carry out their charges, which may involve actions that harm others, especially when they provide desired resources or outcomes. However, people may also become insensitive to Graham et al.’s (2011) moral domain of care or concern to others when they form self-associations to dark attributes. These ideas lead to the following hypotheses:

_Hypothesis 3a:_ Self-associations formed with a pattern of implicitly measured Machiavellianism and narcissism traits, and an independent self-identity will be related to greater sensitivity to issues that involve having authority.

_Hypothesis 3b._ Self-associations formed with a pattern of implicitly measured Machiavellianism and narcissism traits, and an independent self-identity will be related to reduced sensitivity to issues involving care for others.

**Moral Sensitivity and Ethical Behavior**

In this section, I describe how nonconscious processes that involve changes to moral sensitivity differ from conscious moral processes, a distinction which is illustrated in paths B and A of Figure 1 respectively. This distinction is important because traditional moral theories emphasize moral recognition an antecedent of (un)ethical behavior (Rest, 1986). However, nonconscious processes are also influential according to dual processing moral theory (Haidt,
2001; Reynolds, 2006). In this section, I suggest that implicit processes which affect moral sensitivity can also influence (un)ethical behavior.

**Moral Sensitivity vs. Moral Recognition and Moral Behavior**

In Rest’s (1986) 4-component model of moral processing (see Figure 1), *moral recognition*, which refers to the ability to consciously recognize how actions can affect the welfare of others, precedes moral judgment and behavior. Conceptually, moral recognition is similar to moral sensitivity in that both are concerned with how perceptual processes precede moral behavior. The difference, however, is that moral sensitivity does not require an attentional filter that would involve people having to rationalize the costs and benefits that are associated with their actions (Sparks & Hunt, 1998). Rest’s (1986) moral recognition stage, on the other hand, is conscious and deliberative in nature.

The difference between moral recognition and moral sensitivity is further illustrated when the process of detecting an ethical issue (i.e., moral sensitivity) is compared to analyzing an ethical problem (i.e., moral recognition). According to Hunt and Vitell (1986), an *ethical issue* exists when one or more alternative moral responses to a situation are inconsistent with existing formal and/or informal ethical norms, codes, and rules that have been defined at various societal levels (e.g., societies, organizations, groups, individual) or contexts (e.g., industries, professions). As noted by Sparks and Hunt (1998), because established norms, rules, and codes exist externally to decision makers, systematic failures in perceptual processes (e.g., inattention) may prevent individuals from noticing an ethical issue. In comparison, an *ethical problem* occurs when people try to resolve an ethical conflict by identifying a solution that satisfies competing moral interests. This process is representative of Rest’s (1986) moral recognition stage as individuals first detect that a moral discrepancy exists, upon which they attempt to rationalize a
moral solution. This implies that ethical problems cannot go unperceived (Sparks & Hunt, 1998), whereas ethical issues can become ethical problems when they become salient or noticeable, resulting in reflective types of moral processing.

Moral sensemaking theories suggest that the inability to perceive that decisions and actions are inconsistent with external moral rules and norms can create a “slippery slope” that normalizes unethical behavior (Gino & Bazerman, 2009). This phenomena is demonstrated in the organizational climate literature, which recognizes that leaders are key to shaping the moral tone of an organization. That is, by encouraging or turning a blind eye towards unethical practices, “bad apples” can corrupt “good barrels” that implicitly inform followers and organizational newcomers whether or not certain behaviors are morally (in)appropriate (Anand, Ashforth, & Joshi, 2004; Ashforth, Giolia, Robinson & Treviño, 2008; Beu & Buckley, 2004; Schaubroeck et al., 2012). Over time, climates and cultures may develop that make it difficult for members to perceive whether certain practices were in fact, ethical when these behaviors are normalized through socialization processes (Anand et al., 2004; Shao et al., 2011). This phenomenon was demonstrated by Gino and Bazerman (2009), who showed that the gradual erosion of ethical practices (e.g., permitting small-scale financial theft) can lead people to commit significantly larger ethical transgressions (e.g., approving large-scale financial theft) when they failed to perceive that their decisions were in fact, immoral with repeated moral infractions.

In the present study, unethical conduct was assessed based on how participants responded to a potentially immoral event that provided them with the opportunity to cheat for self-gain. Using Graham et al.’s (2011) set of moral intuitions, combined with the nature of this task, unethical behavior may not be perceived as immoral when individuals are guided by implicit biases that justify using necessary actions to achieve present objectives. This idea suggests that
sensitivity to the concept of authority (i.e., issues that involve exhibiting dominance, control, and show an indifference to causing harm) will positively predict unethical behavior on a task that provided participants with an opportunity for self-gain. However, it is less clear how sensitivity to the other broadly defined morally issues (e.g., in-group loyalty, respect, fairness) would affect ethical behavior as this task does not involve social interactions. Therefore, moral sensitivity to the domain of care for others, in-group loyalty, and respect were examined in an exploratory manner and no hypotheses related to these aspects of morality were formulated.

_Hypothesis 4:_ Moral sensitivity to issues that involve having authority will be positively related to unethical behavior on a task that enables opportunistic behavior.

_Hypothesis 5:_ Tyrannical dark leadership will be positively associated with subordinate unethical behavior through the process of forming self-associations to a pattern of implicitly measured dark attributes, and moral sensitivity to issues that involve having authority.

**Summary**

A dual processing model that illustrates the effects of dark leadership on subordinate unethical behavior is shown in Figure 4. This figure includes my hypothesized relationships, which are also summarized in Table 2.2. To summarize, I argue that dark leadership is related to subordinate unethical behavior through a process that involves subordinates self-identifying to a pattern of dark attributes that include narcissism and Machiavellianism traits, and an independent self-identity. This pattern would in turn, influence how subordinates will perceive and respond to ethical issues.
These hypotheses were tested in a lab setting. In this study, dark leadership was manipulated using a one factor (tyrannical dark leader vs. supportive leader) between-subjects design. In the focal study, protocol analysis and a self-activation measure were used to assess the accessibility of the self-concept. In an exploratory study, EEG was used to measure self-concept deactivation by tracking the amplitude of gamma waves. The following chapter describes the methods and procedures that were used to test hypotheses. In brief, participants first completed the protocol analysis procedure and a self-activation measure. Participants then completed a task designed to assess their “creative problem solving capacities,” and they also received feedback from a dark or a supportive “leader.” Participants then completed another protocol analysis procedure and a second self-activation measure. Then, the implicit association test (IAT) and more traditional explicit measures of these characteristics were completed to assess the extent self-associations had formed to dark attributes. Furthermore, moral sensitivity to moral types of events was assessed using an implicit detection task. Finally, participants were provided with an ethical task where they had the opportunity to unfairly acquire better rewards. It is also important to note that the research assistants for this study were blind to the experimental condition when they interacted with each participant to ensure that the findings of this study would not be confounded by the researcher’s expectations.
Figure 4. A process model with hypothesized relationships associating tyrannical dark leadership to subordinate unethical behavior.
Table 2.2: Summary of hypothesized relationships

<table>
<thead>
<tr>
<th>Hypothesis 1a</th>
<th>Interacting with a tyrannical dark leader will result in fewer stated self-referential pronouns than when interacting with a supportive leader.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 1b*</td>
<td>Interacting with a tyrannical dark leader will result in lower gamma wave amplitudes, indicating deactivation of default networks, than when interacting with a supportive leader.</td>
</tr>
<tr>
<td>Hypothesis 2a</td>
<td>Tyrannical dark leadership will be positively related to self-associations formed with implicit independent self-identity measures, but not explicit independent self-identity measures.</td>
</tr>
<tr>
<td>Hypothesis 2b</td>
<td>Tyrannical dark leadership will be positively related to self-associations formed with implicit Machiavellianism measures, but not explicit Machiavellianism measures.</td>
</tr>
<tr>
<td>Hypothesis 2c</td>
<td>Tyrannical dark leadership will be positively related to self-associations formed with implicit narcissism measures, but not explicit narcissism measures.</td>
</tr>
<tr>
<td>Hypothesis 2d</td>
<td>Tyrannical dark leadership will be positively related to self-associations formed with a pattern of implicitly measured dark attributes, but not with a pattern of explicitly measured dark attributes.</td>
</tr>
<tr>
<td>Hypothesis 2e</td>
<td>Self-concept deactivation will moderate the relationship between dark leadership and forming self-associations to a pattern of implicitly measured dark attributes, but not with a pattern of explicitly measured dark attributes.</td>
</tr>
<tr>
<td>Hypothesis 3a</td>
<td>Self-associations formed with a pattern of implicitly measured Machiavellianism and narcissism traits, and an independent self-identity will be related to greater sensitivity to issues that involve having authority.</td>
</tr>
<tr>
<td>Hypothesis 3b</td>
<td>Self-associations formed with a pattern of implicitly measured Machiavellianism and narcissism traits, and an independent self-identity will be related to reduced sensitivity to issues involving care for others.</td>
</tr>
<tr>
<td>Hypothesis 4</td>
<td>Moral sensitivity to issues that involve having authority will be positively related to unethical behavior on a task that enables opportunistic behavior.</td>
</tr>
<tr>
<td>Hypothesis 5</td>
<td>Tyrannical dark leadership will be positively associated with subordinate unethical behavior through the process of forming self-associations to a pattern of implicitly measured dark attributes, and moral sensitivity to issues that involve having authority.</td>
</tr>
</tbody>
</table>
In this chapter, the sample population, the experimental design, EEG procedures, tasks, and measures that were used in the focal and exploratory study are described.

Focal Study Methodology

The purpose of the focal study was to test all hypotheses, excluding hypothesis 1b. In the exploratory study, EEG was used to assess the activation level of resting state networks to test hypothesis 1b. Table 3.1 lists the procedures for the focal and exploratory study, which are identical except for the EEG protocols.

Participants

In the focal study, 109 undergraduate students at a large Midwestern university were included in the final sample. Of this sample, 17 participants also participated in the EEG study. Participants were randomly assigned to the dark (N=50) and supportive (N=59) experimental conditions. Participants were mostly female (73.4%); were Caucasian (74.3%), African American (12.8%), or Asian/Pacific Islander (3.7%); and were between the ages of 18-21 years (77.1%).
Table 3.1: Sequence of procedures and measures in the focal and exploratory study

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Measure</th>
<th>Procedure</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focal Study ((N=109))</td>
<td></td>
<td>Exploratory Study ((N=17))</td>
<td></td>
</tr>
<tr>
<td><strong>1. Participant assigned to computer terminal</strong></td>
<td>-</td>
<td>*<em>1. <em>Participant assigned to computer terminal &amp; EEG setup</em></em></td>
<td>-</td>
</tr>
<tr>
<td><strong>2. Protocol analysis &amp; self-activation measure</strong></td>
<td>Appendix B</td>
<td>*<em>2. <em>Protocol analysis, self-activation measure, EEG recording</em></em></td>
<td>Appendix B</td>
</tr>
<tr>
<td><strong>3. Introduction by ‘primary researcher’</strong></td>
<td>Appendix A</td>
<td><strong>3. Introduction by ‘primary researcher’</strong></td>
<td>Appendix A</td>
</tr>
<tr>
<td><strong>4. Participants complete “Lost at Sea Task”</strong></td>
<td>Appendix C</td>
<td><strong>4. Participants complete “Lost at Sea Task”</strong></td>
<td>Appendix C</td>
</tr>
<tr>
<td><strong>5. Dark/Supportive leadership manipulation</strong></td>
<td>Appendix D &amp; E</td>
<td>*<em>5. <em>Dark/Supportive leadership manipulation E, EEG recording</em></em></td>
<td>Appendix D &amp; E</td>
</tr>
<tr>
<td><strong>7. Dark leader narratives</strong></td>
<td>Appendix F</td>
<td><strong>7. Dark leader narratives</strong></td>
<td>Appendix F</td>
</tr>
<tr>
<td><strong>10. Participants complete “Word Anagram Challenge”</strong></td>
<td>Ethical behavior task</td>
<td><strong>10. Participants complete “Word Anagram Challenge”</strong></td>
<td>Ethical behavior task</td>
</tr>
<tr>
<td><strong>11. Participants complete “Survey Questionnaires”</strong></td>
<td>Explicit trait and identity measures, filler questionnaires, demographic information, control variable measures</td>
<td><strong>11. Participants complete “Survey Questionnaires”</strong></td>
<td>Explicit trait and identity measures, filler questionnaires, demographic information, control variable measures</td>
</tr>
<tr>
<td><strong>12. Debriefing</strong></td>
<td>-</td>
<td><strong>12. Debriefing</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

*Note: Differences between focal and exploratory study procedures*
Procedure, Experimental Manipulations, and Measures

Upon entering the experimental lab, participants were assigned to a computer terminal by a research assistant (RA), who then relayed the study’s cover story. That is, participants were informed that the primary researcher for the study is ‘Johnathan Fletcher,’ a doctoral student whose primary research focused on identifying antecedents to creativity in online virtual teams. Participants were then directed to several surveys and programs that could be found on their computer. Importantly, participants were instructed to use an online conferencing program (Skype) when prompted shortly after beginning the survey to contact Johnathan, as he will explain the study’s tasks in greater detail. Participants were also informed that the video function in Skype was disabled due to the slow internet connection and that they were to use a headset to communicate with Johnathan.

_pre self-activation measure._ After having listened to the brief introduction, participants were provided with a digital recorder and were instructed by the RA to “talk aloud” any thoughts that they had in the present moment, for a period of one minute. Afterwards, participants began the survey which started with Dijksterhuis and van Knippenberg’s (2000) self-activation measure. To complete the self-activation measure, participants had to guess the English equivalent (e.g., me, I, us, we) to pronouns underlined in a foreign language (i.e., Wezwe). Following this task, participants were prompted by the survey to contact Johnathan, a confederate in the study, via Skype.
Dark and supportive leadership manipulation. In the Skype conference call, participants were greeted by ‘Johnathan,’ who introduced himself as the primary investigator of the study. During this initial interaction, participants were able to observe how Johnathan treated his subordinates (i.e., the RA). In the supportive leadership condition, Johnathan was thoughtful and considerate of the RA even after learning of a mistake the RA had made earlier in the day (i.e., the RA did not configure several needed programs for the study). In the dark leadership condition, Johnathan was condescending and ridiculed the RA after learning of the assistant’s mistake. The purpose of this initial interaction was to show how Johnathan generally behaved towards others, rather than towards participants in particular. As such, it may increase the legitimacy of the dark leadership manipulation made later by showing the consistency in Johnathan’s behavior. During this brief interaction, Johnathan described his academic accomplishments (i.e., that he is nearing the completion of his doctoral degree and has accepted a post-doctorate position at Stanford University). Last, Johnathan explained to participants the purpose of the first task (i.e., the Lost at Sea task), which was developed to assess several skills believed to underlie creative processing in virtual teams. In both the dark and supportive leadership conditions, participants were informed that they had 6 minutes to complete the task and that they should also reconnect with Johnathan via Skype to explain their solution to the task. In actuality, participants in the dark leadership condition had 3 minutes to complete the task as Johnathan rudely forced participants to end the task early. This interruption was necessary because it reinforced Johnathan’s image as a rude, inconsiderate leader. Note that although

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2 RAs who had played the role of the primary researcher (Johnathan) received an extensive 3 week training period that occurred during the pilot study. The RAs were also experienced confederates who had played similar roles in previous studies on emotional regulation. Analyses that compared the effectiveness of each RA showed that each RA did not differ in terms of perceived abusive supervision in the dark \( F(2, 49) = .56, p = .57 \) leadership condition, or perceived supportive leadership in the supportive \( F(2, 58) = 1.25, p = .29 \) leadership condition.
participants in the dark leadership condition had 3 minutes to work on the task, the amount of
time that participants had to interact with the leader were equal in both conditions as the response
scripts for the supportive leader and the dark leader were identical in length. The duration of the
interaction was also carefully monitored by a timer that was recorded by the RA.

The “Lost at Sea” task required that participants assume a leadership role in a survival
scenario. Specifically, they, and four other survivors were on a sinking yacht located in the
middle of the ocean approximately 1000 miles offshore. To complete the task, participants had to
select up to five items from a larger list of items to ensure the survival of everyone onboard.
Among these items was a rubber raft that could only carry four people and will capsize if more
than five items or people were brought onboard. Not only must participants devise a strategy for
handling the situation, they must also convince Johnathan why their items would best ensure
their group’s survival.

The “Lost at Sea” task was selected because there are expert responses indicating which
items are the most and least critical to survival. This information was used to redesign the task so
that the only solution ensuring survival would be to take items that could attract search and
rescue efforts (i.e., the lighter and gas/oil mixture). All other items helped sustain passengers
(e.g., a box of chocolate), but these items did not contribute to the group’s long-term survival.
The task was also designed to encourage three critical errors, which allowed Johnathan to
provide standardized abusive or supportive leadership responses regardless of the items that
participants had selected. More specifically, extensive pilot testing revealed that participants too
often focused on selecting items that helped sustain passengers (vs. including items that would
attract search and rescue); that participants did not have a plan to save the 5th passenger (since
the maximum capacity for the raft was 4); and that participants exceeded the maximum weight
capacity for the raft by taking too many items (they allowed passengers to take aboard the raft useless personal items).

Johnathan’s behavior in the dark leadership condition was based on Tepper’s (2000) *Abusive Supervision* scale. Specifically, Johnathan’s response to participants was rude (e.g., “Listen, I said earlier that I would give you 6 minutes to do this task, but honestly, I have other places to be, so I’d like you to tell me your answers now”), condescending (e.g., “Why don’t you try surprising me. That’s a typical undergrad response.”), and highlighted participants’ incompetency (e.g., “How dumb are you?”). He also lied and ridiculed participants on their answer choices (e.g., “That’s the stupidest thing I’ve heard today”).

In the supportive leadership condition, Johnathan’s behavior was based on Rafferty and Griffin’s (2004) *Supportive Leadership* subscale. Specifically, Johnathan’s behavior demonstrated that he was supportive of participants’ choices (e.g., “That makes good sense. I can see that,” “It’s all right. I know that this is a hard task. Everyone has trouble with it”); that he was considerate towards participants (e.g., “Have you considered taking these items?”, “Don’t worry, take your time”). The dark and supportive leadership scripts for the *Lost at Sea task* are included in Appendix D and E.

To standardize the interaction, Johnathan would wait until participants have selected and explained each of their responses before commenting on their choices. This helped standardize the interaction by allowing Johnathan to address all the critical errors that had been made by participants. Tepper (2000)’s *Abusive Supervision* scale and Rafferty and Griffin’s (2004) *Supportive Leadership* scale were included at the end of the study as manipulation checks for dark and supportive leadership.
Post self-activation measure. After completing the Lost at Sea task, participants were instructed to record their thoughts by speaking into a digital recorder for one minute and to complete a second version of Dijksterhuis and van Knippenberg’s (2000) self-activation measure (Appendix B). The instructions for completing the self-activation measure were identical to the first; however, this measure asked participants to guess pronouns written in Malay/Vietnamese.

Self-concept deactivation. In this study, the deactivation of the self-concept was created by computing the score difference in the pre- and post-self-activation measure.

Self-identification with dark traits and identity. Participants were then informed that the next tasks assessed their attention to detail. They were given two narratives written in the first person, which described the thoughts of an individual who was self-centered, power-driven, and Machiavellian. After reading each narrative, participants were asked to guess the literary source from which the narratives were obtained. This procedure helped prevent participants from immediately rejecting or behaving in ways that are opposite to those described in the narrative, which occurs when power-related concepts are suggested explicitly (Caza, Tiedens, & Lee, 2011). These narratives are included in Appendix F.

Self-identification with Machiavellianism, independent identity, and narcissism was assessed using the Implicit Association Test (IAT), which was designed specifically for this study. The IAT is an implicit measure that assesses the association strength between concepts by comparing the response times to paired concepts. The validity of the IAT has been demonstrated in prior works that investigate implicit biases and self-associations, such as race and gender stereotypes, and self-esteem (for a review, see Greenwald, Poehlman, Uhlmann, & Banaji, 2009). The rationale for the IAT is that response speeds indicate the extent of association between two conceptual categories. Specifically, faster responses would indicate that two paired concepts are
strongly associated in a person’s semantic memory network, which would allow for spreading activation to spontaneously activate these two concepts. However, concepts that are weakly associated would take much longer to access in memory (i.e., slower spreading activation), thereby producing a delayed response time. For example, if participants were faster at responding to a “self” and narcissistic item pair, than to an “other” and narcissistic item pair, this would indicate that narcissism is more closely associated with the self-concept.

To complete the IAT, participants responded to two blocks of items, each consisting of 40 trials for each dark trait (narcissism & Machiavellianism) and an independent self-identity. Using the narcissism item set as an example, participants were instructed to categorize four “self” words (e.g., “myself,” “mine,” “me,” “my”) and four narcissistic trait words (i.e., “prideful,” “smug,” “superior,” “entitled”) using the same response key on a keyboard in the first block. Using a different response key on the keyboard, participants were to categorize four “other” words (e.g., “they,” “theirs,” “them,” “their”) and four conscientious trait words (i.e., “mindful,” “honest,” “principled,” “trusting”). Conscientiousness was selected as endorsement of this trait has been shown to be negatively correlated with narcissism and Machiavellianism traits (Jakobwitz & Egan, 2006). However, in the second block of items, these pairings were reversed, such that participants were to categorize the four “self” words with the four conscientious trait words using a single response key, and the four “other” words with the four narcissistic trait words using a different response key on the keyboard. The same procedure was used to assess four Machiavellian trait words (i.e., “cunning,” “dominant,” “crafty,” “powerful”), and to assess four independent identity words (i.e., “unique,” “different,” “individual,” “separate”). For the independent identity item set, however, interdependent identity words were paired with “self” words and “other” words instead of conscientious words.
The IAT measure was scored using Greenwald’s improved $D$ algorithm (see Greenwald, Nosek, & Banaji, 2003, for a complete description), which creates a standardized difference score. When this scoring algorithm is used, a score of zero signifies no relative difference in the extent of association between compared concepts. Increasingly positive scores signify stronger self-associations formed with implicit narcissism, Machiavellianism, and independent identity. In contrast, increasing negative scores signify stronger self-associations with implicit conscientious traits and interdependent identity. The algorithm accounts for time necessary to recover from errors and removes trials on which participant responses occur faster than 300 ms or slower than 3,000 ms, as those responses reflect other types of processes.

**Moral sensitivity.** The moral sensitivity measure was administered next. To complete this measure, participants were instructed to read a short narrative about a financial marketing analyst’s experiences on a given workday. This narrative was presented to participants in short segments in which participants were to indicate segments that they perceived as being “important.” Moral sensitivity was accessed by participants’ indication that particular story segments were “important.” These instructions were intentionally general as to not focus participants on particular kinds of moral (i.e., authority, respect, in-group loyalty, harm vs. care, fairness or reciprocity) or morally neutral (i.e., strategy/tactic) issues that were contained in each segment of the narrative.

This measure was based on Robertson et al.’s (2007) measure, but it included a wider range of moral domains identified by Graham et al. (2011). In Robertson et al.’s (2007) measure, moral issues involving justice, care, and strategy/tactic items were included. Justice issues occurred when the characters in the narrative made decisions and actions that were impartial and fair. Justice issues correspond to Graham et al.’s moral domain of *fairness* or reciprocity. Care
issues occurred when the characters in the narrative made decisions and actions that were benevolent or expressed concern for others. Care issues correspond to Graham et al.’s moral domain of care for others. Strategy/tactic were task-focused neutral items that did not have moral implications. In this modified measure, moral events that involved Graham et al.’s moral domains of harm vs. care (i.e., harming or caring for others), in-group loyalty (being loyal to individuals in one’s group or family), and authority/respect (i.e., showing status, respecting figures of authority) were developed and content validated through extensive pilot testing. Specifically, each segment of the narrative was evaluated by graduate and undergraduate researchers to determine whether it was representative of its assigned moral domain. Items were revised until an agreement was reached that each item indicated its respective moral domain. This modified measure is included in Appendix G.

Ethical behavior. In the final task, participants completed a competitive “Word Anagram Task” for the opportunity to enter into a lottery drawing for $100 based on their performance. This task was adopted from a prior study, and it was found to be effective for assessing ethical behavior. To complete the task, participants had to solve word anagrams (e.g., ANGOER \(\rightarrow\) ORANGE) using a computer program, with the opportunity to earn one entry point into the lottery drawing for each correctly solved problem. Participants were also informed that they had to solve each problem in sequential order (skipping was not allowed in the program), and that they had a 5-minute time limit. At the end of 5 minutes, the program would automatically disable the ability to input new responses. Therefore, participants’ performance score was the problem number of the last problem solved. Instructions for completing this task were provided by the program onscreen and verbally by the RA for the study.
Before beginning the task, participants were informed of a glitch that will make ‘answer’ buttons on the screen active. These buttons would reveal the solution to each problem. Participants were also instructed that they should not click on these buttons, presumably on an honesty policy. Participants were also informed that because the program was not developed specifically for this study, the program would not record their responses. To increase the legitimacy of this explanation, participants were provided with a post-it note. They were instructed to record their final score on the post-it note at the end of the task, and to submit the post-it note to the RA at the end of the study.

In this task, unethical behavior was determined by the number of times participants clicked on the answer buttons (which allowed them to advance further in the program). Unbeknownst to participants, the computer recorded their responses during the task, allowing the experimenter to verify their actual score and use the number of answer button clicks as a measure of unethical behavior. In total, unethical behavior occurred in 42% of the cases, with the number of times participants cheated during the task ranging between 1 and 13 (out of a possible of 15). There was also a positive skew in the occurrence of unethical behavior as shown in Figure 5 showing that many subjects exhibited no unethical behavior.
Figure 5. Scatterplot of the range and frequency of the unethical behavior variable

Standardized Self-Report Measures

Unless otherwise indicated, participants responded to all explicit measures using a five-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree). These measures are included in Appendix H.

Explicit traits and identity. Participants completed a self-reported Machiavellian, independent identity, and narcissism measure that was embedded among filler questions to avoid suspicion. The narcissism measure ($\alpha=.63$) consisted of five target items based on Raskin and Hall’s (1979) Narcissistic Personality Inventory (e.g., “I am assertive,” “I am an extraordinary person,” “I am more capable than other people”). The Machiavellian measure ($\alpha=.61$) comprised of five items based from Dahling et al.’s (2009) Machiavellianism Scale (e.g., “I believe that lying is necessary to maintain a competitive advantage over others,” “I enjoy having control over
other people,” “I am willing to sabotage the efforts of other people if they threaten my own goals”). The independent identity scale (α=.71) was based on five items from Selenta and Lord’s (2005) Levels of Self-Concept Scale (e.g., “I am competitive with my friends,” “I thrive on opportunities that demonstrate that my abilities or talents are better than those of other people,” “I feel best about myself when I perform better than others”). Each item was rated on a scale with response options that ranged from 1 (not at all like me) to 5 (very much like me).

Abusive supervision. Ten of fifteen items from Tepper’s (2000) Abusive Supervision Scale (α=.97) measured the extent to which Johnathan was directly and overtly abusive to the subordinate (e.g., “Ridicules me,” “tells my ideas are stupid”). Items that described indirect and more generalized types of abusive behaviors were not included (e.g., “blames others to save himself,” “invades my privacy”) due to the difficulty of simulating more discrete behaviors in a brief interaction episode. Each statement was answered using a ‘yes’ or ‘no’ response format and provided a manipulation check for the leadership condition.

Supportive supervision. Rafferty and Griffin’s (2004) three-item Transformational Leadership Scale (“Considers my personal feelings before acting,” “behaves in a manner which is thoughtful of my personal needs,” “sees that my interests are given due consideration”) assessed supportive leadership (α=.89). Each statement was answered using a ‘yes’ or ‘no’ response format and provided a manipulation check for the leadership condition.

Interactional justice. Neihoff and Moorman’s (1993) nine-item Interactive Justice measure assessed perceived justice during the Lost at Sea task (α=.93; e.g., “The researcher treats me with kindness and consideration”).
Private self-consciousness. Fenigstein, Scheier, and Buss’s (1975) 14-item Private Self-Consciousness Scale measured how often individuals reflected about their self (α=.75; e.g., “I reflect about myself a lot”).

State affectivity. Positive and negative state affectivity were measured using the short form of the PANAS-Trait Scale (Watson, Clark, & Tellegen, 1988). Participants read a list of 20 adjectives and indicated their feelings at that moment (α=.89, positive; α=.86, negative).

Self-regulatory depletion. Gino et al.’s (2011) three-item Self-Regulatory Depletion Scale measured the amount of self-control, willpower, and cognitive effort participants had exerted in the Lost at Sea task (α=.74; e.g., “how much willpower was required to complete the Lost at Sea task”).

Revenge cognitions. Bradfield and Aquino’s (1999) seven-item Revenge Cognitions Scale measured participants’ revenge cognitions towards Johnathan (α=.93; e.g., “I’m going to get even”).

Resilience. Cambell-Sills and Stein’s (2007) ten-item Resilience Scale measured individual differences in the ability to overcome difficult challenges (α=.84; e.g., “able to adapt to change,” “tend to bounce back after illness or hardship”).

State self-esteem. Heatherton and Polivy’s (1991) 14-item measure of State Self-Esteem Scale (α=.91) assessed current evaluations of the self in terms of performance self-esteem (e.g., “I feel confident about my abilities”) and social self-esteem (e.g., “I feel self-conscious”).

Moral identity. Aquino and Reed’s (2002) five-item Moral Identity Instrument (α=.82) were used to measure self-importance of moral identity. The instructions for the items listed
“Some characteristics that might describe a person: caring, compassionate, fair, friendly, generous, helpful, hardworking, honest, and kind.” The instructions continued:

“The person with these characteristics could be you or it could be someone else. For a moment, visualize in your mind the kind of person who has these characteristics. Imagine how that person would think, feel, and act. When you have a clear image of what this person would be like, answer the following questions.”

These five items captured Aquino and Reed’s (2002) “Internalization” dimension, or the degree to which moral trait associations are deeply embedded in the person’s sense of self. Sample items include “it would make me feel good to be a person who has these characteristics” and “being someone who has these characteristics is an important part of who I am.”

*Desire to win lottery drawing.* A single item measured the desire to have a “good” chance at winning the lottery. This response was used as a control variable.

**Exploratory Study Methodology**

*Participants*

Data were collected from 17 undergraduate students who also participated in the focal study. In this sample, participants were mostly female (53%); were between the ages 18-21 years (94%); were Caucasian (76%), African-American (18%), or Asian/Pacific Islander (6%).

*Procedure*

The procedures for the exploratory study are also detailed in Table 3.1. This table shows that the exploratory study differed from the focal study by including procedures for assessing
resting state networks with EEG. All other procedures and measures were completed by all participants.

Upon entering the experimental laboratory, participants were asked to sign a consent form while they were outfitted with the EEG cap. In this study, event-related potentials (ERP) were recorded at 13 scalp sites (Fp1, Fp2, F2, F3, F4, F7, F8, Fz, Pz, O1, O2, T7, T8) using AgCl electrodes (see Figure 5). These sites are in areas associated with resting state networks, which include the ventral and dorsal mPFC (Brodmann areas 6 & 10, or nodes Fp1 & Fp2; Gusnard, 2005; Mantini et al., 2007; Sridharan et al., 2008). These sites also included regions not associated with resting state networks, namely the occipital and temporal lobes (Brodmann areas 19 & 37, or nodes O1, O2, T7, & T8) (see Table 3.2 and Figure 6).

Although EEG records cortical activity across multiple frequencies (e.g., alpha, theta, delta, gamma), this study focused on changes in gamma wave amplitudes that are associated with resting state networks (Chen et al., 2007; Deco & Jirsa, 2012; Mantini et al., 2007). These sites and the right mastoid were recorded in relation to a reference electrode at the left mastoid. The ERP waveforms were then re-referenced offline to the average of the left and right mastoids (see Luck, 2005). The horizontal electrooculogram (HEOG) was recorded bipolarly from electrodes at the outer canthi of both eyes, and the vertical electrooculogram (VEOG) was recorded from electrodes above and below the midpoint of the left eye.

Next, participants were told to relax for a period of 1 minute to measure the brain in a resting state or a “default mode” (Raichle, MacLeod, Snyder, Powers, Gusnard, et al., 2001). At the end of this time, a time-stamped ERP recording was marked to provide a resting state baseline value (T1). The subsequent procedures were identical to the focal study as shown in Table 3.1. During the course of the study, participants’ cortical activity was continuously
recorded with time-stamps marked before and after completing the first set of self-activation measures (T2), the leadership manipulation (T3), the second set of self-activation measures (T4), and at the end of the study (T5).

**EEG recordings.** Electrode impedance was kept below 5 kΩ. EEG, HEOG, and VEOG were amplified using Synamps1 (Neuroscan) with a gain of 2,000, and a band pass of 0.1–50 Hz. The amplified signals were digitized at 500 Hz. Trials with possible ocular artifacts were identified in two steps (see also Lien, Kwan, Wu, & Wu, 2008). First, trials with ocular artifacts were rejected automatically using a threshold of ± 75 μV within varying epochs following stimulus onset at the five points that were previously described in the study. Next, each of these candidate artifact trials was inspected manually. Rejection of trials with ocular artifacts in the EEG data led to the elimination of 3 participant cases, leaving a total of 17 cases for the final analyzes (n = 10 supportive leadership, n = 7 for dark leadership).

To quantify the overall magnitude of the resting state network, we focused on the time window following the stimulus onset for ERP readings at Fp1 and Fp2. Specifically, ERPs were averaged over 10 s at the start of the study to provide a starting measurement (T1); for approximately 60 s for the set of self-activation measures (T2); for approximately 10 minutes during the leadership manipulation (T3); for approximately 60 s for the second set of self-activation measures (T4); and for 60 s at the end of the study (T5) at Fp1 and Fp2. The onset time for each epoch was recorded individually for each participant. On average, the baseline epoch occurred within 52 s after beginning the study, the self-activation measures occurred within 3 minutes after the start of the study; the leadership manipulation occurred approximately 12 minutes after the start of the study; the second self-activation measures occurred after 22
minutes from beginning the study, and the final ERP measurement occurred approximately 60 minutes after the start of the study.

After individual epochs were created, a baseline correction was applied that would allow for comparisons between differing epochs. Also, epoch ERP amplitude averages for gamma frequencies (55-65 Hz) were obtained at each epoch.

**Resting state network deactivation scores.** Resting state network deactivation, as indicated by changes in gamma wave amplitudes, was computed at each of the five epochs. To account for individual differences in gamma wave amplitudes, the average ERP value across all five epochs (the entire duration of the study) was determined for each participant, which was then subtracted from the averaged gamma wave ERP at each epoch. This produced a difference score that indicated whether the gamma wave ERP at each of the five epochs was higher or lower than values typically generated in an individual’s resting state network.
### Table 3.2:
Description of Cortical Network Regions, EEG Frequency, and Electrode Location

<table>
<thead>
<tr>
<th>Network</th>
<th>Cortical Region</th>
<th>EEG frequency</th>
<th>Electrode Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Default (self-reflective mental activity)</td>
<td>Bilateral inferior parietal lobule, posterior cingulated/precuneus, bilateral superior frontal gyrus, medial frontal gyrus</td>
<td>Increases in alpha and beta rhythm (8-13 Hz &amp; 13-30 Hz)</td>
<td>F3, Fz, Pz</td>
</tr>
<tr>
<td>2. Dorsal attention</td>
<td>Bilateral intraparietal sulcus, cortex at the intersection of the precentral and superior frontal sulcus near/at the human frontal eye field, ventral precentral, middle frontal gyrus</td>
<td>Suppression of alpha and beta rhythm</td>
<td>AFz, Fz, Cz, Fpz</td>
</tr>
<tr>
<td>3. Visual</td>
<td>Reinotopic occipital cortex, temporal-occipital region</td>
<td>All rhythm with exclusion of the gamma rhythm</td>
<td>O1, O2</td>
</tr>
<tr>
<td>4. Auditory</td>
<td>Bilateral superior temporal cortex</td>
<td>Delta rhythm (1-4 Hz)</td>
<td>T7, T8</td>
</tr>
<tr>
<td>5. Somato-motor</td>
<td>Precentral, postcentral, medial frontal gyri, primary sensory-motor cortices, supplementary motor area</td>
<td>Beta rhythm (13-30 Hz)</td>
<td>C3, Cz, C4</td>
</tr>
<tr>
<td>6. Default (Self-referential mental activity)</td>
<td>Medial-ventral prefrontal cortex, hypothalamus, cerebellum, posterior cingulate</td>
<td>Gamma rhythm (30-70 Hz); decreases in frontal theta rhythm (4-7 Hz)</td>
<td>Fp1, Fp2, F7, F8, F2, Fz, F4</td>
</tr>
</tbody>
</table>

66
Figure 6: Illustration of electrode location on EEG cap.

Note: Reference nodes are located at A₁ and A₂.
Before conducting the proposed analyses, all data were screened for potential outliers, careless responding in the study’s surveys, and cases that failed the leadership manipulation check. There did not appear to be any instances where outliers affected the results. However, a total of 6 cases were removed from the data due to failing the manipulation check (2 cases) or failing to complete the entire survey (4 cases). In addition, 9 cases were not included in the analyses for the self-activation measure as responses were not completed according to instructions (as described in the results section for hypothesis 1). The final sample included 109 participants. The dark leadership condition included a total of 50 participants, and the supportive leadership condition included a total of 59 participants. Also, a total of 17 participants from the focal study were included in the exploratory study. Scores were created for all scales as described in Chapter 3.

Descriptive Information

Table 4.1 contains the descriptive statistics and correlation among the primary variables of interest. In this table, several notable results emerged. First, the leadership type manipulation (coded -1 = supportive leadership, 1 = dark leadership) was positively associated with implicitly measured narcissism, $r = .31, p < .001$, independent identity, $r = .20, p < .05$, and
Machiavellianism, $r = .22$, $p < .05$, but not with comparable explicitly measured narcissism, $r = .02$, ns, independent identity, $r = -.06$, ns, and Machiavellianism, $r = .04$, ns. Hence, there was a dissociation between explicit and implicit measures as commonly found in the literature (Greenwald & Banaji, 1995). Results also reveal that the leadership type manipulation was positively related to abusive supervision, $r = .98$, $p < .001$, but it was negatively related to interactional justice, $r = -.24$, $p < .05$. These results indicate that the dark leadership manipulation was perceived to be unjust and abusive. Across both conditions, the leadership type manipulation was also positively related to subordinate unethical behavior, $r = .43$, $p < .001$, such that interacting with a dark leader was associated with increased subordinate unethical behavior. Interestingly, the leadership type manipulation was not significantly related to revenge cognitions, $r = .10$, ns, and revenge cognitions were not significantly related to subordinate unethical behavior, $r = .11$, ns. Furthermore, perceived abusive supervision was positively related to subordinate unethical behavior, $r = .42$, $p < .05$, but perceived supportive supervision was negatively related to subordinate unethical behavior, $r = -.41$, $p < .05$. Perceived abusive supervision was also positively related to self-associations formed with implicitly measured narcissism, $r = .32$, $p < .001$, and Machiavellianism, $r = .22$, $p < .05$, but not with explicit measures for these two traits. Perceived supportive supervision was negatively related to self-associations formed with implicitly measured narcissism, $r = -.31$, $p < .001$, implicitly measured individual identity, $r = -.21$, $p < .05$, and implicitly measured Machiavellianism, $r = -.21$, $p < .05$.

There were also significant relationships of interactional justice with positive affect, $r = .29$, $p < .001$, and with revenge cognitions, $r = -.29$, $p < .001$. Additionally, there was a positive relationship of subordinate unethical behavior with implicitly measured Machiavellianism, $r = .21$, $p < .05$, implicitly measured independent identity, $r = .19$, $p < .05$, and implicitly measured
The results also reveal that revenge cognitions were positively correlated with state negative affect, $r = .33, p < .001$, but were negatively related to moral identity, $r = -.24, p < .001$. Additionally, state self-esteem was positively related to resilience, $r = .36, p < .001$, moral identity, $r = .32, p < .05$, and explicitly measured narcissism, $r = .22, p < .05$, but it was negatively related to explicitly measured Machiavellianism, $r = -.30, p < .05$, explicitly measured independent identity, $r = -.28, p < .05$, state negative affect, $r = -.36, p < .001$, private self-consciousness, $r = -.26, p < .001$, and revenge cognitions, $r = -.25, p < .001$.

Results also reveal that self-identifying to an explicitly measured Machiavellianism was positively related to revenge cognitions, $r = .32, p < .001$, state negative affect, $r = .31, p < .001$, and self-regulatory depletion, $r = .32, p < .001$. Additionally, self-identifying with an explicitly measured narcissism was positively related to state self-esteem, $r = .22, p < .001$, resilience, $r = .42, p < .001$, and private self-consciousness, $r = .35, p < .001$. Also, self-identifying to an explicitly measured individual identity was positively related to self-regulatory depletion, $r = .30, p < .001$, state negative affect, $r = .25, p < .001$, and private self-consciousness, $r = .44, p < .001$.

Last, gamma wave amplitudes averaged during the leadership manipulation epoch were negatively related to self-association scores to the implicitly measured narcissism, $r = -.47, p < .001$, and implicitly measured Machiavellianism, $r = -.47, p < .001$, indicating that reductions in gamma wave amplitudes were associated with forming self-associations with these implicitly measured traits.

**Additional analyses.** The dissociation between implicitly and explicitly measured attributes was examined further by comparing their response scores in the dark and supportive leadership conditions. Results show that there were no significant group differences for self-
identifying with any of the self-reported trait measures. For example, the response means for the explicit Machiavellian measure were below the response scale midpoint (M = 2.72, SD = .69 for supportive leadership; M = 2.77, SD = .61 for dark leadership), and they did not significantly differ between the two conditions, $F(1, 107) = .21$, ns. Additionally, the response means for the explicit independent identity measure were close to the response scale midpoint (M = 3.19, SD = .75 for supportive leadership; M = 3.11, SD = .68 for dark leadership) and they did not differ between the two conditions, $F(1, 107) = .39$, ns. Finally, the same pattern was observed for the explicit narcissism measure (M = 3.20, SD = .71 for supportive leadership; M = 3.33, SD = .53 for dark leadership), $F(1, 107) = .06$, ns.

However, group comparisons of the implicit Machiavellianism, narcissism, and independent identity IAT measures revealed significant mean reaction time differences. Specifically, implicitly measured independent identity (M = .64, SD = .46 for dark leadership; M = .46, SD = .46 for supportive leadership), Machiavellianism (M = .31, SD = .39 for dark leadership, M = .13, SD = .42 for supportive leadership), and narcissism (M = .20, SD = .49 for dark leadership, M = -.13, SD = .51 for supportive leadership) were more strongly associated with the self-concept in the dark leadership condition than in the supportive leadership condition as indicated by faster reaction times on the IAT task, $F(1, 107) = 4.28$, $p = .04$; $F(1, 107) = 5.37$, $p = .02$; $F(1, 107) = 11.60$, $p < .001$, respectively.

**Manipulation checks**

Before testing the proposed hypotheses, the effectiveness of the leadership type manipulation was evaluated by using a modified version of Tepper’s (2000) *Abusive Supervision Scale* and Rafferty and Griffin’s (2004) *Supportive Leadership* subscale, as described in Chapter
3. The effectiveness of the manipulation was assessed by regressing the abusive supervision scale scores on the leadership type manipulation (coded -1 = supportive leadership, 1 = dark leadership). Results show that the beta weight was significant and positive, $\beta = .98$, $p < .001$; $F(1, 107) = 3204.7$, $p < .001$, indicating that the manipulation increased perceived abusive supervision (M=.89, SD=.11) in the dark leadership condition relative to the supportive leadership condition (M=.01, SD=.03). In addition, the leadership type manipulation was negatively related to perceived supportive leadership scale scores, indicating that the manipulation decreased supportive supervision perceptions in the dark leadership condition (M=.02, SD=.08) relative to the supportive leadership condition (M=.93, SD=.15), $\beta = -.96$, $p < .001$, $F(1, 107) = 1432.2$, $p < .001$.

Additional support for the effectiveness of the leadership type manipulation was shown by regressing the interactional justice scale score on the leadership type manipulation. Results show a significant negative beta weight, $\beta = -.36$, $p < .001$; $F(1, 107) = 6.75$, $p = .01$, indicating that the leadership type manipulation resulted in lower ratings of interactional justice (M = 4.2, SD = .82 for supportive leadership; M = 3.77, SD = .91 for dark leadership).

Plan of analyses

The hypotheses were tested using Mplus 6.12 (Muthén & Muthén, 2010). Hypothesis 1a was analyzed using a mixed-model repeated measures ANOVA that compared self-concept activation prior to, and after having interacted with a dark or supportive leader. Hypotheses 2(a-c), 3(a-b), 4, and 5 were analyzed by specifying regression models with the results for Hypotheses 2(a-c) shown in Figures 7 and 8. Hypotheses 2 (d-e) were analyzed by performing a binomial logistic regression model as the dark attribute pattern variable was a categorical
variable. Results for Hypothesis 2e are shown in Figure 9. Results for Hypotheses 3(a-b) are shown in Figures 10-11. To test Hypotheses 4 and 5, a zero-inflated negative binomial (ZINB) regression was performed as the unethical behavior variable was classified as count data and was skewed toward the positive end of the distribution, as had been shown in Figure 5.
Table 4.1: Means, standard deviations, correlations and scale reliabilities among analyzed variables.

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N=109. *p < .05, **p = .01. Reliabilities are indicated in parentheses where appropriate. MS = Moral sensitivity. Gender was coded as 1 = male, 2 = female. Age was coded as 1=18-21, 2=22-25, 3=26-30, 4=31-35, 5=36-45, 6=46-55, and 7=56+. 
Table 4.1 continued: Means, standard deviations, correlations and scale reliabilities among analyzed variables.

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<td>.09</td>
<td>.01</td>
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<td>27. MS: Attention to others</td>
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<td>-.04</td>
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<td>-.07</td>
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<td>.06</td>
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<td>.25*</td>
<td>.07</td>
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<td>-.21*</td>
<td>.24*</td>
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<td>.03</td>
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<td>29. Age (categorical)</td>
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<td>-.04</td>
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<td>.06</td>
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<td>-.08</td>
<td>.02</td>
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<td>31. Unethical behavior</td>
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<td>.04</td>
<td>13</td>
<td>.04</td>
<td>.42**</td>
<td>-.41**</td>
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<td>.11</td>
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Note: N=109. *p < .05, **p < .001. Reliabilities are indicated in parentheses where appropriate. MS = Moral sensitivity. Gender was coded as 1 = male, 2 = female. Age was coded as 1=18-21, 2=22-25, 3=26-30, 4=31-35, 5=36-45, 6=46-55, and 7=56+.
Table 4.1 cont.: Means, standard deviations, correlations and scale reliabilities among analyzed variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>12</th>
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<th>19</th>
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<th>21</th>
<th>22</th>
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<tr>
<td>12. Independent identity</td>
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<td>13. Machiavellian</td>
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<td>14. Resilience</td>
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<td>(.84)</td>
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<td>15. State self-esteem depletion</td>
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<td>-.30**</td>
<td>.36**</td>
<td>(.91)</td>
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<td></td>
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<tr>
<td>16. Regulatory resource depletion</td>
<td>.30**</td>
<td>.32**</td>
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<td>-.03</td>
<td>(.74)</td>
<td></td>
<td></td>
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<td>.04</td>
<td>.04</td>
<td>.09</td>
<td>.10</td>
<td>(.97)</td>
<td></td>
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<tr>
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<td>-.09</td>
<td>-.95**</td>
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<tr>
<td>19. Interactional justice</td>
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<td>.16</td>
<td>-.03</td>
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<td>-.23*</td>
<td>.23*</td>
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<tr>
<td>20. Positive affect</td>
<td>.16</td>
<td>.06</td>
<td>.21*</td>
<td>.09</td>
<td>.22**</td>
<td>-.19</td>
<td>.17</td>
<td>.29**</td>
<td>(.89)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Negative affect</td>
<td>.25**</td>
<td>.31**</td>
<td>-.02</td>
<td>-.36**</td>
<td>.40**</td>
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<td>.01</td>
<td>-.11</td>
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<td></td>
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<td></td>
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<td>22. Revenge cognitions</td>
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<td>.32**</td>
<td>-.03</td>
<td>-.25**</td>
<td>.15</td>
<td>.09</td>
<td>-.10</td>
<td>-.29**</td>
<td>.10</td>
<td>.33**</td>
<td>(.93)</td>
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<td>23. Private self-consciousness</td>
<td>.44**</td>
<td>.29**</td>
<td>.13</td>
<td>-.26**</td>
<td>.11</td>
<td>-.05</td>
<td>-.01</td>
<td>.19</td>
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<td>.08</td>
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<td>(.75)</td>
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<tr>
<td>24. Moral identity</td>
<td>.02</td>
<td>-.09</td>
<td>.17</td>
<td>.32*</td>
<td>.15</td>
<td>.13</td>
<td>.14</td>
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<td>.01</td>
<td>-.03</td>
<td>-.24**</td>
<td>-.01</td>
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<tr>
<td>25. MS: Respect</td>
<td>.08</td>
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<td>.06</td>
<td>-.02</td>
<td>.19*</td>
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<tr>
<td>26. MS: Authoritarian</td>
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<td>-.10</td>
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<td>.06</td>
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<td>.01</td>
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<td>27. MS: Attention to others</td>
<td>-.07</td>
<td>-.09</td>
<td>-.04</td>
<td>.03</td>
<td>-.07</td>
<td>-.06</td>
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<td>.09</td>
<td>.06</td>
<td>.02</td>
<td>-.02</td>
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</tr>
<tr>
<td>28. MS: Strategy</td>
<td>.25*</td>
<td>.07</td>
<td>-.04</td>
<td>-.21*</td>
<td>.24*</td>
<td>-.09</td>
<td>.05</td>
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<td>.03</td>
<td>.22*</td>
<td>.01</td>
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<tr>
<td>29. Age (categorical)</td>
<td>-.13</td>
<td>-.21*</td>
<td>-.04</td>
<td>.20</td>
<td>-.07</td>
<td>.06</td>
<td>-.04</td>
<td>-.00</td>
<td>.12</td>
<td>.05</td>
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<td>-.31**</td>
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<td>30. Gender</td>
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<td>-.01</td>
<td>.18</td>
<td>.02</td>
<td>-.01</td>
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<td>.09</td>
<td>-.00</td>
<td>-.08</td>
<td>.02</td>
<td>-.04</td>
<td>.09</td>
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<td>31. Unethical behavior</td>
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<td>.07</td>
<td>.04</td>
<td>.13</td>
<td>.04</td>
<td>.42**</td>
<td>-.41**</td>
<td>.06</td>
<td>.13</td>
<td>.01</td>
<td>-.05</td>
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</tbody>
</table>

Note: N=109. *p < .05, **p =.001. Reliabilities are indicated in parentheses where appropriate. MS = Moral sensitivity. Gender was coded as 1 = male, 2 = female. Age was coded as 1=18-21, 2=22-25, 3=26-30, 4=31-35, 5=36-45, 6=46-55, and 7=56+. 
Table 4.1 continued: Means, standard deviations, correlations and scale reliabilities among analyzed variables.

<table>
<thead>
<tr>
<th>Variable</th>
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<th>27</th>
<th>28</th>
<th>29</th>
<th>30</th>
<th>31</th>
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<td>.11</td>
<td>(.64)</td>
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<td>.49**</td>
<td>.62</td>
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<td></td>
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<tr>
<td>27. MS: Attention to others</td>
<td>-.01</td>
<td>.29**</td>
<td>.26**</td>
<td>(.70)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>28. MS: Strategy</td>
<td>-.03</td>
<td>.12</td>
<td>.09</td>
<td>-.24*</td>
<td>(.67)</td>
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<tr>
<td>29. Age (categorical)</td>
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<td>.13</td>
<td>.07</td>
<td>.01</td>
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</tr>
<tr>
<td>30. Gender</td>
<td>.06</td>
<td>.01</td>
<td>-.02</td>
<td>-.17</td>
<td>.18</td>
<td>-.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. Unethical behavior</td>
<td>.02</td>
<td>.00</td>
<td>.24*</td>
<td>-.04</td>
<td>.00</td>
<td>.07</td>
<td>-.03</td>
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</table>

Note: N=109. *p < .05, **p = .001. Reliabilities are indicated in parentheses where appropriate. MS = Moral sensitivity. Gender was coded as 1 = male, 2 = female. Age was coded as 1=18-21, 2=22-25, 3=26-30, 4=31-35, 5=36-45, 6=46-55, and 7=56+. 
ZINB regression can be employed to simultaneously predict outcomes that may arise from two independent and qualitatively different processes. More specifically, ZINB estimates include logistic parameters that indicate the likelihood or odds of membership in a latent zero-count (e.g., non-cheating) group, and poisson-based parameters that predict the extent of cheating (a count variable) for those belonging to the latent cheating group. To interpret the results from ZINB, an exponential function (i.e., $e^B$) was applied to the coefficient that related the predictor variable to the count variable.

The results for Hypotheses 4 and 5 are shown in Figures 12-14. Additionally, interpersonal justice and revenge cognitions were included as an alternate mediational pathway between the leadership type manipulation and subordinate unethical behavior in the test of Hypothesis 5. Including these two variables not only allowed the final model to compare the relative effects of explicit and implicit pathways as described in dual processing theory (Reynolds, 2006), it also allowed for comparisons between theories that emphasize revenge (see Tepper, 2000; 2007) and the proposed theory in this study.

Last, Hypothesis 1b was analyzed using a mixed-model repeated measures ANCOVA in the exploratory study. Results for Hypothesis 5 are shown in Figure 15.

*Implicitly and explicitly measured attribute patterns.* In this study, attribute patterns were created based on the extent of associations formed between each dark trait and self-identity (i.e., Machiavellianism, narcissism, and independent identity) and the self-concept. Pattern approaches differ from variable approaches by considering how different configurations of traits operate together (vs. independently) to influence individual perception and behavior (e.g., Foti et al., 2012; Foti & Hauenstein, 2007). To construct patterns of explicitly measured dark attributes, a median-split procedure was implemented (Foti & Hauenstein, 2007). This procedure creates
patterns by categorizing cases into groups based on whether the score on an explicit attribute fell above or below the median of the attribute (signifying that individuals had strongly or weakly self-identified with an explicitly measured attribute). This created four categories of explicitly measured attributes. In the first category, self-identification with all three dark attributes occurred. In the second category, self-identification occurred with two dark attributes. In the third category, self-identification occurred with one dark attribute. In the last category, self-identification did not occur with any of the dark attributes. The percentage of cases within each explicit attribute pattern category are shown in Table 4.2. In addition, cases with at least two self-identified attributes were coded with a value of 1 (i.e., including cases in the first and second category listed in Table 4.2). Cases that did not have a self-identified attribute, or self-identified to only one attribute were coded with a value of 0.

Analogous implicit patterns were created based on participants’ responses to the IAT for Machiavellianism and narcissism traits, and an independent identity. To create patterns of implicitly measured dark attributes, an IAT score of 0.30 or greater was selected since this score represented a small to moderate association based on Cohen’s $d$ effect-size$^3$ (Greenwald et al., 2003). Thus, a $D$ value of at least 0.30 ensured that self-associations with each dark attribute had sufficiently formed. This procedure also created four implicit dark attribute categories. The four categories and the percentage of cases in each category are also shown in Table 4.2. Similar to before, cases with self-associations to at least two dark attributes were coded with a value of 1 (i.e., including cases in the first and second category listed in Table 4.2). Cases that did not form self-associations to any attribute, or cases that formed self-associations to only one attribute were coded with a value of 0.

---

$^3$ Cohen’s $d$ indicates that values of .2 are small, .5 as medium, and .8 as large effect sizes.
Table 4.2.
Percentage of cases classified as having formed dark attribute patterns with implicitly and explicitly measured Machiavellianism and narcissism traits, and an independent identity

<table>
<thead>
<tr>
<th>Trait Pattern</th>
<th>Supportive Leadership Condition (N=59)</th>
<th>Dark Leadership Condition (N=50)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Implicit Measure¹</td>
<td>Explicit Measure²</td>
</tr>
<tr>
<td>1. Self-associations formed with three dark attributes</td>
<td>8%</td>
<td>15%</td>
</tr>
<tr>
<td>2. Self-associations formed with two dark attributes</td>
<td>19%</td>
<td>34%</td>
</tr>
<tr>
<td>3. Self-associations formed with one dark attribute</td>
<td>43%</td>
<td>25%</td>
</tr>
<tr>
<td>4. Self-associations to dark attributes were not formed</td>
<td>30%</td>
<td>26%</td>
</tr>
</tbody>
</table>

Note: N=109.
1. Dark attribute patterns created using cases with an IAT score greater than, or equal to .30 for Machiavellian and narcissism traits, and an independent identity.
2. Dark attribute patterns were created using a median-split procedure.

Moral sensitivity. Factors in the moral sensitivity measure were identified by submitting the 14 moral sensitivity items that represented Robertson et al.’s (2007) justice, care, and strategy, and Graham et al.’s (2011) moral domains of authority/respect, in-group loyalty, harm and care, to a Principal Axis Factor (PAF) analysis with a promax rotation. Using the spree plot analysis and the Kaiser Rule (i.e., factors as those with Eigen values greater than 1; Kaiser, 1960), 4 factors emerged from the data. Also using a stringent .35 cutoff as recommended in the literature (Fabrigar, Wegener, MacCallum, & Strahan, 1999), 5 items loaded on Factor 1 (eigenvalue = 3.28). These items sampled the moral domain respect by emphasizing the importance of respect to rules and authority. Therefore, this factor was labeled as moral sensitivity to respect. In addition, 4 items loaded on Factor 2 (eigenvalue = 2.31), which include items that inflicted harm to outsiders (item 16 & 17), but demonstrated regard for the in-group
(item 22), and indicated status (item 9). This factor was labeled as authoritarian as it reflected a behavioral style that was cut-throat, outcome oriented, and showed little concern for one’s actions towards others. It included Graham et al.’s moral domain of authority and harm. Next, 4 items loaded on Factor 3 (eigenvalue = 1.32), which include items concerned with strategy for accomplishing tasks and objectives. This factor was labeled as strategy, and it represented a morally neutral domain. This factor also included the majority of strategy and tactic items that were replicated from Robertson et al.’s original measure (i.e., items 18, 19, 21). Last, 2 items loaded on Factor 4 (eigenvalue = 1.10), which included items that described the social predicaments of others. This factor was labeled attention to others, and it included the two care for other items that were replicated from Robertson et al.’s original measure (i.e., items 6 & 7). The correlation among these four factors are shown in Table 4.3a. The factor loadings and corresponding items are shown in Table 4.3b. Scales were then created for each factor by computing a mean score across the included items.

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Respect</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Strategy</td>
<td>.17</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Authoritarian</td>
<td>.42</td>
<td>.07</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>4. Attention to others</td>
<td>.32</td>
<td>-.21</td>
<td>.34</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: N=109
<table>
<thead>
<tr>
<th>Item #</th>
<th>Item</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Wanting a good partnership with InTech, his boss informed Ryan that he had to work after hours to complete additional tasks for InTech by Sunday morning. Ryan had been working nonstop, and has already put in more work hours than anyone else this week to complete the report.</td>
<td>.69</td>
</tr>
<tr>
<td>11</td>
<td>*Ryan felt pressured by his boss to “bend” the interpretation of the data. Ryan, however, was reluctant to make the survey results appear more consistent with what his boss wanted.</td>
<td>.56</td>
</tr>
<tr>
<td>8</td>
<td>Although Ryan can argue and challenge his supervisor, Barry, about having to work on the weekend, he doesn't and comes into work.</td>
<td>.56</td>
</tr>
<tr>
<td>23</td>
<td>Although already very behind in his work, Ryan clears his personal schedule and sets aside personal time and resources to find a solution that would satisfy everyone in the team.</td>
<td>.53</td>
</tr>
<tr>
<td>14</td>
<td>Feeling that he shouldn't challenge his boss, however, Ryan did not complain and did as he was told.</td>
<td>.43</td>
</tr>
<tr>
<td>17</td>
<td>Nearby, Ryan noticed that a fly had landed on a coworker’s sandwich that had been left uncovered. Ryan said nothing to the coworker when the coworker returned.</td>
<td>.18</td>
</tr>
<tr>
<td>16</td>
<td>Ryan thumbed through his wallet. Passing over new dollar bills, he gave the delivery person a few very torn, dirty dollar bills as tip.</td>
<td>.20</td>
</tr>
<tr>
<td>22</td>
<td>Ryan felt concerned of the tension and lack of harmony growing among members in his research team as a result of this discussion.</td>
<td>.42</td>
</tr>
<tr>
<td>9</td>
<td>*Ryan's thoughts return to the InTech marketing strategy report sitting on his mahogany desk.</td>
<td>.23</td>
</tr>
<tr>
<td>10</td>
<td>*Ryan remembered that his boss recommended that they focus on analyzing InTech's TV advertising data on sales. The data did not look promising. However, his boss had made it clear that he only wanted to see data that supported his thinking and nothing else.</td>
<td>-.18</td>
</tr>
<tr>
<td>18</td>
<td>*Ryan continued to review the history of the project with InTech. He recalled that back in September he had followed L &amp; H Marketing's template for standard sampling procedures for projects of this type.</td>
<td>.21</td>
</tr>
<tr>
<td>19</td>
<td>*On this basis, he considered surveying 250 college students who own tablet PCs from 15 different cities across</td>
<td>.20</td>
</tr>
</tbody>
</table>
Table 4.3b. continued
Principle factor analysis for a modified version of Robertson et al.’s (2007) moral sensitivity scale

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>*Charles stressed the importance of collecting more representative data that would increase the study's validity. Ryan, however, was concerned about the increase in cost that would interfere with doing other studies of equal importance.</td>
<td>.32</td>
<td>.21</td>
</tr>
<tr>
<td>7</td>
<td>*He also did not like to spend weekends away from his family. Most of all, he did not like disappointing his 12 year-old daughter by missing her Saturday morning basketball game.</td>
<td>.31</td>
<td>-.12</td>
</tr>
<tr>
<td>6</td>
<td>*To meet this deadline, Ryan would have to come in to work on the weekend. Ryan regretted having to leave his wife and children to come into the office on a Saturday to complete the report. Today was also his wife’s birthday.</td>
<td>.23</td>
<td>-.31</td>
</tr>
</tbody>
</table>

Test of hypotheses

Hypothesis 1a\(^4\) stated that compared to supportive leadership, participants in the dark leadership condition would generate fewer stated self-referential pronouns following the leadership type manipulation. To test this hypothesis, a mixed-model repeated measures ANOVA that compared the aggregated number of independent and interdependent self-referential pronouns used before and after the leadership manipulation was performed. As shown in Table 4.4, there was no significant main effect for Time, \(F(1, 98) = 1.35, ns, \eta^2=.01\). However, the interaction for Leadership Type and Time was significant, \(F(1, 98) = 3.91, p =.05, \eta^2=.04\). As shown in Table 4.5, completing the self-activation measure by using an independent and/or interdependent self-referential pronoun decreased moving from time 1 and time 2 among participants in the dark leadership condition, \(t(44) = 2.30, p =.03, r =.33\), but not for participants in the supportive leadership condition. In fact, the number of independent and interdependent self-referential pronouns that were generated for those in the supportive leadership condition did not differ moving from time 1 to time 2, \(t(54) = -.57, ns, r =.08\). These results provide support for Hypothesis 1a.

\(^4\) For hypothesis 1, 4 cases from the Supportive Leadership condition and 5 cases from the Dark Leadership condition were removed as the measure was not completed as instructed. Specifically, words other than pronouns were used for word substitutions (e.g., today, pal, captain). Thus, a total of 100 cases were used to test Hypothesis 1.
Repeated measures ANOVA: Time and Leadership Type effects for generating independent and interdependent self-referential pronouns

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Type III Sum Square</th>
<th>Mean Square</th>
<th>F</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1</td>
<td>1.62</td>
<td>1.62</td>
<td>1.35</td>
<td>.01</td>
</tr>
<tr>
<td>Time x Leadership Type</td>
<td>1</td>
<td>4.70</td>
<td>4.70</td>
<td>3.91**</td>
<td>.04</td>
</tr>
<tr>
<td>Error</td>
<td>98</td>
<td>117.67</td>
<td>1.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leadership Type</td>
<td>1</td>
<td>.112</td>
<td>.112</td>
<td>.05</td>
<td>.00</td>
</tr>
<tr>
<td>Error</td>
<td>98</td>
<td>230.34</td>
<td>2.35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: N=100 (n=55 for Supportive Leadership, n=45 for Dark Leadership).

***p <.001, **p <.05, *p <.10.

Table 4.5:
Mean independent and interdependent self-referential pronoun use before and after the leadership type manipulation

<table>
<thead>
<tr>
<th>Leadership Type Manipulation</th>
<th>Time 1</th>
<th>Time 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark Leadership</td>
<td>3.75 (1.39)</td>
<td>3.27 (1.45)</td>
</tr>
<tr>
<td>Supportive Leadership</td>
<td>3.40 (1.55)</td>
<td>3.52 (1.14)</td>
</tr>
</tbody>
</table>

Note: N = 100 (n = 55 for Supportive Leadership, n = 45 for Dark Leadership). Standard deviations are indicated in parentheses. Scaling range is 0 to 5.

Hypothesis 2(a-c) stated that there will be a positive relationship between the dark leadership manipulation and self-associations formed with implicitly measured (rather than explicitly measured) dark attributes that included Machiavellian and narcissistic traits, and an independent self-identity. To test Hypotheses 2(a-c), explicitly and implicitly measured attributes were regressed on the leadership type manipulation. Results show that there was a positive relationship of the leadership type manipulation to implicitly measured independent identity (β = .20, p = .03), Machiavellianism (β = .22, p = .02), and narcissism (β = .31, p = .001), indicating
that the dark leadership manipulation was related to self-associations formed with implicitly measured dark attributes (see Figure 7). However, the leadership type manipulation was not related to self-identifying to explicitly measured independent identity ($\beta = -.06, p = .53$), Machiavellianism ($\beta = .04, p = .64$), or narcissism ($\beta = .02, p = .81$), as shown in Figure 8.

Hypothesis 2d stated that there will be a positive relationship between the dark leadership manipulation and self-associations formed to a pattern of implicitly measured (rather than explicitly measured) dark attributes\(^5\). To test this hypothesis, a binomial logistic regression was performed. The results show that the leadership type manipulation was positively related to self-associations formed to a pattern of implicitly measured dark attributes, $\beta = .32, p = .001$.

However, the leadership type manipulation was not related to self-identifying to a pattern of explicitly measured dark attributes, $\beta = -.08, ns$.

Overall, interacting with a dark leader resulted in forming self-associations to implicitly measured dark attributes. Interacting with a dark leader also resulted in forming self-associations to a pattern of implicitly measured dark attributes. However, the dark leadership manipulation did not lead to an endorsement of the explicitly measured dark attributes, or to a pattern of explicitly measured dark attributes. These results provide support for Hypothesis 2(a-d).

---

\(^5\) The dark attribute pattern variable is a binary categorical dependent variable
Leadership Type
(1=Dark, -1=Supportive)

Implicit Narcissism
.31**

Implicit Machiavellianism

Implicit Independent Self-Identity
.22**
.20**
.51***
.38***
.34***

Figure 7. Binomial logistic regression test to determine the effect of the leadership type manipulation on self-associations formed to implicitly measured dark attributes.

Note: N=109. ***p < .001, **p < .05, *p < .10. Standardized beta-weight coefficients are reported.

Leadership Type
(1=Dark, -1=Supportive)

Explicit Narcissism
.02

Explicit Machiavellianism

Explicit Independent Self-Identity
-.06 .49***
.36***
.43***

Figure 8. Binomial logistic regression test to determine the effect of the leadership type manipulation on self-associations formed to explicitly measured dark attributes.

Note: N=109. ***p < .001, **p < .05, *p < .10. Standardized beta-weight coefficients are reported.
Hypothesis 2e stated that self-concept deactivation will moderate the relationship between the leadership type manipulation and forming self-associations to a pattern of implicitly measured dark attributes. To test this hypothesis, a centered self-concept deactivation score, the leadership type manipulation, and an interaction term (leadership type X self-concept deactivation) were created. These variables were then used to predict self-associations formed to a pattern of implicitly measured dark attributes by performing a binary logistic regression test. A similar test was performed to predict a pattern of self-identified explicitly measured dark attributes. Results show that self-concept deactivation was a significant moderator of the relationship of the leadership type manipulation with forming self-associations to a pattern of implicitly measured dark attributes, which is shown in Table 4.6. As shown in Figure 9, self-associations formed to a pattern of implicitly measured dark attributes increased when self-concept deactivation occurred in the dark leadership condition relative to the supportive leadership condition (β = .19, p = .04). However, self-concept deactivation did not moderate the relationship of the leadership type manipulation with forming self-associations to a pattern of explicitly measured dark attributes (see Table 4.6). These results provide support for Hypothesis 2e.

Hypothesis 3a and 3b stated that forming self-associations to a pattern of implicitly measured dark attributes will predict sensitivity to moral issues involving the concept of having authority, rather than care to others. To test this hypothesis, moral sensitivity to the moral factors respect, authoritarian, attention to others, and a morally neutral factor, strategy were regressed on a pattern of implicitly measured dark attributes. Results reveal that a self-associated pattern of implicitly measured dark attributes was positively related to the moral factor
Table 4.6. Binary logistic regression test for moderating effects of self-concept deactivation on the relationship of the leadership type manipulation with self-associations formed to a pattern of implicitly and explicitly measured dark attributes.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Implicit Dark Attribute Pattern</th>
<th>Explicit Dark Attribute Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$SE_B$</td>
</tr>
<tr>
<td>Intercept</td>
<td>.49**</td>
<td>.23</td>
</tr>
<tr>
<td>Leadership Type</td>
<td>.60**</td>
<td>.22</td>
</tr>
<tr>
<td>Self-Concept Deactivation</td>
<td>-.08</td>
<td>.15</td>
</tr>
<tr>
<td>Leadership Type X Self-Concept Deactivation</td>
<td>.28**</td>
<td>.15</td>
</tr>
</tbody>
</table>

Note: $N=100$ ($n=55$ for Supportive Leadership, $n=45$ for Dark Leadership).  
***$p < .001$, **$p < .05$, *$p < .10$.  
1. Leadership Type coded as $1 =$ Dark Leadership, $-1 =$ Supportive Leadership  
2. Coefficients reported are unstandardized

Figure 9. Binary logistic regression test to determine the moderating effects of self-concept deactivation on the relationship of the leadership type manipulation with forming self-associations with a pattern of implicitly measured dark attributes.  
Note: Graph was generated by Dawson’s (2013) binary logistic regression macro.
Figure 10. Predicting moral sensitivity to respect, authoritarian, strategy, and attention to others from a self-associated pattern of implicitly measured dark attributes.

Note: N = 109. ***p < .001, **p < .05, *p < .10. Dark attribute patterns are coded as 1 = strong self-associations formed, -1 = self-associations did not form. Standardized beta-weight coefficients are reported.

authoritarian (β = .23, p = .01), respect (β = .19, p = .04), and attention to others (β = .20, p = .03), but not strategy (β = -.11, p = .26) as shown in Figure 10.

Figure 11 shows the pathways for predicting moral sensitivity to respect, authoritarian, strategy, and attention to others from a pattern of explicitly measured dark attributes. Results show that a pattern of explicitly measured dark attributes was not associated with sensitivity to the moral factors attention to others (β = -.11, ns), strategy (β = .11, ns), or respect (β = .05, ns), although it was marginally related to authoritarian (β = -.17, p = .09). (Note that this relationship
to the moral factor *authoritarian* is in the opposite direction of the significant relationship for the implicit measure).

![Diagram](image)

**Figure 11.** Predicting moral sensitivity to respect, authoritarian, strategy, and attention to others from a pattern of explicitly measured dark attributes.

**Note:** N=109. ***p <.001, **p <.05, *p <.10. Dark attribute patterns are coded as 1 = strong self-associations formed, -1 = self-associations did not form. Standardized beta-weight coefficients are reported.

Overall, there is support for Hypothesis 3a in that forming self-associations to a pattern of implicitly measured dark attributes increased moral sensitivity to the moral factor *authoritarian*, which included responses to events that were outcome oriented, indicated one’s status, and showed an indifference to harming others. However, there was no support for Hypothesis 3b,
which stated that forming self-associations to a pattern of implicitly measured dark attributes would decrease moral sensitivity to issues involving care to others. Last, self-identifying with a pattern of explicitly measured dark attributes did not increase moral sensitivity to any of the moral domains.

Mediation through dark attributes

To determine the statistical significance of dark leadership on moral sensitivity through a pattern of implicitly measured dark attributes, a bias-corrected bootstrapping (BCBS) procedure was performed. In this analysis, indirect effects are statistically significant when their 95% bias-corrected confidence interval (BaCI) excludes zero (Preacher & Hayes, 2008). The results of the bootstrapping analyses are shown in Table 4.7. These results indicate that self-associations formed to a pattern of implicitly measured dark attributes mediated the relationship of the leadership type manipulation with moral sensitivity to the moral factor respect (point estimate = .018, 95% BaCI .004, .044) and authoritarian (point estimate = .019, 95% BaCI .004, .045). In addition, self-associations formed to a pattern of implicitly measured dark attributes also mediated the relationship of the leadership type manipulation with moral sensitivity to the moral factor attention to others (point estimate = .025, 95% BaCI .004, .056).

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Point Estimate</th>
<th>95% BaCI Lower</th>
<th>95% BaCI Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moral sensitivity: Respect</td>
<td>.018</td>
<td>.004</td>
<td>.044</td>
</tr>
<tr>
<td>Moral sensitivity: Authoritarian</td>
<td>.019</td>
<td>.004</td>
<td>.045</td>
</tr>
<tr>
<td>Moral sensitivity: Strategy</td>
<td>-.009</td>
<td>-.033</td>
<td>.007</td>
</tr>
<tr>
<td>Moral sensitivity: Attention to Others</td>
<td>.025</td>
<td>.004</td>
<td>.056</td>
</tr>
</tbody>
</table>

N=109. Confidence intervals including 0 are interpreted as not-significant.
Hypothesis 4 stated that moral sensitivity to issues that involve having authority (i.e., the moral factor \textit{authoritarian}) will predict unethical behavior on a task that presented the opportunity for self-gain (see Chapter 3 for a description of this task and the operationalization of unethical behavior). Also, moral sensitivity to respect, attention to others, and strategy were examined on an exploratory basis. Using ZINB analyses, the results reveal that sensitivity to the moral factor \textit{authoritarian} was significantly associated with subordinate unethical behavior ($\beta = .97, p = .01$). However, sensitivity to the moral factors respect ($\beta = -.15, ns$), attention to others ($\beta = -.62, ns$), and strategy ($\beta = .12, ns$) did not predict subordinate unethical behavior as shown in Figure 12. These results indicate that for every one point increase in moral sensitivity to the moral factor \textit{authoritarian}, subordinate unethical behavior increased by a count of 2.64 as shown in Table 4.8. Thus, greater sensitivity to the moral factor \textit{authoritarian} is related to higher predicted counts of unethical behavior in a task that allowed individuals to cheat for self-gain. These results support Hypothesis 4.
Figure 12. ZINB test to determine the effect of moral sensitivity to respect, authoritarian, strategy, and attention to others on the predicted count of unethical behavior and the odds of membership into the ethical behavior group.

Note: N=109. ***p < .001, **p < .05, *p < .10. Standardized beta-weights are reported.
Table 4.8.
The predicted count of unethical behavior and the odds of membership into the ethical behavior group from moral sensitivity to respect, authoritarian, strategy, and attention to others

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Unethical Behavior</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE_B</td>
<td>e^B</td>
</tr>
<tr>
<td>Predicated Count of Unethical Behavior:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moral sensitivity: respect</td>
<td>-.15</td>
<td>.95</td>
<td>.86</td>
</tr>
<tr>
<td>Moral sensitivity: authoritarian</td>
<td>.97**</td>
<td>.35</td>
<td>2.64</td>
</tr>
<tr>
<td>Moral sensitivity: strategy</td>
<td>.12</td>
<td>.97</td>
<td>1.13</td>
</tr>
<tr>
<td>Moral sensitivity: attention to others</td>
<td>-.62</td>
<td>.78</td>
<td>.53</td>
</tr>
<tr>
<td>Membership to the Ethical Behavior Group:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moral sensitivity: respect</td>
<td>.02</td>
<td>.12</td>
<td>1.02</td>
</tr>
<tr>
<td>Moral sensitivity: authoritarian</td>
<td>-.16</td>
<td>.11</td>
<td>.85</td>
</tr>
<tr>
<td>Moral sensitivity: strategy</td>
<td>.02</td>
<td>.11</td>
<td>1.02</td>
</tr>
<tr>
<td>Moral sensitivity: attention to others</td>
<td>.09</td>
<td>.11</td>
<td>1.09</td>
</tr>
</tbody>
</table>

Note: N=109. Non-zero group represents the predicted count for unethical behavior for each type of moral sensitivity. Certain zero group represents the odds for belonging into the ethical behavior group for each type of moral sensitivity.

***p <.001, **p <.05, *p <.10.

Hypothesis 5 stated that dark leadership will be positively associated with subordinate unethical behavior through a pattern of self-associated dark attributes and sensitivity to the concept of having authority (i.e., the moral factor authoritarian). To analyze this hypothesis, direct paths from the leadership type manipulation to a pattern of implicitly measured dark attributes (i.e., Hypotheses 2[a-d]); paths from a pattern of implicitly measured dark attributes to moral sensitivity (Hypotheses 3[a-b]); and paths from moral sensitivity to subordinate unethical behavior (Hypothesis 4) were specified. In addition, self-concept deactivation was included as a moderator to the relationship of the leadership type manipulation with self-associated dark attributes (Hypothesis 2e). Last, self-reported interactional justice and revenge cognitions were
included to represent the process commonly identified by the literature to account for dark leadership effects on subordinate unethical behavior (Tepper, 2000; 2007). This pathway is also representative of the reflective processing pathway that is described in dual processing theory (see Figure 1, Path A; Haidt, 2001; Reynolds, 2006). In contrast, the processing pathway that is described in Hypothesis 5 is representative of a reflexive processing pathway. This pathway is also described in dual processing theory (Haidt, 2001; Reynolds, 2006) as seen in Path B of Figure 1.

Replicating earlier findings, these results reveal that the leadership type manipulation is positively related to self-associations formed to a pattern of implicitly measured dark attributes ($\beta = .27, p = .01$). In addition, this relationship was moderated by self-concept deactivation such that forming self-associations to a pattern of implicitly measured dark attributes was facilitated when self-concept deactivation occurred after interacting with a dark leader rather than a supportive leader ($\beta = .19, p = .03$). Forming self-associations to a pattern of implicit dark attributes also increased moral sensitivity to the moral factor respect, ($\beta = .18, p = .05$), authoritarian ($\beta = .26, p = .005$), and attention to others ($\beta = .23, p = .01$). Finally, sensitivity to the moral factor authoritarian positively predicted subordinate unethical behavior ($\beta = .65, p = .01$), indicating that for every point increase in moral sensitivity, unethical behavior increased by a count of 1.91 on a task that allowed individuals to cheat for self-gain. Sensitivity to the moral factors respect ($\beta = .15, ns$), attention to others ($\beta = -.34, ns$), and strategy ($\beta = -.22, ns$) did not predict unethical behavior. These results are shown in Figure 13.

These analyses were repeated with the exception of including explicitly measured dark attribute patterns. As shown in Figure 14, the leadership type manipulation did not significantly predict self-identification to a pattern of explicitly measured dark attributes ($\beta = -.05, ns$).
Figure 13. ZINB test to determine the predicted count of unethical behavior and the odds of membership into the ethical behavior group through reflective and reflexive moral processing pathways.

Note: N=100. *p < .10, **p < .05, ***p < .001. Dark attribute patterns are coded as 1 = strong self-associations formed, -1 = self-associations did not form. Standardized beta-weight coefficients are reported.
Figure 14. ZINB test to determine the predicted count of unethical behavior and the odds of membership into the ethical behavior group through reflective and reflexive moral processing pathways.

Note: N=100. *p < .10, **p < .05, ***p < .001. Dark attribute patterns are coded as 1 = strong self-associations formed, -1 = self-associations did not form. Standardized beta-weight coefficients are reported.
Also, self-concept deactivation did not moderate this relationship ($\beta = -0.04, ns$). Additionally, self-identification to a pattern of explicitly measured dark attributes did not predict moral sensitivity to the moral factors authoritarian ($\beta = -0.14, ns$), strategy ($\beta = 0.13, ns$), respect ($\beta = 0.08, ns$), or attention to others ($\beta = -0.08, ns$).

The results in Figures 13 and 14 also show the relationship between the leadership type manipulation and subordinate unethical behavior through interactional justice and revenge cognitions. Interestingly, these results reveal that the leadership type manipulation was negatively related to interactional justice ($\beta = -0.25, p = 0.01$), indicating that dark leaders were perceived to be less just than supportive leaders. Furthermore, perceived interactional justice significantly predicted revenge cognitions ($\beta = -0.27, p = 0.001$), indicating that social injustice increased vengeful thinking. Revenge cognitions in turn, positively predicted subordinate unethical behavior ($\beta = 0.63, p = 0.01$), indicating that for every one point increase in revenge cognitions, the predicted count for subordinate unethical behavior increased by 1.88. These results are consistent with those found in the literature (Tepper, 2000; 2007), and together with the previous analyses, provide additional support for dual processing models of morality. Overall, there is support for Hypothesis 5.

Resting state network deactivation assessed using gamma wave amplitudes

Resting state network deactivation was analyzed by averaging ERPs at electrodes Fp1 and Fp2 using gamma wave frequencies during five epochs beginning at the start of the study, during the pre- and post-self-activation measure epoch, during the leadership manipulation epoch, and at the end of the study as described in Chapter 3. In the following analyses, trait self-esteem, resilience, state self-esteem were entered as covariates based on research demonstrating
that variability in resting state neural networks can be modulated by individual differences for
coping to negative life events (Somerville, Kelley, & Heatherton, 2010).

Hypothesis 1b stated that dark leadership will attenuate the amplitude of gamma wave
ERPs compared to supportive leadership. This hypothesis was tested by using a mixed-model
repeated measures ANCOVA to compare the effect of the Leadership Type manipulation on
gamma wave amplitudes during five epochs (Time: study start, pre-self-activation measure,
leadership manipulation, post-self-activation measure, study end). Results indicated that
Mauchly’s test of sphericity was significant and that the assumption of sphericity had been
violated, $\chi^2(9)=58.86$, $p < .001$. Therefore, degrees of freedom were corrected using Greenhouse-
Geisser estimates of sphericity ($\varepsilon = .41$).

After controlling for individual differences in state and trait self-esteem and resilience,
results show that there was a marginally significant between-group effect for Time, Wilks’
Lambda = .46, $F (4, 9) = 2.66$, $p = .10$, $\eta^2 = .54$. However, the main effect for Time was qualified
by a significant Leadership x Time interaction, Wilks’ Lambda = .30, $F (4, 9) = 5.32$, $p = .02$,$\eta^2 = .70$. The significant interaction effect indicates that changes over time in gamma wave
amplitudes differed by the leadership condition. Specifically, simple main effects reveal that
there were significant group differences in gamma wave amplitudes during the leadership
manipulation epoch, $F (1, 16) = 7.56$, $p = .01$, with significant gamma wave amplitude
attenuation in the dark leadership group (M = -1.90, SD = 2.36) compared to the supportive
leadership group (M = .21, SD = .55). However, there were no differences between the dark
leadership (M = 1.0, SD = 2.45) and supportive leadership (M = -.27, SD = .71) groups for the start
epoch, $F (1, 16) = 2.48$, $p = .14$; the pre-self-activation measure epoch for the dark leadership
(M = .34, SD = 3.27) and supportive leadership (M = -1.11, SD = .64) groups, $F (1, 16) = .18$, $p = .67$;
the post-self-activation epoch for the dark leadership (M=.59, SD=2.65) and supportive leadership (M=.30, SD=.65) groups, $F(1, 16) = .11, p = .74$; or at the end of study for the dark (M=-.03, SD=2.38) and supportive (M=-.13, SD=.42) leadership groups, $F(1, 16) = .01, p = .91$.

These results are shown in Figure 15. Additionally, there were no significant within-group effects for Time, $F(1.65, 19.83) = .23, ns, \eta^2=.02$, or a Leadership x Time interaction, $F(1.65, 19.83) = 1.46, ns, \eta^2=.11$. Overall, these results support Hypothesis 1b.

Figure 15. Gamma wave amplitudes across five epochs. Gamma wave amplitudes were obtained by averaging neural ERPs at Fp1 and Fp2 electrode sites at the start of the study, during the pre-self-activation measures phase, during the leadership manipulation, during the post-self-activation measures phase, and at the end of the study.

Note: $N=17$ ($n=10$ for supportive leadership; $n=7$ for dark leadership). Brackets at each epoch indicate standard error bars.
Exploratory analyses

In this section, I performed exploratory tests to further investigate the dynamics of the self-concept, the significance of self-concept deactivation in the self-identification process, and the processing of moral identity. I also examined the effects of self-regulatory depletion, and whether interactions between affect and dark attributes predict subordinate unethical behavior.

Dynamic self-concept

Research has shown that the self-concept contains multiple self-aspects and identities that are not all accessible at the same time (McConnell, 2011; McConnell et al., 2012). Instead, the self-concept is a malleable structure that allows different aspects of the self to become more or less accessible in different contexts, which enables behavioral flexibility (LeBoeuf et al., 2010; McConnell, 2011; McConnell et al., 2012). Therefore, it is reasonable to expect that different aspects of the self-concept can become more or less salient in the context of supportive or dark leadership. For example, research has shown that supportive leaders, who respect and treat their followers with positive regard, can transform their followers’ sense of self to assume an interdependent identity. In this context, it is expected that interdependent self-related concepts will be more accessible than independent self-related concepts. This effect accounts for the effectiveness of transformational and authentic leaders as they can shift their followers’ focus from achieving self-interested goals to achieving collective goals (Cho & Dansereau, 2010; van Knippenberg, van Knippenberg, De Cremer, & Hogg, 2004; Walumbwa, Wang, Wang, & Schaubroeck, 2010). In contrast, dark leaders who often create threatening and depreciating types of contexts may make their subordinates’ self-concept inaccessible as I have previously demonstrated.
To test this idea, a mixed-model repeated measures ANOVA that compared the number of independent self-referential pronouns (e.g., ‘I,’ ‘me,’ and ‘my’) before and after the leadership type manipulation was performed. Results show that there was a significant main effect of Time, $F(1, 98) = 10.57, p = .001, \eta^2 = .10$. Specifically, the use of independent self-referential pronouns decreased from time 1 and time 2 for the supportive leadership condition, $t(54) = 2.02, p < .05, r = .26$, and from time 1 and time 2 for the dark leadership condition, $t(44) = 2.58, p = .01, r = .36$ (for means, see Table 4.9). However, the interaction between Time and the Leadership Type manipulation for predicting the use of independent self-referential pronouns was not significant, $F(1, 98) = .25, ns, \eta^2 = .00$, as shown in Table 4.10.

Table 4.9:
Mean independent self-referential pronoun use before and after the leadership type manipulation

<table>
<thead>
<tr>
<th>Leadership Type</th>
<th>Time 1</th>
<th>Time 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark Leadership</td>
<td>1.53(.78)</td>
<td>1.11(.83)</td>
</tr>
<tr>
<td>Supportive Leadership</td>
<td>1.36(.82)</td>
<td>1.05(.73)</td>
</tr>
</tbody>
</table>

*Note: N=100 (n=55 for Supportive, n=45 for Dark Leadership). Standard deviations are indicated in parentheses. The possible ranges for the number of independent self-referential pronoun at time 1 and time 2 are 0 to 5.*
Table 4.10:
Repeated measures ANOVA: Time and Leadership Type effects for generating independent self-referential pronouns

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Type III Sum Square</th>
<th>Mean Square</th>
<th>F</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Within</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1</td>
<td>6.62</td>
<td>6.62</td>
<td>10.57**</td>
<td>.10</td>
</tr>
<tr>
<td>Time x Leadership Type</td>
<td>1</td>
<td>.16</td>
<td>.16</td>
<td>.25</td>
<td>.00</td>
</tr>
<tr>
<td>Error</td>
<td>98</td>
<td>61.36</td>
<td>.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Between</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leadership Type</td>
<td>1</td>
<td>.63</td>
<td>.63</td>
<td>1.00</td>
<td>.01</td>
</tr>
<tr>
<td>Error</td>
<td>98</td>
<td>61.85</td>
<td>.63</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: N = 100 (n = 55 for Supportive Leadership, n = 45 for Dark Leadership).*

***p < .001, **p < .05, *p < .10.

Similar analyzes were performed for the use of interdependent self-referential pronouns (e.g., ‘we,’ ‘us,’ ‘our,’ ‘ours’) before and after the leadership type manipulation. Results show that the main effect for Time was not significant, $F (1, 98) = 1.99, ns, \eta^2=.02$. However, the interaction for Leadership Type and Time was significant, $F (1, 98) = 3.69, p = .05, \eta^2=.04$, as shown in Table 4.11. Pair-wise comparisons showed that there was a significant increase in the use of interdependent self-referential pronouns from time 1 to time 2 for those in the supportive leadership condition, $t (54) = -2.51, p = .01, r = .32$. However, the number of interdependent self-referential pronouns did not change significantly from time 1 to time 2 in the dark leadership condition, $t (44) = .34, ns, r = .05$. The means and standard deviations for the use of self-referential pronouns are provided in Table 4.12.

Overall, there is evidence that the self-concept is a malleable structure in the context of supportive leadership. Specifically, the content of the self-concept was observed to shift from an independent to an interdependent identity. However, the content of the self-concept (that includes
independent and/or interdependent self-referential pronouns) may be less accessible when this structure is inhibited by dark leadership.

Table 4.11:
Repeated measures ANOVA: Time and Leadership Type effects for generating interdependent self-referential pronouns

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Type III Sum Square</th>
<th>Mean Square</th>
<th>F</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1</td>
<td>1.69</td>
<td>1.69</td>
<td>1.99</td>
<td>.02</td>
</tr>
<tr>
<td>Time x Leadership Type</td>
<td>1</td>
<td>3.13</td>
<td>3.13</td>
<td>3.69**</td>
<td>.04</td>
</tr>
<tr>
<td>Error</td>
<td>98</td>
<td>83.16</td>
<td>.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leadership Type</td>
<td>1</td>
<td>.21</td>
<td>.21</td>
<td>.15</td>
<td>.00</td>
</tr>
<tr>
<td>Error</td>
<td>98</td>
<td>142.16</td>
<td>1.45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* N=100 (n=55 for Supportive Leadership, n=45 for Dark Leadership).

***p < .001, **p < .05, *p < .10.

Table 4.12:
Mean interdependent self-referential pronoun use before and after the leadership type manipulation

<table>
<thead>
<tr>
<th>Leadership Type</th>
<th>Time 1</th>
<th>Time 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark Leadership</td>
<td>2.22 (1.06)</td>
<td>2.15 (1.12)</td>
</tr>
<tr>
<td>Supportive Leadership</td>
<td>2.04 (1.21)</td>
<td>2.47 (.90)</td>
</tr>
</tbody>
</table>

*Note:* N=100 (n=55 for Supportive Leadership, n=45 for Dark Leadership).

***p < .001, **p < .05, *p < .10. The possible ranges for the number of interdependent self-referential pronoun at time 1 and time 2 are 0 to 5.
Effect of self-concept deactivation on dark attribute self-associations

The results obtained from previous analyses indicate that self-concept deactivation significantly moderated the relationship of the leadership type manipulation with the extent of self-associations formed to implicitly measured dark attributes (i.e., IAT scores equal to or greater than .30). In this exploratory analysis, I examined whether the strength of the formed self-associations depended on the extent to which self-concept deactivation had occurred. It is reasonable to expect that self-concept deactivation would be more important for developing stronger (vs. weaker) self-associations with patterns of dark attributes. To test this idea, two new sets of implicitly measured dark attribute patterns were re-created, using IAT scores that were greater than 0 (i.e., weak self-associations), and using IAT scores that were greater than .40 (i.e., moderate self-associations). These results were analyzed using a binary logistic regression test similar to the analysis for testing hypothesis 2d.

As shown in Figure 16, dark leadership increased self-associations formed to a pattern of implicitly measured dark attributes when IAT scores that were greater than 0 were included ($\beta = .25, p < .05$). Importantly, self-concept deactivation did not significantly moderate this relationship ($\beta = .03, ns$). However, self-concept deactivation was a significant moderator ($\beta = .20, p = .03$) for relating the effects of dark leadership to forming stronger dark attribute patterns (i.e., patterns using IAT scores equal to or greater than .40) as shown in Figures 17 and 18. These results suggest that although interacting with a dark leader can foster the self-identification process to dark attribute patterns, experiencing self-concept deactivation may be important to forming stronger self-associations with patterns of implicit dark attributes.
Figure 16. ZINB test to determine the effect of the leadership type manipulation on the predicted count of unethical behavior and the odds of membership in the ethical behavior group through self-association formed to patterns of implicitly measured dark attributes using IAT scores greater than 0, moral sensitivity, interactional justice, and revenge.

Note: N=100. *p < .10, **p < .05, ***p < .001. Dark attribute patterns are coded as 1 = self-associations formed, -1 = self-associations not formed. Standardized beta-weight coefficients are reported.
Figure 17. ZINB test to determine the effect of the leadership type manipulation on the predicted count of unethical behavior and the odds of membership in the ethical behavior group through self-association formed to patterns of implicitly measured dark attributes using IAT scores greater than 0.40, moral sensitivity, interactional justice, and revenge.

*Note: N=100. *p < .10, **p < .05, ***p < .001. Dark attribute patterns are coded as 1 = self-associations formed, -1 = self-associations not formed. Standardized beta-weight coefficients are reported.*
Figure 18. Binary logistic regression test to determine self-concept deactivation as a moderator to the relationship between the leadership type manipulation and self-association patterns formed to implicitly measured dark attributes with IAT scores greater or equal to .40.

Self-regulation and unethical behavior

Prior research also demonstrated that self-regulatory depletion increased unethical behavior by inhibiting peoples’ capacity to think through the consequences of their actions (Gino et al., 2011). It could be expected that high self-regulatory depletion may amplify unethical tendencies when revenge cognitions are especially salient. Also, the likelihood that people will belong to the ethical behavior group may be lower when they lack the self-regulatory resources needed to self-regulate behavior when thinking about revenge. To test this idea, an interaction term was created by centering revenge cognitions and self-regulatory depletion. Results show that the interaction term significantly predicted membership in the ethical behavior group ($\beta = - .23$, $p = .04$), as shown in Table 4.13. That is, there was a higher chance that people will belong in
the ethical behavior group if they have the self-regulatory resources needed to self-monitor their behavior when they were also thinking about revenge. These results are shown in Figure 19.

Table 4.13.
ZINB predicting unethical behavior from moral sensitivity and the interaction between self-regulatory depletion and revenge cognitions

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Peeking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted Count of Unethical Behavior:</td>
<td></td>
</tr>
<tr>
<td>Moral sensitivity: respect</td>
<td>.17 (.56) 1.18</td>
</tr>
<tr>
<td>Moral sensitivity: authoritarian</td>
<td>.67** (.34) 1.95</td>
</tr>
<tr>
<td>Moral sensitivity: strategy</td>
<td>.03 (.60) 1.03</td>
</tr>
<tr>
<td>Moral sensitivity: attention to others</td>
<td>-.40 (.61) .67</td>
</tr>
<tr>
<td>Self-regulatory depletion</td>
<td>-.07 (.66) .93</td>
</tr>
<tr>
<td>Revenge</td>
<td>.75 (.61) 2.12</td>
</tr>
<tr>
<td>Self-regulatory depletion X Revenge</td>
<td>.02 (.68) 1.02</td>
</tr>
<tr>
<td>Membership into the Ethical Behavior Group:</td>
<td></td>
</tr>
<tr>
<td>Moral sensitivity: respect</td>
<td>-.06 (.12) .94</td>
</tr>
<tr>
<td>Moral sensitivity: authoritarian</td>
<td>-.17 (.11) .84</td>
</tr>
<tr>
<td>Moral sensitivity: strategy</td>
<td>.00 (.11) 1</td>
</tr>
<tr>
<td>Moral sensitivity: attention to others</td>
<td>.11 (.11) 1.12</td>
</tr>
<tr>
<td>Self-regulatory depletion</td>
<td>.05 (.11) 1.05</td>
</tr>
<tr>
<td>Revenge</td>
<td>.06 (.13) 1.06</td>
</tr>
<tr>
<td>Self-regulatory depletion X Revenge</td>
<td>-.23** (.11) .79</td>
</tr>
</tbody>
</table>

*Note: N=109, ***p <.001, **p <.05, *p <.10*
Figure 19. Interaction between revenge cognitions and self-regulatory depletion for predicting membership to the ethical behavior group.

*Moral identity and explicit moral processing*

Moral identity refers to a collection of traits (e.g., caring, fairness, honesty) that guide morally righteous behavior (Aquino & Reed, 2002). Empirical research demonstrates that people who are guided by a moral identity choose to behave morally as a way to maintain self-consistency with their underlying values (Aquino & Reed, 2002; Gino et al., 2011). In order to assess moral identity, individuals were asked to self-report the extent to which they self-identified to various moral traits and characteristics (see measurements in Chapter 3). Because this measure requires deliberative reasoning, moral identity may influence more explicit (vs. implicit) constructs and processes. This hypothesis was tested by using moral identity to predict constructs that are likely processed at implicit levels (e.g., moral sensitivity, self-associations to implicit dark attributes) and explicit levels (e.g., revenge cognitions). As shown in Figure 20, moral identity did not influence forming self-associations to patterns of implicitly measured dark attributes ($\beta = .01, ns$), moral sensitivity ($authoritarian, \beta = .06, ns; respect, \beta = .00, ns; strategy, \beta$
=.07, ns; attention to others, β =-.03, ns), subordinate unethical behavior (β =.37, ns), or membership in the ethical behavior group (β =-.06, ns). However, moral identity was significantly related to revenge cognitions (β =-.30, p =.005). This shows that individuals with a moral identity may be less inclined to form revenge cognitions after interacting with a dark leader. These results provide evidence that moral identity operates through explicit rather than implicit processes, and it may influence moral behavior by affecting how individuals think about immoral actions.

Figure 20. ZINB test to determine the effect of moral identity on subordinate unethical behavior through revenge cognitions and self-associations formed to a pattern of implicitly measured dark attributes.

Note: N=109, ***p <.001, **p <.05, *p <.10
Explicit traits and unethical behavior

In the previous analyses, self-identifying with explicitly measured dark attributes did not predict unethical behavior through implicit processes, such as moral sensitivity. In this analysis, alternative processes were examined. It could be reasoned that explicitly measured dark attributes would influence deliberative processes, and would therefore, operate through revenge cognitions rather than moral sensitivity. To test this idea, a pathway from patterns of explicitly measured dark attributes to revenge cognitions was specified. The results show that self-identifying to a pattern of explicitly measured dark attributes was significantly related to revenge cognitions ($\beta = .21, p = .003$). Vengeful thinking in turn, significantly predicted unethical behavior ($\beta = .38, p = .01$). However, implicit self-associations formed to a pattern of dark attributes did not significantly predict the desire to seek vengeance ($\beta = .01, p = .91$). This suggests that the effect of explicitly measured dark attribute patterns may operate through reflective (vs. reflexive) processes to influence unethical behavior.

State affect, traits, identity, and unethical behavior

Exploratory analyses were also performed to examine the effects of state affect on moral decision making and unethical behavior. These analyses also test whether state affect interacted with implicitly or explicitly self-identified dark attributes to influence moral outcomes. The rationale for these analyses are based on research showing how identity and power-oriented traits (i.e., Machiavellianism) are associated with behavioral activation systems (Lee et al., 2000) that elicit behavior when different emotions (e.g., anger, positive emotions) are experienced (Carver, 2004; Harmon-Jones, 2007). Consistent with these ideas, results show that state negative affect, and more specifically, anger, was positively related to revenge cognitions ($\beta = .35, p = .10$; $\beta$
=.44, p <.001, respectively); however, state negative affect and anger did not predict unethical behavior (β =-.51, ns; β =.77, ns, respectively). As expected, positive state affect did not predict revenge cognitions (β =.10, ns), or unethical behavior (β =.11, ns).

Interaction terms were also created to examine whether explicitly and implicitly measured dark attribute patterns interacted with state affect to predict unethical behavior. These results revealed several interesting findings. First, the interaction between the explicit individual identity measure and state anger significantly predicted revenge cognitions (β =.26, p =.03). This shows that self-reported revenge cognitions were higher among those who had experienced anger and self-identified with an individual identity compared to those who did not (see Figure 21). A similar interaction pattern was observed for explicitly measured Machiavellianism (β =.32, p =.01) (see Figure 22). Last, the interaction between state anger and explicitly measured Machiavellianism was significant for predicting unethical behavior (β =.78, p =.04). This finding shows that for every one point increase in the explicit Machiavellianism measure, unethical behavior increased by a count of 2.18 when individuals also experienced state anger (see Figure 23). No significant relationships were found between state affect and any of the implicit dark attribute measures.
Figure 21. Interaction between explicit individual identity and state anger for predicting revenge cognitions.

Figure 22. Interaction between explicit Machiavellianism and state anger for predicting revenge cognitions.

Figure 23. Interaction between explicit Machiavellianism and state anger for predicting unethical behavior.
Summary

The results obtained in the focal study demonstrate that dark leadership influenced the extent of subordinate unethical behavior in a lab setting. The patterns of significant mediated effects are consistent with theoretical notions of reflective and reflexive pathways described in dual processing morality theory (Haidt, 2001; Reynolds, 2006). Hypothesis 1 stated that dark leadership inhibits the self-concept, which was assessed by comparing changes in the use of independent and/or interdependent self-referential pronouns before and after participants had interacted with a supportive leader or a dark leader. This hypothesis was supported in that self-concept deactivation occurred following an interaction with a dark leader, but not a supportive leader.

Hypothesis 1b stated that dark leadership will result in reduced gamma wave amplitudes that are associated with resting state network activity, compared to supportive leadership. This hypothesis was supported as participants’ gamma wave amplitudes were suppressed during an interaction with a dark leader rather than a supportive leader. In fact, gamma wave amplitudes did not attenuate among participants in the supportive leadership condition.

Hypotheses 2(a-e) stated that dark leadership will facilitate the forming of self-associations to implicitly measured dark attributes that included Machiavellian and narcissistic traits, and an independent identity. This hypothesis was supported. However, self-identification to explicitly measured dark attributes did not occur. Importantly, self-concept deactivation was found to moderate the extent to which self-associations had formed to a pattern of implicitly measured dark attributes. That is, participants formed stronger self-associations to a pattern of implicitly measured dark attributes when their self-concept became inactive after experiencing dark leadership.
Hypothesis 3a stated that forming self-associations to a pattern of dark attributes will increase moral sensitivity to issues that involved having authority (issues that demonstrate power, status, and an indifference to causing harm), which was reflected in the moral factor authoritarian. This hypothesis was supported as participants viewed events that described another person’s status, and showed indifference to causing harm to others, as being important when they formed self-associations to a pattern of implicitly measured dark attributes. However, self-identifying to a pattern of explicitly measured dark attributes did not predict moral sensitivity to the moral factors respect, authoritarian, strategy, or attention to others. Also, Hypothesis 3b was not supported as self-associations formed to a pattern of implicitly measured dark attributes were positively related to moral issues that conveyed another’s social predicaments, as shown in the moral factor attention to others.

Hypothesis 4 stated that moral sensitivity to issues that involve having authority will predict unethical behavior on a task that permitted opportunism. This hypothesis was supported as moral sensitivity to issues that involve having authority (i.e., the moral factor authoritarian) increased opportunistic behavior in a task that allowed participants to cheat for self-gain.

Finally, a model that included all of the study’s hypotheses, in addition to an alternate mediational pathway that included interactional justice and revenge cognitions was specified to predict unethical behavior. This analysis indicated that dark leadership effects operate through implicit processes, and it provides support for Hypothesis 5. Interestingly, the explicit processing pathway through interactional justice and revenge was also significant, and this provided support for dual processing moral theory.

Finally, exploratory analyses were conducted to examine the dynamism of the self-concept in two different leadership contexts. These results show that interacting with a dark
leader deactivated participants’ self-concepts as independent and interdependent self-referential pronouns became less accessible. However, supportive leadership transformed participants’ self-concepts by making interdependent (vs. independent) pronouns more accessible at a subconscious level. This shift was not observed in the dark leadership condition.

In addition, the role of self-concept deactivation in the self-identification process was further examined. These results indicated that self-concept deactivation facilitated the process of forming stronger self-associations to a pattern of implicitly measured dark attributes after experiencing dark leadership.

The effects of moral identity on explicit and implicit moral constructs were also examined. Because the ability to endorse moral traits requires that people are aware of their moral values, it was posited that moral identity would impact explicit rather than implicit moral constructs. This hypothesis was confirmed as participants who self-identified with a moral identity were less inclined to seek revenge after experiencing unjust leadership. This suggests that moral identity operates through explicit processes and it does so by influencing the cognitions that may lead to unethical behavior, such as revenge. Moral identity did not influence the process of forming self-associations to a pattern of implicitly measured dark attributes or moral sensitivity.

Also, the influence of self-regulatory depletion on unethical behavior was explored in a moderated-mediated regression test. These results showed that the odds of behaving unethically were lower among participants with the cognitive resources needed to reflect upon the consequences of seeking revenge.
In addition, a mediational pathway that related explicit dark attributes to unethical behavior was explored. It was posited that explicitly measured dark attributes may influence reflective types of processes, such as revenge cognitions, rather than implicit processes. Consistent with this idea, the results showed that self-identification to explicitly measured dark attributes were related to revenge cognitions that in turn, predicted unethical behavior. However, forming self-associations to a pattern of implicit dark attributes did not lead to vengeful thinking. Thus, explicitly measured dark attributes may operate through reflective processes.

Last, exploratory analyses examined how state affect influenced moral decision making and behavior. These results showed that experiencing negative emotions, such as anger, predicted revenge cognitions and unethical behavior. Interestingly, several significant findings emerged for the interaction between the explicit individual identity measure, the explicit Machiavellianism measure, and the state anger measure for predicting revenge cognitions and unethical behavior. Notably, self-identifying with a pattern of explicitly measured individual identity increased vengeful thinking when anger was experienced. Also, a moderated-mediated regression for predicting unethical behavior from the interaction of anger and the explicit Machiavellianism measure showed that unethical behavior increased when state anger was experienced, and that process involved forming thoughts of revenge.
CHAPTER V

DISCUSSION

Prior research has emphasized the role of vengeance and retaliation against abusive supervisors as the principle mechanism relating this type of leadership with subordinate unethical behavior (e.g., Aryee et al., 2007; Liu et al., 2010; Rafferty & Restubog, 2011; Tepper, 2000). This study used the theoretical perspectives provided by the dual processing theory of morality (Haidt, 2001; Reynolds, 2006) to investigate how nonconscious mechanisms that involve the self-concept and moral sensitivity also affect subordinate unethical behavior. In particular, this study posited that the malleability of the self-concept would allow individuals to form self-associations to the traits, characteristics, and beliefs of others whom they had observed, especially when this structure is inactive. Indeed, the literature has shown that when individuals are asked to think about the self stereotypically (Gabriel & Young, 2012; Kaufman & Libby, 2012), or when they felt threatened by a rival (Slotter et al., 2013), they identified with the others’ traits and beliefs at an explicit and implicit level. The present study elaborated on these findings by investigating whether dark leadership can inhibit their subordinates’ self-concepts, thereby causing subordinates to form self-associations to dark attributes that generally characterize dark leaders. Furthermore, it was believed that the process of forming self-associations to implicit dark attribute patterns would affect how subordinates perceive and respond to events with moral implications.
In this study, the effects of dark and supportive leadership on the self-concept were assessed using EEG, as well as traditional social-cognitive assessments. It was expected that interacting with dark leaders would attenuate gamma wave amplitudes that are associated with activity in resting state neural networks (ventral and dorsal mPFC), which are known to maintain the representation of the self-concept when at rest (Gusnard, 2005; Mantini et al., 2007). This hypothesis was examined in an exploratory study. In the focal study, measures of self-activation were used to measure the accessibility of the self-concept, and the IAT was used to assess the extent of the self-identification process. Also, a moral detection task and an ethical task were used to assess moral sensitivity and unethical behavior. Last, the protocol analysis procedure could not be evaluated due to technical errors that occurred with the storing of this data.

Summary and Implications

Overall, many of the study’s hypotheses were supported. Notably, unethical behavior occurred more frequently when participants interacted with a dark leader than a supportive leader. Although the typical literature would attribute this effect to retaliatory cognitions and the desire for revenge (Tepper, 2000; Tierney & Tepper, 2007), the results obtained from this study demonstrated that unethical behavior was also driven by implicit processes. Specifically, it was shown that interacting with a dark leader (vs. a supportive leader) attenuated the activation of participants’ self-concepts as revealed by the diminished accessibility to the contents of this structure (i.e., independent or interdependent pronouns). Additionally, the effects of dark leadership on resting state neural networks were examined by measuring gamma wave amplitudes using EEG (Mantini et al., 2007). These results showed that there were significant group differences in gamma wave amplitudes during the leadership manipulation temporal epoch. Notably, gamma wave amplitudes were attenuated when participants had interacted with a
dark leader, but not a supportive leader. Therefore, resting state networks were deactivated in the dark leadership condition relative to the supportive leadership condition. Together, the results obtained from the electrophysiological measure and more traditional social-cognitive measures converged to demonstrate that the self-concept was less accessible following the dark leadership interaction.

The results from this study are also consistent with the social-cognitive research on experience-taking, a phenomenon that involves the tendency for people to self-identify with the attributes that they observe in others (Kaufman & Libby, 2012). Interestingly, the self-identification process to dark leadership traits – i.e., Machiavellian and narcissistic traits, and an independent identity – occurred at nonconscious levels when assessed by the IAT. However, dark attributes were weakly endorsed by all participants when assessed using explicit measures; a phenomenon that could be explained by peoples’ desire to maintain a positive social image (e.g., Ashford, Blatt, & VandeWalle, 2003; Stewart et al., 2009).

Rather than analyze each dark attribute separately, this study utilized a pattern approach to understand how the self-concept as a holistic structure affects the processing of moral information. Pattern approaches maintain that configurations of traits and individual characteristics are more meaningful than are traits that had been examined individually (Foti et al., 2012; Foti & Hauenstein, 2007). Indeed, this study demonstrated that patterns had superior predictive validity for differences in moral perception and subsequent (un)ethical behavior than when consideration was given to isolated traits and self-identities.

The results obtained from this study also provide support for the literature on moral sensemaking (Thiel et al., 2012), which argues that moral perceptions are malleable based on the values, goals, and ideologies that are salient (Ginges, Atran, Sachdeva, & Medin, 2011; Rai &
Fiske, 2011). Consistent with this idea, this study showed that the process of forming self-associations to a pattern of dark attributes increased peoples’ sensitivity to the concept of authority (i.e., the moral factor authoritarian) that demonstrated the importance of status, power, and an indifference to others. Forming self-associations to a pattern of implicitly measured dark attributes also increased peoples’ sensitivity to events that signified respect to authority (characterized the moral factor respect); as well as issues that described another’s social predicaments (the moral factor attention to others). Although increased sensitivity to the moral factor respect was not hypothesized, it makes intuitive sense when examined alongside the dark attributes that individuals likely had self-identified. That is, formed self-associations to dark attributes that value dominance, power, and control (Dahling et al., 2009; Johnson et al., 2012; Morf, 1994) may co-occur with the desire to be respected by others.

However, increased moral sensitivity to attention to others was not expected. Although speculative, forming self-associations to dark attributes may increase peoples’ sensitivity to events that reveal important social information (i.e., the moral factor attention to others) by way of remaining watchful or vigilant of others. Indeed, remaining watchful of others is consistent with the behaviors of those described as being narcissistic and Machiavellian, since this behavior better allows them to control and manipulate others (Coté et al., 2011; Raskin & Hall, 1979). Alternatively, experiencing self-criticism from others (similar to social rejection and ostracism) may cause individuals to become more receptive to social and interpersonal cues at a perceptual level (i.e., social monitoring) as a self-protective mechanism (e.g., Carter-Sowell, Chen, & Williams, 2008; Gardner, Pickett, Jefferis, & Knowles, 2005). However, this does not necessarily mean that people would actually experience concern for others.
Last, the results of this study support the hypothesis that sensitivity to particular moral concerns is predictive of subordinate unethical behavior. In the context of this study, participants had the opportunity to cheat on a task that provided them with a chance to increase their odds at winning one of several prizes in a monetary lottery drawing (i.e., Amazon gift cards). Given the value of each prize and the task's parameters (e.g., 5 minute time limit, requirement that problems are solved sequentially in order, trick questions), this task was perceived as being challenging and competitive. As such, it was hypothesized that sensitivity to the concept of authority would positively predict unethical behavior. Results supported this hypothesis in that forming self-associations to a pattern of implicit dark attributes increased sensitivity to the moral factor authoritarian, which in turn, increased the likelihood of subordinate unethical behavior.

Consistent with the dual processing moral theory (Haidt, 2001; Reynolds, 2006), results from this study also demonstrate that reflective processes, such as seeking revenge, remain important in the relationship of dark leadership with subordinate unethical behavior. Overall, these results present a more comprehensive understanding of the processes that lead to (im)moral decision-making and behavior, and they challenge the foundational perspectives that have guided the dark leadership literature.

Theoretical and Practical Implications

These study findings present several theoretical and practical contributions that advance the dark leadership literature. First, this study demonstrates that both reflective and reflexive processes can influence moral perceptions and behavior, even though the literature emphasizes the importance of deliberative cognitions. This understanding is important as it can facilitate the development of integrative moral theories and practices for developing moral organizations. For
example, research that neglects the significance of implicit processes may have contributed to the field’s focus on identifying individual differences that predict unethical behavior (Berry, Worthington, O’Connor, Parrott, & Wade, 2005). Also, theories that narrowly focus on deliberative moral processes have helped perpetuate the belief that moral decision making and behavior are stable and predictable (Aquino & Reed, 2002), rather than being dynamic and malleable (Klotz & Bolino, 2013; Sachdeva et al., 2009; Thiel et al., 2012). Importantly, the finding that moral behavior can be shaped by implicit processes suggest that organizational interventions that depend on enforcing rules to prevent unethical behavior may be ineffective; especially when individuals are unable to recognize the immorality of their actions. According to Rest (1986), moral behavior critically depends on the ability to recognize that an event is morally relevant. However, when moral perceptions are influenced by subtle goals and values, individuals may fail to see how their behaviors are deviating from societal norms. This finding can explain why collectives may behave unethically when actions enable the group to succeed (Pearsall & Ellis, 2011), or when leaders become morally lenient based on their expected role (Hoyt, Price, & Poatsy, 2013). These findings also demonstrate that moral behavior can be malleable, changing as different identities and traits become salient (Leavitt et al., 2012).

These findings also contribute to research that investigates how unethical climates and norms develop. Research has shown that unethical norms and climates develop gradually as organizational members deviate from their organization’s ethical standards (Gino & Bazerman, 2009). Over time, deviant behaviors can become normalized, which helps perpetuate unethical climates and cultures (Gino & Bazerman, 2009). Interestingly, one way for this process to occur is through a self-identification process where organizational members form self-associations to various attributes that will change how people view moral issues. In this way, contagion
processes (Gino, Ayal, & Ariely, 2009) may lead organizational members to adopt increasingly lenient moral standards when implicitly self-identified goals and values bias their moral perceptions. This perspective challenges the belief that (un)ethical behavior is solely determined by deliberative processes (Jones, 1991; Kolhberg, 1981; Rest, 1986), and it acknowledges the difficulties for developing interventions that can help curb, or eliminate unethical climates or cultures (Sims & Brinkman, 2002). This finding is especially relevant to leaders in modern organizations who have to balance competing moral goals and values within culturally diverse workplaces (Holt & Seki, 2012; Smith & Lewis, 2012).

The finding that moral decision making and behavior are affected by shifting moral perspectives (i.e., sensitivities) also creates a challenge for traditional conceptualizations of ethical leadership (Brown & Treviño, 2006). The ethical leadership literature defines ethical leaders as those who contribute to the development of moral organizations by role modeling and regulating employee behavior through systems of rewards and punishments (Brown & Treviño, 2006). This perspective implies that ethical leaders are cognizant of moral rules and are capable of determining the best moral practices. However, it may be especially difficult for leaders to foresee the consequences of their actions when organizational events unfold probabilistically based on present contexts (Brown & Eisenhardt, 1999; Lord & Dinh, 2014; MacKay & Chia, 2013) and interpersonal dynamics (Gulati, Sytch, & Tatarynowicz, 2012; Langley, Smallman, Tsoukas, & Van de Ven, 2013). In these situations, leaders may experience “bounded rationality” that limit their ability to rationalize effective strategies to lead moral organizations (Sims & Brinkman, 2002; Sonenshein, 2007; Thiel et al., 2012). Consequently, there may be more to ethical leadership than is described by traditional ethical leadership theories. For example, the literature does not address how leaders determine what actions are moral vs. immoral. For
example, is it moral for leaders to optimize an organization’s survival and ability to compete? Or would moral behavior be those that look after humanity’s long-term goals, such as ensure that their organizational polices are environmentally responsible? Interestingly, findings from this study can be applied broadly to suggest that (un)ethical decision making may be based on the leader’s identities, goals, and objectives that are currently active, rather than on a strict set of universal moral rules.

*Revenge cognitions and moral sensitivity as entangled processes.* In this study, it was shown that implicit and explicit processes influenced moral behavior, which may occur as individuals explicitly thought about seeking revenge or when sensitivities to environmental opportunities were affected. Although the dual processing theory of morality (Haidt, 2001; Reynolds, 2006) suggests that both implicit and explicit processes are important, research has not explained how these two processes relate to one another. For instance, is it that deliberative moral processes operate simultaneously, but independently from implicit moral processes? Or is it that these processes operate on different temporal orders.

To illustrate this difference, it is possible that deliberative processes are dissociated from nonconscious processes when they operate simultaneously in parallel. In this case, individuals can experience conflicts between explicit and implicit processes. However, it is also possible that pre-attentional processes can affect deliberative cognitions when these two processes operate on a more sequential order. This can be demonstrated for example, when shifts in moral sensitivity change how individuals would evaluate the morality of their actions. This latter perspective suggests that implicit and explicit moral processes are entangled (i.e., non-decomposable), such that the processing of moral perception precedes, and can affect slower deliberative reasoning. This perspective on entangled processes is consistent with research that shows how conscious
states of awareness emerge from conflicts that occur among nonconsciously processed goals (Dehaene & Naccache, 2001; Kleiman & Hassin, 2013).

The idea that explicit and implicit processes are entangled presents a novel question that concerns the practice of comparing explicit and implicit measures for predicting moral outcomes. This is because entanglement suggests that implicit and explicit processes are both important in moral decision making, but that they operate on different temporal orders. For example, explicit methodologies, such as those that assess revenge cognitions, are typically retrospective by asking individuals to report their past or current intentions. Intentions are then used to predict future behavior. However, it may be possible that these sampled intentions did not previously exist in memory. Instead, they were created upon measurement as if they had been suggested by the measures’ questions and instructions (Gabora, Rosch, & Aerts, 2008). For instance, self-benefitting behaviors may be generally perceived as being moral, but when explicitly measured, this behavior could be re-interpreted as the desire to seek revenge. Although this possibility requires further investigation, it suggests that there are several advantages of implicit methodologies for understanding moral decision making and behavior.

First, implicit measures assess the normative processes that influence moral tendencies over longer periods of time (McClelland, Koestner, & Weinberger, 1989). For instance, goals and values can exhibit equifinality in different contexts (Dalal & Hulin, 2008; Klein, Austin, & Cooper, 2008), but they are not captured by explicit measures that narrowly assess whether specific goal-driven behaviors were enacted. Additionally, explicit measures are de-contextualized, are susceptible to response distortion (Stewart et al., 2009), and may not help explain how vengeful thoughts are created (Bing, Davison, Stewart, James, Green, & McIntyre, 2007). To the extent that implicit and explicit processes are entangled, however, it may be
possible to understand how conscious moral thoughts are developed over time when they are influenced by active implicit goals, values, and identities.

Although several limitations have been identified that concern the use of explicit methodologies, it is important to note that they are useful in other ways. For example, explicit methodologies can provide insight for how complex moral decisions (those that involve integrating multiple sources of information) are consciously formulated (e.g., Halevy, Chou, & Murnighan, 2012). Explicit measures are also required for capturing emergent moral thought processes (e.g., insight), which do not have comparable analogues at lower, nonconscious levels (Aerts, Broekaert, & Gabora, 2011; Kleiman & Hassin, 2013).

*Self-concept and morality.* The results obtained from this study also support recent research that emphasizes the importance of the self-concept in moral thought and behavior (Conway & Peetz, 2012; Klotz & Bolino, 2013; Sachdeva et al., 2009). Although prior theorizing has considered how reflecting on the moral self can lead to unethical thinking and behavior (a phenomenon referred to as ‘moral licensing’; Conway & Peetz, 2012; Klotz & Bolino, 2013; Sachdeva et al., 2009), this study adds to the literature by exploring how moral behavior is influenced when the self-concept becomes inactive from hostile interpersonal interactions. These results support previous findings that demonstrate the malleability of the self-concept (McConnell, 2011; McConnell et al., 2012). They also show how individuals can incorporate another’s traits and characteristics into their self-structure to influence goals and self-perceptions (Gabriel & Young, 2012; Kaufman & Libby, 2012; Slotter et al., 2013). Interestingly, that participants in this study self-identified to dark attributes at an implicit, rather than at an explicit level, illustrates the dissociation commonly found in explicit and implicit measures (Greenwald & Banaji, 1995; Greenwald et al., 2009). On one hand, this finding may mean that including
implicit and explicit methodologies in moral research is important (Bing et al., 2007). On the other, the dissociation between the two measurement types suggest that using implicit measures may be advisable when individuals are motivated to appear socially desirable, especially when negative traits and characteristics are accessed.

This study also contributes to the literature by exploring two ways of assessing the self-concept. First, the salience of the self-concept can be assessed by asking individuals to spontaneously generate self-referential pronouns. This approach assesses self-activation by the extent to which self-referential content can be accessed through processes of spreading activation. Second, the self-concept can be assessed by measuring changes in gamma wave amplitudes that are associated with resting state neural networks (Gusnard, 2005; Mantini et al., 2007). Notably, convergent results that were obtained from these two methodological approaches yielded several implications for theory and practice.

First, the use of electrophysiological and social-cognitive measures provides added insight for moral processes by triangulating theory. In this study, the deactivation of the self-concept was reflected both in the reduced use of self-referential pronouns, as well as reduced gamma wave amplitudes in resting state networks that process self-related information. Thus, the convergence of these two measures provide greater confidence for pinpointing the involvement of the self-concept in moral thinking and behavior. Second, research that carefully attends to the neurological structures that maintain the self-concept not only advances morality research by informing when this structure influences thought and behavior, it also opens the door for the development of richer theory through interdisciplinary research. As such, neuropsychological perspectives on moral processing highlights the importance of understanding the processes that affect moral decision making and behavior, and it can help the field break away its reliance on
static, dispositional-based theories. At a broader level, research that incorporates neuropsychological perspectives for understanding morality can facilitate the development of theory that considers the role of diverse processing systems (e.g., emotions, embodiment) in ethical decision making and behavior. Research has shown for example, that the brain is a highly interconnected structure (Bassett & Gazzaniga, 2011), which enables different processing structures to interact. Despite this, moral research has proceeded by examining how processing systems responsible for symbolic thought, emotions, and embodiment are processed independently from other processing systems.

A notable finding was that the use of self-referential pronouns shifted following the dark and supportive leadership manipulation. That is, independent self-referential pronouns (‘I,’ ‘me,’ ‘my’) were generated less frequently following both leadership type manipulations. However, the use of interdependent self-referential pronouns increased after experiencing supportive leadership, but not dark leadership. Interestingly, the shift from using independent self-referential pronouns to interdependent self-referential pronouns could demonstrate the transformation of the self-concept from an independent entity to an interdependent entity in the context of supportive leadership. This finding supports the belief that the self-concept is context dependent (McConnell, 2011; McConnell et al., 2012; Morling & Kitayama, 2008), where different self-aspects (and its contents) can be assessed in response to different situations. This effect can also account for the effectiveness of transformational and authentic leaders. Since these leaders can shape how followers perceive themselves in relation to others (i.e., as an interdependent entity rather than as an independent entity), they can re-focus their followers’ efforts towards achieving organizational goals rather than self-interested goals (Cho & Dansereau, 2010; van Knippenberg et al., 2004; Walumbwa et al., 2010). Interestingly, the transformation of the self-concept was not
associated with reduced gamma wave amplitudes among participants in the supportive leadership condition. This suggests that although the self-concept remains active under most situations (as revealed by resting state neural network activity), its content can be differentially accessed depending on experienced contexts (as revealed by social-cognitive measures). Hence, there are clear advantages to understanding the self from a neuropsychological perspective.

*Moral identity and self-regulatory depletion.* In an exploratory analysis, I examined self-regulatory depletion as a moderator to the relationship of revenge cognitions with subordinate unethical behavior. Prior research demonstrates that self-regulatory depletion affects unethical behavior by preventing individuals from reasoning through their choices and decisions (Gino et al., 2011). These findings were extended to examine if self-regulatory resources can mitigate the effects of revenge cognitions, such that individuals with self-regulatory resources are more effective at self-monitoring their moral behavior. Consistent with this idea, the odds of belonging in the ethical behavior group was higher among individuals with self-regulatory resources when they also thought about seeking revenge on the experimenter. These findings imply that thinking about revenge may not always lead to vengeance. Instead, if individuals have the resources to reason through their behavioral choices, they may realize the consequences of their actions. In this situation, the reflective processing pathway may have a much stronger influence on ethical behavior than the reflexive processing pathway.

I also examined the influence of moral identity on ethical decision making and behavior based on the popularity of this construct in the morality literature (e.g., Aquino & Reed, 2002; Gino et al., 2011; Skarlicki et al., 2008). Typically, moral identity assessments occur by asking individuals to self-report whether they are guided by moral traits (e.g., honesty, fairness; Aquino & Reed, 2002). Because this measure requires that individuals are aware of the values that are
associated with these traits, moral identity was believed to influence behavior through explicit, rather than implicit processes. Consistent with this idea, I found that moral identity mitigates the desire to seek revenge upon experiencing social injustice. Moral identity however, did not influence constructs that were measured implicitly, such as moral sensitivity. Nevertheless, it reaffirms organizational practices that help employees foster a moral identity as a way of discouraging counterproductive work behaviors (Gino et al., 2011; Skarlicki et al., 2008).

Limitations and Future Research

The findings from the current study provide several areas for future research. First, even though actual subordinates can learn of their leader’s thoughts and actions through personal correspondence, social networks, and organizational memos, future research is needed to determine if more direct experiences can affect the self-identification process. For example, senior level managers may interact frequently and directly with organizational managers, but not with lower level employees. This implies that managers may be more vulnerable to the effects of dark leadership as these experiences are direct and personal. In comparison, lower level employees may experience a self-identification buffer when they learn of their leaders through their managers. However, self-identification cascades that involve employees endorsing their manager’s traits may occur. Future research is needed to explore if these possibilities are involved in the development of unethical climates and norms.

Another avenue for future research concerns the types of tasks that are used to assess (un)ethical behavior. In this study, the ethical task was disguised as an activity with a potential reward (i.e., winning a monetary prize). This task was also embedded within the context of a study and so its purpose was subtle in nature. Consequently, the decision to engage in ethical or
unethical behavior may be driven by automatic processes, which may be different if Johnathan had personally assigned a task in the dark leadership condition. In this situation, the leader’s salience may make vengeful cognitions more relevant. Thus, explicit and implicit processes may be better predictors of ethical and unethical behavior depending on the nature of the task.

In addition to these implications, future research is needed to explore how long the effects of the self-identification process last subsequent to interacting with a dark leader. Previously, studies have shown that the effects of implicit priming (Kleiman & Hassin, 2011), and experience-taking (Kaufman & Libby, 2012) may last several hours to days. However, it is not clear whether self-identifying with dark attributes lasted beyond the course of this study. Related to this view was the finding that activity in resting state networks rebounded shortly after the dark leadership manipulation. Specifically, gamma wave amplitudes returned to the participants’ resting-level baseline. Although speculative, this may suggest that the deactivation of resting state networks created a window that allowed the self-concept to be re-modified. This potential offers several research directions that can explore whether the return of resting state network activity can affect the extent of the self-identification process or the duration that these effects have on behavior in general (e.g., minutes, hours, days, weeks).

Future research is also needed to determine if forming self-associations to implicit dark attributes has other consequences. For example, research shows that conflicts that occur between explicit and implicit motives adversely affect both psychological and physiological well-being (Baumann, Kaschel, & Kuhl, 2005). Because many participants in this study expressed a dissociation between explicitly and implicitly measured attributes (i.e., very few explicitly endorsed dark traits, but many implicitly endorsed dark traits), declines in subjective well-being as described by Baumann et al. (2005) may occur among those who had interacted with a dark
Research also shows that increased stress and negative affect predicts unethical conduct (Restubog et al., 2011; Yang & Diefendorff, 2009), although this specific processing pathway has not yet been investigated.

Future research can also investigate whether protocol analysis can be used to measure self-concept activation. Although participants’ thoughts were initially assessed in this study, the corruption of the data prevented this information from being analyzed. Hence, future work in this direction may be warranted.

Although this study focused on how leaders can influence their followers, findings from this study have broader implications for understanding how morality unfolds within complex social environments. Foremost, they suggest that moral decision making and behavior are influenced by interpersonal processes, which contrast with views that identify biological predispositions or individual characteristics as antecedents of moral and immoral behavior (e.g., Moll, Oliveira-Souza, & Zahn, 2005; Pujol et al., 2011). Consequently, these findings can open new avenues of research that explores how the social environment, including the influence of interpersonal exchanges, can shift peoples’ moral perceptions in an interactive, dynamic manner (Dinh & Gabriel, in review; Hoyt et al., 2013). Evidence for the importance of the social context also suggests that self-identification processes have an evolutionary significance, perhaps contributing to survival when the self-concept can mimic dominant others (Slotter et al., 2013). As such, efforts that consider the social context are timely given that ethical leadership theory (Brown & Treviño, 2006), and leadership theories in general (Lord & Dinh, 2014), are often leader-centric in scope.

Consistent with previous research (Yang & Diefendorff, 2009), state negative affect and anger significantly predicted moral decision making. Interestingly, affect also interacted with the
self-concept to predict unethical behavior. Although preliminary, these findings may support a
dynamic systems perspective on moral decision making and behavior (Dinh & Gabriel, in
review; Dinh & Lord, 2013), which argues that top-down and bottom-up processing systems
operate simultaneously to influence moral outcomes. Although not investigated in this study, the
influence of affect and the self-concept may operate through self-regulatory systems, such as the
behavioral activation system (BAS) or the behavioral inhibition system (BIS). Here, affective
processes can trigger behavior by activating BAS or BIS when a particular self-identity is salient
(Carver, 2004; Harmon-Jones, 2007; Lee et al., 2000). In light of these findings, future research
can explore if a dynamic systems perspective that considers the role of affect, embodied and
symbolic processes, offers a far more comprehensive understanding for how moral outcomes emerge.

Last, one peculiar finding obtained from this study was that although reflexive processes
were important, reflective processes that involve seeking revenge also affected subordinate
unethical behavior. On one hand, this provides evidence for the dual processing theory of
morality (Haidt, 2001; Reynolds, 2006); however, it also raises questions for understanding how
these two processes relate to one another. To date, moral processing research often considers
explicit and implicit processing pathways to be distinct and separable. Therefore, the predictive
validity of explicit and implicit are often compared (e.g., Johnson & Lord, 2010; Reynolds et al.,
2010). Although this may be a valid interpretation for relating the two processes, future research
is needed to investigate if they are entangled. Although speculative, future research that applies
principles of quantum cognitions (Busemeyer, Pothos, Franco, & Trueblood, 2011; Gabora et al.,
2008) can provide added clarity for understanding the unfolding of dynamic moral processes.
Although this study provided several contributions to this field of research, there are several limitations that should be addressed. First, to control for the effects of attractiveness and emotional expressivity, subordinates interacted with the leader using only audio communication during the leadership manipulation. Although this also helped ensure that participants did not recognize the confederate, which increased the legitimacy of the manipulation, the manipulation may have been more potent if communication had occurred face-to-face. Also, participants read a written narrative that described additional thoughts and behaviors associated with Machiavellian and narcissistic individuals after interacting with a dark or a supportive leader. Although this procedure helped standardize the behaviors and thoughts that participants could associate with dark leaders, as well as provide a richer repertoire of behaviors that could be observed (a feature that is severely restricted by virtual interactions), there are limits to the ecological validity of this procedure.

Another limitation concerns the use of the moral sensitivity measure. Currently this measure assesses several types of issues that are conceptually similar to Graham et al.’s (2011) universal moral domains (e.g., authority/respect, harm vs. care, fairness or reciprocity, in-group loyalty). However, other domains, including purity/sanctity were not captured by the measure. It is possible that this particular domain is much more difficult to assess as ‘purity’ concerns issues that are embodied and physical in nature (sensation of disgust). By having participants react by indicating whether segments in the measure were ‘important,’ the measure purportedly assessed sensitivity to potentially moral events. However, this measure does not reveal why certain events or issues were seen as important. For example, it is unclear if greater sensitivity to social information signified attentiveness to general types of social information (e.g., watchfulness) or
if it signified a genuine concern for others. As such, future research may attempt to expand upon this measure and provide greater clarity for the meaning of important events.

Third, this study used EEG as a method of assessing activity in resting state networks. Although research has shown that electrophysiological measures such as EEG can be used to assess neural activity in these neural networks (Mantini et al., 2007), neuroimaging techniques, like functional magnetic resonance imaging (fMRI), would provide more conclusive evidence for the activation or deactivation of resting state networks in response to dark leadership. Hence, future research that utilizes neuroimaging techniques may be needed to corroborate these results.

Fourth, the results in this study offer broad generalizations regarding the types of processes that individuals may use in moral decision making and behavior. Although some individuals may rely more on explicit processes (e.g., individuals with moral character or moral identity who often think through their actions with detail), others may be guided more by automatic implicit processes. Hence, the influence of implicit or explicit processing pathways may apply more to certain individuals than others, or they may operate simultaneously, such that it becomes difficult to separate these two processes apart as was previously described. Thus, it may be helpful for future research to include a neutral condition to examine the absolute effects of dark and supportive leadership.

Last, this study accessed state affect near the end of the study well after the leadership manipulation had occurred. Consequently, this may have weakened the relationship of implicit dark traits with state affect for predicting moral behavior. This is because implicit processes operate on a much faster time scale (milliseconds), and may require event-level assessments of affect in order to match this time scale. Future research could incorporate online tracking
methodologies to measure experienced affect in order to investigate possible interactions that may occur between implicit dark attributes and state affect.
CHAPTER VI

EXECUTIVE SUMMARY

In conclusion, the results of this study challenge a long held assumption in the dark leadership literature, which is that revenge cognitions underlie employee unethical behavior. This perspective assumes that victims of abusive leadership adopt an ideology that “revenge is a dish best served cold” as employees intentionally seek retaliation. However, this study applied a framework developed from the dual processing theory of morality (Haidt, 2001; Reynolds, 2006) to predict that nonconscious processes also contribute to employee unethical behavior. In doing so, this study demonstrated that reflexive and reflective processes may both operate together to influence unethical behavior, which supports and challenges these earlier assumptions. Notably, this study demonstrated that by deactivating subordinates’ self-concepts, victims of dark leadership formed implicit self-associations to a pattern of dark attributes, which in turn, shaped their moral perceptions. These effects occurred subconsciously as revealed by reaction time measures, and an implicit moral sensitivity measure. The effects of implicitly self-associated dark attributes also manifested behaviorally as individuals behaved opportunistically in a task that allowed them to cheat to acquire better financial rewards.
Together, the conclusions drawn from this study present a more complex picture for understanding the processes which underlie moral decision making and behavior, and they help to enrich the dark leadership literature. Moving forward, many organizational practices that rely on identifying “at risk” individuals for immoral conduct (e.g., by identifying dispositions in selection processes), or enforcing moral codes of conduct to encourage moral self-regulation, may have assumed that moral decision making and behavior are driven solely by thinking regarding reflective processes. However, moral perception appears to be malleable, dynamic (Klotz & Bolino, 2013; Leavitt et al., 2012), and susceptible to social values and traditions (Ginges et al., 2011; Hoyt et al., 2013; Rai & Fiske, 2011). Hence, changes to moral perception can influence how individuals respond morally (or immorally) to diverse organizational situations at an implicit level. Consequently, efforts to develop ethical organizations may require interventions that look beyond individual dispositions and cognitions as implied by the revenge literature. As Ashforth et al. (2008) had suggested, a far more comprehensive solution will require that scholars and practitioners understand how interpersonal group dynamics, along with organizational and societal factors, continually shapes moral thinking.

In sum, these findings provide helpful strides towards these objectives by highlighting the importance of the social context and the self-concept in moral perception, decision making, and behavior. They also suggest directions for future research that examine how moral perception may be affected by implicit constructs (e.g., goals, values, identities). By embracing a multidisciplinary perspective that incorporates neurological and social-cognitive findings, this study hopes to open doors for interdisciplinary moral research, as well as achieve Tierney and Tepper’s (2007) lofty goal for scholars to “look outside of the box” to develop innovative ideas that help advance the dark leadership literature.
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APPENDICES
Hi [participant’s name]. Thanks for participating in my research study. I hope that you are settling into the lab all right. There were a lot of technical glitches.

As my RA mentioned, my name is Johnathan and I’m the principle investigator of this study. I’ll just start by telling a bit about myself and the purpose of this study.

A bit about myself: I am finishing up my doctorate degree here at Akron, hopefully by the coming July. Afterwards I’m heading to Stanford University to accept a post-doc in their social-cognitive department. Generally, my research focuses on the antecedents of creativity in social networks as well as in daily social interactions.

So in this study, I’m looking at 3 skills that I think facilitates online team interactions. These are:

1. your ability to think logically and strategically
2. your reaction time to visual stimuli, and
3. your attention to detail.

We’ll be doing some easy tasks that will test these skills. Do you have any questions?

All right. For the first task, we’ll talk by using Skype and I’ll communicate to you from my office as this would simulate a virtual setting.

In a moment, we’re going to start the first task which assesses your ability to come up with strategies in a short period of time. Specifically, I’m going to have you complete a game called the “Lost at Sea task”. Your goal is to convince me that your answer to this game is the best one. My RA should have given you instructions on how to play this game.

Do you have the instructions to this game? [confirm that participant has the task instructions]

All right. This task was designed to assess creative thinking capacities and it does so by checking the combinations of items that you had selected. Essentially there are item combinations that will give you the most points, and some items and item combinations that will give you the lowest
points possible. I will be evaluating you based on what you’ve selected and your rationale for taking your items.

Make sure that you read the instructions carefully. I designed this task myself with a few colleagues at Michigan State to assess creative thinking capacities, so take it seriously.

All right. I will give you 6 minutes to prepare your answers for this task. In the meantime, I will disconnect this video call but will remain online. At the end of 6 minutes call my user ID to tell me your answer. There should be a timer by you. Use the timer to keep track of your time.

Do you have any questions?

[end call]

After 3 minutes, interrupt participant

Hi participant’s name. I know that said that you had 6 minutes to complete this task, but honestly, I have better things to do and this amount of time should be enough for you to go through the scenario.

If you didn’t pick your items yet, I want you to just pick them right now.

What did you pick.

After participant has completed the task

Thanks for completing the Lost at Sea task. For the rest of the study, you’ll be completing the online survey and some other tasks. I would like for you to go to the online survey page that my RA showed to you earlier and follow the instructions there. For example, the next part on the online survey should tell you to talk into the recorder for 1-minute like you did earlier.

If you have any questions at any point in the study, contact my RA by using Google Talk. Thanks again for participating.

[end call]
Hi [participant’s name], thanks for participating in my study and I hope that you are settling into the lab all right.

Since this is a fairly long study, we’ll go ahead and get started. As my RA mentioned, my name is Johnathan and I’m the principle investigator of this study. I’m not sure how much detail my RA said about this study, so I’ll start by telling a bit about myself and the purpose of this study.

A bit about myself. I am finishing up my doctorate degree here at Akron, hopefully by the coming July. Afterwards I’m heading to Stanford University to accept a post-doc in their social-cognitive department. Generally, my research focuses on the antecedents of creativity in virtual networks as well as in daily social interactions.

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(2) your reaction time to visual stimuli

(3) your attention to detail.

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All right, I’ll give you 6 minutes to prepare your answers for this task. In the meantime, I will disconnect this video call but will remain online. At the end of 6 minutes, call my user ID to give me your answer. There should be a timer by you. Use the timer to keep track of your time.

Do you have any questions?
Hi participant’s name. Are you all done? You can start when you are ready.

Thanks for completing the Lost at Sea task. For the rest of the study, you’ll be completing the online survey and some other tasks. I would like for you to go to the online survey page that my RA showed to you earlier and follow the instructions there. For example, the next part on the online survey should tell you to talk into the recorder for 1-minute like you did earlier.

If you have any questions at any point in the study, contact my RA by using Google Talk. Thanks again for participating.

[end call]
APPENDIX B

PROTOCOL ANALYSIS


In this experiment we are interested in what you say to yourself following some tasks that we give you. In order to do this, we will ask you to TALK ALOUD after working on the problems. What I mean by talk aloud is that I want you to say out everything that you say to yourself silently. If you are silent for any length of time I will remind you to keep talking aloud. Do you understand what I want you to do?

Good, before we turn to the real experiment, we will start with a couple of practice problems. I want you to talk aloud while you do these problems. First, I will ask you to multiply two numbers in your head.

So talk aloud while you multiply 12 x 10.

Good!

Now I would like you to solve an anagram. I will show you a card with scrambled letters. It is your task to find an English word that consists of all the presented letters. For example, if the scrambled letters are KOCO, you may see that these letters spell the word COOK. Any questions? Please “talk aloud” while you solve the following anagram:

NPEPHA = HAPPEN

Good!

Version 1:
The following passage is written in Wezwe, a language spoken only in New Guinea. In this task, you are to guess the correct translation of 5 pronouns in this passage, which have been underlined. Please note that the length of each Wezwe pronoun is not in any way related to the length of its correctly translated English pronoun. As an example, the English word “she” is “þintrnsde” in Wezwe.

Ég þurfti að biðjast afsökunar á buggy nýr app á föstudag, eftir að segja að fyrirtæki kans "skorti" að búa til "heimsklassa vara." Það var náðugur og auðmjúkur inntaka helstu mistök beirra - merki um að þeir taka viðskiptavini sína alvarlega og framkvæmir sig af heilindum.

Version 2:
The following passage is written in Malay, a language spoken in Southern Asia. In this task, you are to guess the correct translation of 5 pronouns in this passage, which have been underlined. Please note that the length of each Malay pronoun is not in any way related to the length of its correctly translated English pronoun. As an example, the English word “she” is “hônng” in Malay.

Tôi đã phải xin lỗi lỡ用药 mới vào thứ Sáu, sau khi công ty cho biết rằng chia khóa "muôn" tạo ra rộng "sản phẩm đăng cấp thể giới." Đó là một sai lầm lượng duệng đáng và khiêm tôn lớn - một dấu hiệu cho thấy họ mất khách hàng một cách nghiêm túc và thực hiện mình với tính toàn vẹn.
Scenario: You are adrift on a private yacht in the South Pacific. As a consequence of a fire of unknown origin, much of the yacht and its contents have been destroyed. The yacht is now taking on a lot of water and is slowly sinking. Your location is unclear because you were distracted trying to bring the fire under control. Your best estimate is that you are approximately one thousand miles south-south-west of the nearest land. You and four other passengers survive. Currently, the group is in a state of panic and there is no consensus on what to do.

Imagine that you are the leader of this group. Your task is to propose how you would handle the situation. Your objective is to ensure your own survival and the safety of the remaining passengers. In addition, you are given a list of items that are intact and undamaged by the fire.

You can select up to 5 items from this list. By default, the passengers elected to bring their personal items (e.g., jewelry, electronics), which they say they cannot part with. You can allow the passengers to bring along their personal items, but this will count as 1 item.

Note that among these items, you have:

- A very small rubber life raft with oars which is large enough to carry 4 people

Note that that bringing more items will increase the chance of the raft capsizing. However, bringing too few items may decrease your chances at survival.

You will be scored based on how clearly you can explain the situation to the researcher. You should note that they do not know the scenario as the scenario had been randomly given to you. You must also convincingly argue a case why your item choices and decisions will lead to the best possible outcome. That is, you should provide a strategy on what you should do. Answers that are clearly organized and illustrated are awarded with more points.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>*Personal items</td>
</tr>
<tr>
<td>2.</td>
<td>Maps of the Pacific Ocean</td>
</tr>
<tr>
<td>3.</td>
<td>Compass</td>
</tr>
<tr>
<td>4.</td>
<td>Sextant</td>
</tr>
<tr>
<td>5.</td>
<td>1 quart of 160-proof rum</td>
</tr>
<tr>
<td>6.</td>
<td>Fishing kit</td>
</tr>
<tr>
<td>7.</td>
<td>10 sq feet of transparent plastic</td>
</tr>
<tr>
<td>8.</td>
<td>Two gallon can of oil-gas mixture</td>
</tr>
<tr>
<td>9.</td>
<td>Mosquito netting</td>
</tr>
<tr>
<td>10.</td>
<td>Life vest</td>
</tr>
<tr>
<td>11.</td>
<td>A can of dried fruit and peanuts</td>
</tr>
<tr>
<td>12.</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>One case of US army C rations</td>
</tr>
<tr>
<td>14.</td>
<td>5 gallon-can of water</td>
</tr>
<tr>
<td>15.</td>
<td>Razor</td>
</tr>
<tr>
<td>16.</td>
<td>Two boxes of chocolate</td>
</tr>
<tr>
<td>17.</td>
<td>Shark repellant</td>
</tr>
<tr>
<td>18.</td>
<td>Cigarettes &amp; a lighter</td>
</tr>
<tr>
<td>19.</td>
<td>Small am/fm radio</td>
</tr>
<tr>
<td>20.</td>
<td>15 feet of nyon rope</td>
</tr>
<tr>
<td>21.</td>
<td>Cell phone</td>
</tr>
<tr>
<td>22.</td>
<td>Raft with oars</td>
</tr>
<tr>
<td>Item</td>
<td>Problem</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1. Sextant</td>
<td>Sextant requires tables to use. Useless otherwise.</td>
</tr>
<tr>
<td>2. Maps of Pacific ocean</td>
<td>Map is worthless without other navigational equipment</td>
</tr>
<tr>
<td></td>
<td>No landmarks to pinpoint location</td>
</tr>
<tr>
<td>3. Compass</td>
<td>Cannot provide exact location</td>
</tr>
<tr>
<td>4. Cell phone</td>
<td>No reception towers to (1) catch signal and (2) phone is likely soaked</td>
</tr>
<tr>
<td>5. Small transistor radio</td>
<td>No transmission towers to relay signal to radio making it useless</td>
</tr>
<tr>
<td></td>
<td>Transistor radio does not have a microphone making it useless</td>
</tr>
<tr>
<td>6. Fifteen feet of nylon rope</td>
<td>Nothing to tie together</td>
</tr>
<tr>
<td>7. Fishing kit</td>
<td>No guarantee that you can catch anything.</td>
</tr>
<tr>
<td>8. Mosquito netting</td>
<td>No mosquitoes in the mid Pacific</td>
</tr>
<tr>
<td>9. 10 sq feet of transparent plastic</td>
<td>Too small for any real use</td>
</tr>
<tr>
<td>10. Raft with oars</td>
<td>Too small to fit all 5 people and items on without capsizing.</td>
</tr>
<tr>
<td></td>
<td>Issue becomes who to leave behind</td>
</tr>
<tr>
<td>11. One case of US army C rations</td>
<td>Not enough to for all 4 people</td>
</tr>
<tr>
<td>12. 5 gallons of water</td>
<td>Not enough for all 4 people</td>
</tr>
<tr>
<td>13. One quart of 160 proof rum</td>
<td>Antiseptic but not necessary</td>
</tr>
<tr>
<td>14. Shark repellent</td>
<td>Obvious use-stay out of water</td>
</tr>
<tr>
<td></td>
<td>Practically useless</td>
</tr>
<tr>
<td>15. Personal items</td>
<td>Allowing passengers (presumably rich pompous individuals) to take personal items that do not contribute to survival (e.g., jewelry)</td>
</tr>
</tbody>
</table>
# APPENDIX D

## DARK LEADERSHIP MANIPULATION

<table>
<thead>
<tr>
<th>Phase</th>
<th>Abusive behavior</th>
<th>When to enact in task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I – Introductory communication with participant</td>
<td>□ Lie* Explain to participant that they have 6 minutes to complete the task. In reality, participants will only have 3 minutes</td>
<td>When explaining the Lost at Sea task to participants</td>
</tr>
<tr>
<td>Phase II – Participant explains their strategy, and items they took</td>
<td>□ Being rude*</td>
<td>During participant’s explanation of their answer choices</td>
</tr>
<tr>
<td>Phase III – Participant awaits expert’s feedback</td>
<td>□ Ridicule* □ Incompetence* □ Condescending*</td>
<td>After participant has finished explaining their answer choices</td>
</tr>
<tr>
<td>Phase IV – End of task</td>
<td>□ Puts down in front of others*</td>
<td>End of task</td>
</tr>
</tbody>
</table>
## Phase III – Critical Issues Missed by Participants

<table>
<thead>
<tr>
<th>Issues</th>
<th>Key leadership behavior</th>
<th>Problem</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Capsizing raft by taking too many items or they did not take raft</td>
<td>Ridicule</td>
<td>They take too many items and raft will sink OR they did not take the raft and will all die unless they took the gas/lighter combination. Taking too many items may occur if participant allowed passengers to keep their personal items</td>
<td><em>Example of a ridiculing answer:</em> In addition to making countless stupid little mistakes, you’ve made a critical error that is so dumb I honestly have nothing to say. Did you realize that you did not take a raft? Your yacht is going to be at the bottom of the ocean. How do you deal with that? OR I don’t think you took this task seriously at all and it sounds to me that you didn’t bother reading the instructions carefully. It specifically stated that your raft will sink if you took on too many items. So having known that, it sounds like you’re still allowing passengers to carry on absolutely useless items. Is that the dumbest thing you can do or what.</td>
</tr>
<tr>
<td>2. They take raft</td>
<td>Condescending</td>
<td>They will have to leave someone behind. Indicator of bad leadership</td>
<td><em>Example of condescending answer:</em> OK so you took a raft. Go back and read to me what it says about the raft. Yeah, it says that the raft can only carry 4 people. Now tell me how many people survived. Yeah, 5 people. Do that math. That means you’re going to leave</td>
</tr>
</tbody>
</table>
someone behind. What kind of leader does that? Not a good one in my opinion.

| 3. They do not take the lighter and oil mixture | Incompetent | There is no way to call for help. | Example of an incompetent response: I’m listening to the items you’ve taken and am absolutely dumbfounded as to why you focused on absolutely useless items. How long do you expect to survive without a means to call for search and rescue? To be perfectly honest, your responses were illogical and dumb. You’re pretty much dead and failed this task. |
### Dark Leadership Behavioral Repertoire

<table>
<thead>
<tr>
<th>Abusive Leadership Behavior</th>
<th>Example (key words are in bold)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lie</strong></td>
<td>- Actually I lied. You only have 5 minutes to prepare for this task.</td>
</tr>
</tbody>
</table>
| Incompetence                | - Did you read the instructions? It says that you have to argue convincingly why you selected each item. These are fairly basic instructions.  
                            | - Why don’t you listen to yourself to hear how stupid you sound right now  
                            | - That’s the stupidest thing I’ve heard today.  
                            | - You’re a terrible leader.  
                            | - Do you have a clue how is that going to work? Because I don’t think you do.  
                            | - Are you sure you want to give up? What, is the pressure too much for you to handle? Like I said, this task has been shown to be an accurate predictor of academic and career success. Based on your performance, if you can’t handle this, I’m going to say your future looks rather sorry. By the way, quitting earns you a 0 on this task.  
                            | - Just to let you know, you have the lowest performance score of all the participants who came in today |
| **Low performance score**  |                                  |
| **Ridicule**                | - That’s the worst idea I’ve heard today  
                            | - That is completely wrong  
                            | - Let me get this straight. You’re telling me that… How does that make any sense?  
                            | - So you’d leave someone behind? Wow. What kind of leader does that?  
                            | *If participant gives up* - If you can’t handle my feedback tough. Do you think people are going to play nice and give you rosy-colored performance evaluations out in the real world especially when you’ve done a pathetic job? No. I’m doing you a favor by giving you a realistic view of how it’s like out there. So if you can’t handle this, I don’t know what to say to you.  
                            | *Not convincing* - You’re not doing a good job at convincing anyone here  
                            | - Is that supposed to be convincing? Because I don’t buy it.  
<pre><code>                        | - I don’t get it. |
</code></pre>
<table>
<thead>
<tr>
<th>Behavior</th>
<th>Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condescending</td>
<td>- I want you to explain to me again why you would pick this. Oh wait, you can’t because there’s absolutely no reason to bring this item. -OOkk -Really? -Not many people I know would pick something like that. -Excuse me. Do you know who you are speaking to? I’d watch it.</td>
</tr>
<tr>
<td>Puts down in front of others</td>
<td><em>At end of session before returning to experimenter.</em> This participant did the worst on the task so far.</td>
</tr>
</tbody>
</table>
APPENDIX E

SUPPORTIVE LEADERSHIP MANIPULATION

<table>
<thead>
<tr>
<th>Phase</th>
<th>Supportive behavior</th>
<th>Where to enact in task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I – Participant enters lab</td>
<td>☐ Greet</td>
<td>Beginning of task upon participant’s arrival</td>
</tr>
<tr>
<td>Phase II - Participant explains</td>
<td>☐ Considerate*</td>
<td>During participant’s explanation of their answer choices</td>
</tr>
<tr>
<td> their strategy, and items they took</td>
<td>Issue words of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>encouragement, pay</td>
<td></td>
</tr>
<tr>
<td></td>
<td> attention to participant as they speak</td>
<td></td>
</tr>
<tr>
<td>Phase III - Participant awaits</td>
<td>☐ Encourage*</td>
<td>After participant has finished explaining their answer choices</td>
</tr>
<tr>
<td> expert’s feedback</td>
<td>☐ Supportive*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ Thoughtful*</td>
<td></td>
</tr>
<tr>
<td>Phase IV – end of task</td>
<td>☐ Congratulate</td>
<td>End of task</td>
</tr>
<tr>
<td></td>
<td> participant</td>
<td></td>
</tr>
</tbody>
</table>

Note: *Key behaviors found in Rafferty & Griffin’s (2004) Supportive Leadership Scale
<table>
<thead>
<tr>
<th>Issues</th>
<th>Key leadership behavior</th>
<th>Problem</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Capsizing raft by taking too many items or they did not take raft</td>
<td>Encourage</td>
<td>They take too many items and raft will sink OR they did not take the raft and will all die unless they took the gas/lighter combination. Taking too many items may occur if participant allowed passengers to keep their personal items</td>
<td>Overall, you did a really good job on this task. There are a couple of things that you might want to consider though. For instance, you might not have considered that taking on too many items may cause your raft to sink. I can see that your decision to let the passengers keep their personal items is nice, but I’m not so sure if that’s a good long term strategy since these items do take up space. That’s something to consider in the future.</td>
</tr>
<tr>
<td>2. They take raft</td>
<td>Supportive</td>
<td>They will have to leave someone behind. Indicator of bad leadership</td>
<td>Have you considered that by taking the raft you’ll have to leave someone behind? It’s ok, it’s a tough call for sure. Have you thought about that? I’m not sure what I’d do in that situation.</td>
</tr>
<tr>
<td>3. They do not take the lighter and oil mixture</td>
<td>Thoughtful</td>
<td>There is no way to call for help.</td>
<td>In my opinion, you did an outstanding job explaining to me why you selected your items. One thing that I wanted to point out though is that your strategy seems to focus on short term goals – like making sure that you have food. But what you might want to consider is to see if you can draw help to you. I’d definitely think about that more.</td>
</tr>
</tbody>
</table>
Supportive Leadership Behavioral Repertoire

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Example (key words are in bold)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supportive</td>
<td>-Oh all right. I can see where you are going with that</td>
</tr>
<tr>
<td></td>
<td>-That makes sense</td>
</tr>
<tr>
<td></td>
<td>-I like that idea</td>
</tr>
<tr>
<td></td>
<td>-I agree with that</td>
</tr>
<tr>
<td></td>
<td>-I see what you mean</td>
</tr>
<tr>
<td></td>
<td>-That’s an interesting item to take. Could you explain that in more detail?</td>
</tr>
<tr>
<td>Encourage</td>
<td>-It’s OK</td>
</tr>
<tr>
<td></td>
<td>-Take your time</td>
</tr>
<tr>
<td></td>
<td>-Don’t worry</td>
</tr>
<tr>
<td></td>
<td>-You’re doing fine. Keep it up.</td>
</tr>
<tr>
<td></td>
<td>-Everyone has trouble with this task</td>
</tr>
<tr>
<td></td>
<td>-If participant gives up. Are you sure you want to give up?</td>
</tr>
<tr>
<td></td>
<td>You’re almost finished! Everyone has trouble with this task.</td>
</tr>
<tr>
<td></td>
<td>-I’m don’t mean to give you pointed feedback. You’re doing fine. Keep it up.</td>
</tr>
<tr>
<td>Considerate /Thoughtful</td>
<td>-I’m not sure how that would make sense?</td>
</tr>
<tr>
<td></td>
<td>- Could you help me understand better by explaining that again?</td>
</tr>
<tr>
<td></td>
<td>-OK I see, but...</td>
</tr>
<tr>
<td></td>
<td>-One thing that you should consider is that...</td>
</tr>
<tr>
<td></td>
<td>-I’m pretty sure that these are the answers as I designed the task.  But my answers are not absolute, so I appreciate your input</td>
</tr>
</tbody>
</table>
APPENDIX F

DARK LEADERSHIP NARRATIVES

“I was adamant with my decision as I stared down my opponent’s pale, frightened eyes. I saw him waver and fall to his knees. I don’t tolerate disobedience or allow others to question of my authority or control over this group. No, there is no room for disobedience or weakness here. Those with a weak heart will flounder in a world that is so chaotic and uncertain. Besides, who is he to question my authority? His skills and abilities do not compare to mine. I have succeeded where others have failed. Some say that I am cunning and unforgiving, but they do not realize the strength in my abilities. I see that power is the law of this land. I feel authority in my standing. It is I who has saved this group in more ways than I can remember. These are dark times, and I must do what must be done to survive.

I turned to stare back into the eyes of the rest of my group. They silently nod in accent and accept my decision, cold and harsh as it may be. There is no time to trust outsiders. It is not the time to trust anyone. Resources are scarce and trusting unknowns is not a luxury I can afford. The weak will fall at the hands of the mighty.”

“It was a challenging problem, one that took every ounce of my will and wit to solve. It was a problem that daunted me for weeks, no months. How badly I wanted that coveted title. That fame. I needed a strategic advantage, an edge, if I wanted to defeat my opposition. I needed something that will make me stand high above the rest. An idea came to me suddenly when I least expected it. It was when I was walking in the park of all places. This simple idea would ensure my success and victory. How silly of me to have missed it before. All I had to do was to simply reinterpret the rules. Bend it slightly in my favor. No harm could come from it. No one would ever know. I am entitled to what is rightfully mine. It was wrong for my opponents to
steal my work and my pride in the first place. I am merely reclaiming what is rightfully mine. Tasks of this competitive nature demand a bit of…‘creative reinterpretation’ anyway.”
APPENDIX G

MORAL SENSITIVITY MEASURE

Instructions
You will read the story one paragraph at a time. You will have fifteen seconds to read each paragraph. Please take your time and read each paragraph carefully. If you believe that an important issue is raised in the paragraph, push button number (1) on the keypad. (Note: N=neutral, S=strategic/tactic, J = justice, C = care, H=harm, I = ingroup/loyalty, R = respect, A=authority. *Items that were added onto Robertson et al.’s [2007] original measure)

It was a late morning in mid-December. Ryan Smith, a research analyst, was in his office at the L & H Marketing Research Company, a firm located in a metropolitan center on the East Coast. N

Ryan was working furiously to complete the marketing strategy report for his client, InTech, a fast growing communications technology firm. The client was in the process of introducing a new line of lightweight PC tablets. N

InTech urgently needed data on the buying practices and media habits of college students who are likely to invest in their product. N

Ryan began to think about the project he is currently doing for InTech . N

He thought about the series of problems had slowed the marketing research report that was due on Monday. N

To meet this deadline, Ryan had to come in to work on the weekend. Ryan regretted having to leave his wife and children to come into the office on a Saturday to complete the report. Today was also his wife’s birthday. C

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He also did not like to spend weekends away from his family. Most of all, he did not like disappointing his 12 year-old daughter by missing her Saturday morning basketball game. C

* Although Ryan can argue and challenge his supervisor, Barry, about having to work on the weekend, he doesn't and comes into work. R

Ryan's thoughts return to the InTech marketing strategy report sitting on his mahogany desk. A

Ryan's boss, Barry, recommended that they focus on InTech’s TV advertising data on sales. The data did not look promising. However, Barry had made it clear that he only wanted to see data that supported his thinking and nothing else. J

Ryan felt pressured by Barry to “bend” the interpretation of the data. Ryan, however, was reluctant to make the survey results appear more consistent with what Barry wanted. J

*Ryan’s thoughts drift to a second issue he had with Barry as he emails a coworker for advice. N

*Wanting a good partnership with InTech, Barry informed Ryan that he had to work after hours to complete additional tasks for InTech by Sunday morning. Ryan has been working nonstop, and has already put in more work hours than anyone else this week to complete the report. J

* Feeling that he shouldn’t challenge his boss, however, Ryan did not complain and did as he was told. R

A moment later, a telephone call from the company security guard served as a reminder to Ryan that he had ordered a take-out lunch from the local deli. Ryan told the guard to allow the delivery person access to L & H Marketing’s suite of offices. N

*Ryan thumbed through his wallet. Passing over new dollar bills, he gave the delivery person a few very torn, dirty dollar bills as tip. H

*Nearby, Ryan noticed that a fly had landed on a coworker’s sandwich that had been left uncovered. Ryan said nothing to the coworker when the coworker returned. H

Ryan continued to review the history of the project with InTech. He recalled that back in September he had followed L & H Marketing's template for standard sampling procedures for projects of this type. T

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On this basis, he considered surveying 250 college students who own tablet PCs from 15 different cities across the nation. This would have resulted in a total sample of 3750 students.

Then, Ryan recalled disagreeing with Charles Chastain and a few other members of Ryan’s research team in the marketing department. Charles had argued for samples proportional to city sizes. This, however, would mean committing more money and resources over the project’s lifetime.

Charles stressed the importance of collecting more representative data that would increase the study's validity. Ryan, however, was concerned about the increase in cost that would interfere with doing other studies of equal importance.

*Ryan felt concerned about the growing tension and lack of harmony among members in his research team as a result of this discussion.*

*Although already very behind in his work, Ryan clears his personal schedule and sets aside personal time and resources to find a solution that would satisfy everyone in the team.*

Now the building was almost empty. Ryan found that a quiet environment facilitated his ability to think through the history of the project.
APPENDIX H

EXPLICIT MEASURES

Cambell-Sills & Stein’s (2007) Resilience Scale

Please rate the following statements on a scale from 0 (not true at all) to 4 (true nearly all the time)

1. Able to adapt to change
2. Can deal with whatever comes
3. Tries to see humorous side of problems
4. Coping with stress can strengthen me
5. Tend to bounce back after illness or hardship
6. Can achieve goals despite obstacles
7. Can stay focused under pressure
8. Not easily discouraged by failure
9. Thinks of self as strong person
10. Can handle unpleasant feelings

Gino et al.’s (2010) Self-Regulatory Depletion Scale

1. This task required self-control
2. This task required willpower
3. This task required cognitive effort.

Neihoff & Moorman’s (1993) Interpersonal Justice Scale

1. When decisions are made about my work, the researcher treats me with kindness and consideration
2. When decisions are made about my work, the researcher treats me with respect and dignity.
3. When decisions are made about my work, the researcher is sensitive to my personal needs.
4. When decisions are made about my work, the researcher deals with me in a truthful manner.
5. When decisions are made about my work, the researcher shows concern for my rights as an employee.
6. Concerning decisions made about my work, the researcher discusses the implications of the decisions with me.
7. The researcher offers adequate justification for decisions made about my work.
8. When making decisions about my work, the researcher offers explanations that make sense to me.
9. My researcher explains very clearly any decision made about my work.

Fenigstein et al.’s (1975) Private Self-consciousness scale

1. I’m always trying to figure myself out
2. I reflect about myself a lot
3. Generally, I’m not very aware of myself (R)
4. I’m often the subject of my own fantasies
5. I’m generally attentive to my inner feelings
6. I’m consistently examining my motives
7. I never scrutinize myself (R)
8. I sometimes have the feeling that I’m off somewhere watching myself
9. I’m alert to changes in my mood
10. I’m aware of the way my mind works when I work through a problem.

Tepper’s (2000) Abusive supervision Scale
(1=not at all, 5 = very often)

The researcher…

1. Ridicules me
2. Tells me my thoughts or feelings are stupid
3. Puts me down in front of others
4. Doesn’t give me credit for jobs requiring a lot of effort
5. Breaks promises he makes
6. Expresses anger at me when he is made for another reason
7. Makes negative comments about me to others
8. Is rude to me
9. Tells me I’m incompetent
10. Lies to me

Rafferty & Griffin’s (2004) Supportive leadership scale
(1=strongly disagree, 5 = strongly agree)

1. Considers my personal feelings before acting
2. Behaves in a manner which is thoughtful of my personal needs
3. Sees that the interests of employees are given due consideration

Aquino & Reed’s (2002) Moral Identity Scale
(1 = strongly disagree 7 = strongly agree)
Listed below are some characteristics that might describe a person: Caring, Compassionate, Fair, Friendly, Generous, Helpful, Hardworking, Honest, and Kind. The person with these characteristics could be you or it could be someone else. For a moment, visualize in your mind the kind of person who has these characteristics. Imagine how that person would think, feel, and act. When you have a clear image of what this person would be like, answer the following questions.

1. It would make me feel good to be a person who has these characteristics.
2. Being someone who has these characteristics is an important part of who I am.
3. I would be ashamed to be a person who had these characteristics. (R)
4. Having these characteristics is not really important to me. (R)
5. I strongly desire to have these characteristics.

Heatherson & Polivy (1991) State self-esteem
1. I feel confident about my abilities
2. I am worried about whether I am regarded as a success or failure
3. I feel satisfied with the way my body looks right now
4. I feel frustrated or rattled about my performance
5. I feel that I am having trouble understanding things that I read
6. I feel that others respect and admire me
7. I am dissatisfied with my weight
8. I feel self-conscious
9. I feel as smart as others
10. I feel displeased about myself (R)
11. I feel good about myself
12. I am pleased with my appearance right now
13. I am worried about what other people think of me
14. I feel confident that I understand things
15. I feel inferior to others at this moment (R)
16. I feel unattractive (R)
17. I feel concerned about the impression that I am making (R)
18. I feel that I have less scholastic ability right now than others (R)
19. I feel like I’m not doing well (R)
20. I am worried about looking foolish (R)

Bradfield & Aquino’s (1999) Revenge Scale

1. I’ll make Johnathan pay
2. I wished that something bad would happen to Johnathan
3. Johnathan is bad
4. I want to see Johnathan hurt and miserable
5. Johnathan is scum
6. I’m going to get even
7. I want to see Johnathan get what he deserves

Raskin & Terry (1988)’s Narcissism Scale
1. I am more capable than other people.
2. I think I am a special person
3. I like to be the center of attention.
4. I insist upon getting the respect that is due me.
5. I am going to be a great person

Dahling, Whitaker, & Levy’s (2009) Machiavellian Scale

1. I believe that lying is necessary to maintain a competitive advantage over others.
2. The only good reason to talk to others is to get information that I can use to my benefit.
3. I would cheat if there was a low chance of getting caught.
4. I enjoy having control over other people.
5. I want to be rich and powerful someday.

Selenta & Lord’s (2005) Independent Identity Scale

1. I feel best about myself when I perform better than others.
2. I frequently think about the ways that I am better or worse off than other people.
3. I have a strong need to know how I stand in comparison to my coworkers.
4. I often compete with my friends.
5. I thrive on opportunities to demonstrate that my abilities or talents are better than those of other people.

Watson, Clark, & Tellegen’s (1988) Positive and Negative Affective Scale

Please rate how you feel at this moment

1. Interested
2. Irritable
3. Distressed
4. Alert
5. Excited
6. Ashamed
7. Upset
8. Inspired
9. Strong
10. Nervous
11. Guilty
12. Determined
13. Scared
14. Attentive
15. Hostile
16. Jittery
17. Enthusiastic
18. Active
19. Proud
20. Afraid
APPENDIX I

IRB APPROVAL APPLICATION

NOTICE OF APPROVAL

February 27, 2013

Jessica Dinh
540 East Portage Trail, Apt. B01
Cuyahoga Falls, Ohio 44221

From: Sharon McWhorter, IRB Administrator

Re: IRB Number 20120912-2 "A Neurocognitive Perspective on Dar Leadership and Employee Resilience: Moral Sensitivity and Influences of the Self-Structure"

Your request for a change in the referenced project has been approved under Expedited Categories #6/7.

Approval Date: February 26, 2013
Expiration Date: October 14, 2014
Continuation Application Due: October 4, 2014

In addition, the following is/are approved:

☐ Waiver of documentation of consent
☐ Waiver or alteration of consent
☐ Research involving children
☐ Research involving prisoners

Please adhere to the following IRB policies:

☐ IRB approval is given for not more than 12 months. If your project will be active for longer than one year, it is your responsibility to submit a continuation application prior to the expiration date. We request submission two weeks prior to expiration to ensure sufficient time for review.
☐ A copy of the approved consent form must be submitted with any continuation application.
☐ If you plan to make any changes to the approved protocol you must submit a continuation application for change and it must be approved by the IRB before it is implemented.
☐ Any adverse reactions/incidents must be reported immediately to the IRB.
☐ If this research is being conducted for a master’s thesis or doctoral dissertation, you must file a copy of this letter with the thesis or dissertation.
☐ When your project terminates you must submit a Final Report Form in order to close your IRB file.

Additional information and all IRB forms can be accessed on the IRB web site at:
http://www.uahmno.edu/research/onsa/compliance/IRBHome.php

CC: Robert Lord – Advisor
CC: Wadee Gallman – IRB Chair

Approved consent form(s) enclosed

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